



ROYAL ACADEMY FOR OVERSEAS SCIENCES

EVALUATION OF DEVELOPMENT RESEARCH

Guest Editors: I. BEGHIN, G. STOOPS & E. THYS

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EVALUATION OF DEVELOPMENT RESEARCH

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Guest Editors: I. BEGHIN, G. STOOPS & E. THYS

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CONTENTS

Foreword.....	5
J. BERLAMONT. — Introduction.....	7
I. BEGHIN. — Evaluation of Development Research: Difficulties and Questions.....	15
G. STOOPS. — The Problem of Bibliometry. Reflections on its Use for evaluating Research in the South	23
J.-J. DROESBEKE. — Lessons learned from the Rules on Ranking of Universities	29
S. N. BALAGANGADHARA. — Doing Development Research in Asia. Problems and Perspectives	37
F. MUHASHY HABİYAREMYE. — Towards Research which ac- celerates Development: the Viewpoint of Africa	45
I. YEPEZ DEL CASTILLO. — Amérique latine: une recherche à plusieurs vitesses.....	55
L. JANSSENS DE BISTHOVEN. — Supporting Development Relevant Research.....	65
Conclusions	75
Programme.....	79
Contributors	81

Foreword

The Royal Academy for Overseas Sciences, because of its very nature, has a major concern which is to assist in various ways research and researchers in countries in the South. Good and relevant research is indeed conducted in almost all of these countries, but without proper recognition or satisfactory dissemination. As a result, researchers in the South find themselves at a disadvantage when compared with their colleagues in the North, and development does not benefit from their research.

The celebration of the Academy's 75th anniversary dedicated to the theme "New Challenges for the Academies in a Changing World" (Brussels, 9-10 October, 2003) was taken as an opportunity to focus on new roles, one of which was the evaluation of development research. The Academy decided to set up a Task Force with a mandate for studying the issue more in depth. The Task Force was composed of members of the Academy representing its three sections: Human Sciences, Natural and Medical Sciences, and Technical Sciences.

The first concrete action of the Task Force's efforts over recent years was the organization of the present Symposium. The meeting had a clear and plain purpose: jointly explore and reach conclusions, together with scientists from the South and with Belgian cooperation agencies, about two main topics:

- the general issue of evaluating development research, and
- the use of bibliometry in evaluating research and researchers in the South.

All active participants (speakers and members of the closing round table) first received a short working paper providing them with the Symposium's background and expectations. A list of four questions was attached (see the introduction by J. Berlamont in this document). The participants were invited to answer at least two questions of their own choice, what each of them actually did.

The order of the presentations followed the same logic as the sequence of questions, and the day concluded with a round table including the guest speakers. The audience participated actively, and the discussions were unusually innovative and to the point. As a result — as the reader will observe —, the stated objectives were met, but the Symposium exceeded by far our expectations, bringing new elements about topics such as the strengthening of research capacity and interinstitutional cooperation (see the Conclusions at the end of these proceedings).

The organizers and the editors wish to extend their sincere appreciation to all active participants for their contribution as speakers and/or members of the final round table.

Ivan BEGHIN, Georges STOOPS and Eric THYS
Editors

Introduction

by

Jean BERLAMONT*

SUMMARY. — Evaluation of research should be more about quality than about quantity. The number of publications and the impact factor of the journals show only part of the picture. The problems that academics encounter with these evaluation methods are basically the same in the North and the South. Evaluation of development research should take into account the impact of the work on society, dissemination of results and valuation of the research efforts for the individual researcher and his personal development.

1. Introduction

Since 2003, and more precisely after a discussion during its 75th anniversary celebration, the Belgian Royal Academy for Overseas Sciences has been concerned with the questions raised by “the evaluation of development research”. A Task Force composed of members of the three Sections of the Academy has been set up, led by Ivan Beghin and Georges Stoops. The Task Force has prepared the Working Paper that will be the basis of today’s discussions.

2. Evaluation of Research

Before discussing “the evaluation of development research”, we should look at the evaluation of research in general. In universities, national science foundations and prize awarding academies, it is common practice to “measure” the quality of a researcher or a research group by counting the number of publications in so-called A1 or (Thomson -) SCI journals (GARFIELD & SHER 1963). Other aspects may be taken into account (*e.g.* competitively obtained research budgets, scientific awards, invited lectures), but the main indicator very often is the number of journal publications. As long as publications were meant to share research results

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with interested readers (publication is dissemination of results), the number of publications in esteemed journals with peer review indeed was a measure of the quantity and quality of someone's research efforts, but every "measuring system" eventually becomes a "controlling system". It is not uncommon today that a research group first selects the journals in which they would like to publish, choose a subject within the scope of the journal, apply for the funding and carry out the research! More and more, editors see a doubling or tripling of the number of submitted manuscripts, which makes it hard to find enough good reviewers willing to do the job! The system is likely to collapse due to its success.

In my opinion, SCI journal papers should be a measure of the **quality** of somebody's research work, not of its **quantity**. In many disciplines, especially in the rapidly evolving ones, it might be more appropriate to publish at international conferences to disseminate research results. Some conferences are highly selective indeed. Whilst the time between submission and publication in a journal may take one to two years, a conference paper is published within a few months. Of course, there are also purely "commercial" conferences that aim at maximizing the number of attendants and profit, and are rather social gatherings than scientific events.

Today, not only the number of journal publications counts but also the "quality" or status of the journal in which they are published. Therefore, the "impact factor" (IF) of the journal is used. It is the average number of times that an article from the journal has been cited during the first two years after its publication. Obviously, the IF does not say anything about the quality of an individual paper; neither is it a measure of the quality of the journal, but rather a measure of the size of the scientific community in a particular discipline and the popularity of the journal. In 2004, ninety per cent of the IF of *Nature* was based on only twenty-five per cent of its articles!

One should consider the useful lifetime of knowledge, which differentiates between scientific fields and which will be relevant talking about development research. The "half-life of knowledge is the amount of time that has to elapse before half of the knowledge in a particular area is superseded or shown to be untrue" (MACHLUP 1962). The half-life of psychology has been estimated to be five years (HEBB 1975). TASSIOS & LOGOTHETIS (1974) used the citations of scientific articles in journals as an indicator of the wear out of knowledge. They noticed that in civil engineering fifty per cent of the cited articles were older than seven years. He concluded that the half-life of knowledge in civil engineering was about seven years. In nuclear engineering it was two and a half years. Eighty per cent of the knowledge has become obsolete after fifteen years in civil engineering and after only seven years in nuclear engineering. Knowledge in "traditional fields" lasts long; knowledge in newer fields develops fast and is quickly outdated. My most cited paper dates back to 1993. One third of the citations were in the last four years. The largest number of citations occurred when the paper was ten, eleven and thirteen years old! Using two years as a window for deter-

mining the IF of a journal is clearly not applicable in all fields... Since 2009 the Journal Citation Reports (JCR) also include a five-year impact factor, which is clearly more suitable for more “traditional” fields.

Therefore IF can not be compared between scientific areas. Some examples:

CA – Cancer Journal for Clinicians	IF = 69
Nature	IF = 29
Science	IF = 26
Estuarine, Coastal and Shelf Science	IF = 1.8
ASCE, Journal of hydraulic engineering	IF = 1

Some editors advise potential authors to cite from the journal in which they want to publish to manipulate the IF!

3. Evaluation of Development Research

“Excellence is relevant, wherever it occurs.”

(C. Bode, Deutscher Akademischer Austausch Dienst (DAAD),
Beijing, 2006, oral presentation)

What is “development research”? It is one of the questions to be answered today. It is research that is, or could somehow be, relevant for development.

When evaluating development research, one has to distinguish between the **process of doing research** and the proper outcomes of the research. Developing countries need good, creative and innovative researchers to solve their immense problems. One should realize that it is probably more difficult to find solutions in a complex environment with limited resources than to do so in a rich, “northern” environment (*e.g.* health care and adequate food supplies). Training of future researchers in a good and stimulating environment is therefore very important. The project on which they work, and which very often provides the material resources for the research, is not so important as such. They have to be trained by doing research and for this purpose it does not matter very much what type of research is carried out or which subject is treated. Students from developing countries should be trained in research methodology: how to ask the right research questions, how to design the right experiments, how to carry out the right measurements, how to develop the proper models. These are generic skills which can be used later for doing focused research once they are back in their own country, disregarding the process through which they have been acquainted.

As far as the **research outcomes** are concerned the question is more difficult to answer. It is sometimes said that developing countries need “appropriate technology”, meaning simple, non-sophisticated technology. But there is no such a thing like “appropriate technology”. There is only good and bad science and good and bad technology. All good technology is appropriate.

It is also untrue that high tech cannot be used in developing countries as can be shown in two examples from an Interuniversity Cooperation (IUC) project

with Escuela Superior Politécnica del Litoral (ESPOL, Guayaquil, Ecuador). In one of them, resistant banana varieties are cultivated with up-to-date gene technology (SANTOS *et al.* 2009). Bananas are a basic crop for the Ecuadorian population. In a second one, one manages, using up-to-date GIS technology, to localize the coastal areas where the shrimp population is affected by the White Spot Syndrome Virus (WSSV), which allows an efficient and timely control of that disease (SONNENHOLZNER *et al.* 2004). Shrimps are a basic food commodity and an important export product. “We don’t help developing countries by compromising on high standards.”

In developing countries science is relevant if it helps to solve problems on the short or intermediate term. Developing countries face immense problems which partly can be solved by knowledge and technology which is already **available elsewhere**, but which has to be adapted to the local context and boundary conditions, *e.g.* by using local materials and local labour. This is exactly what an engineer should do any time and anywhere: solve problems using scientific knowledge under external constraints (*e.g.* drinking water production and distribution, sanitation, better crop productivity, irrigation, ...). Here there is a need for knowledge transfer and trained researchers to adapt the knowledge to site-specific conditions. “Sharing the fruits of scientific and technological progress is one of the most important ways that rich countries can help poor countries fight poverty” (UNDP 2003).

The problem, however, very often is not the lack of knowledge or of access to knowledge, but sociological. There is a lack of interest at the level of the local policy makers and local authorities. They do not ask for engineering or scientific advice because they are not used to it. It is simply not part of the process. There is an unwillingness of changing wrong habits or deficient techniques by sheer conservatism, religious rules or simply ignorance ... It is bad not to know what you do not know... Change is always difficult (not only in developing countries!). Change management is urgently needed.

“If the development community continues to ignore the explosion of technological innovation in food, medicine and information, it risks marginalizing itself and denying developing countries opportunities that, if harnessed effectively, could transform the lives of poor people and offer breakthrough development opportunities to poor countries” (UNDP 2001).

There might be a lot of scientific developments and research going on in the North which may be **potentially useful** also in the South and provide answers to questions that have not been asked yet, or offer tools that lead to innovative applications. Only, the researchers in their northern labs do not realize that. They do get a bonus for making their innovative findings industrially exploitable (this is the main issue of the EU policy today through the EIT (European Institute of Innovation & Technology), with its KIC’s (Knowledge and Innovation Communities)) but they do not get a bonus for finding applications in a development context. In 2005, the “Vlaamse Raad voor Wetenschapsbeleid” (VRWB)

has carried out a review of “Science sharing” in Flanders (TEMMERMAN *et al.* 2005). The result was that it would be an enormous effort to find and list all potentially useful research, but a random sample of 1,000 research projects and 60 research groups showed an unexpected large number of research projects relevant for development, either directly or indirectly, and in or without cooperation with a research group in the South. One of the recommendations of the VRWB study was that mentioning applicability of the proposed research in the South should be an advantage when applying for funding *e.g.* by the Belgian Science Foundation (FWO and FNRS, resp. in Flanders and the French speaking Community).

On the other hand, there is little research on **specific issues** which are not relevant for northern countries, *e.g.* malaria. The pharmaceutical industry worldwide provides 93 % of the resources for health research, but is not interested in research that does not lead to a product that can yield benefits. Therefore, typical issues for the developing countries do not figure on the (international) research agenda. Only ten per cent of medical and health research worldwide is spent on problems of ninety per cent of the world population.

Developing countries cannot set up the research themselves because they do not have access to appropriate funding. “Bridging the knowledge gap will require considerable investments in science and technology in the South, yet the current levels of investment are on average less than 0.5 % of the Gross Domestic Product (GDP), compared with 4 to 5 % in the North. Because the former lack the resources to invest in science and technology, the North can play a vital role in building and strengthening such capacities within the framework of North-South research partnerships” (RETOUT 1998).

4. How to Measure Quality

Good research projects in the North or in the South should result in publications in international scientific journals. Researchers in the South manage to do that more and more, often in collaboration and with the help of a partner from the North because researchers in the South do not have the tradition of publishing in international journals. They even do not have access to the (increasingly expensive) international journals! Researchers from the North working with a partner in the South can have their work rewarded by good publications. Since the half-life time of development research is often long, they will probably not be awarded by high-impact factors!

But, as for our researchers, publications from the South in international journals should show the quality of the research, but certainly not the quantity, nor, more importantly, its impact. To have impact on society in the South, one should not be cited from international journals, but one should be read or heard by those who could possibly use the knowledge and apply it. As mentioned before: this should be the very reason why we publish! Researchers from the North working

on subjects useful for the South, or researchers from the South should therefore find appropriate communication channels. The Academy wonders how to measure the impact on society, including, of course, the scientific society. Some time ago, the Academy launched the idea of a bibliometrical project to find relevant research. The result was: it is hardly feasible.

The discussion today will be on how to measure “impact” of research work. In doing so, one should remind that “numbers are not inherently superior to sound judgment” (*Science Daily* 2008).

5. Valuation of Development Research

“Evaluation” of development research ideally also should be used for the “valuation” of development research for our own researchers who do research relevant for the South or who cooperate with institutions in the South.

Colleagues who are active in developing countries often complain that their work overseas is not enough appreciated when it comes to nomination for tenure positions or promotion. In particular young academics are hard to motivate for work in a development context because they prefer to focus on what really matters for their academic career, *i.e.* A1 journal publications! At least that is what they think. A1 publications measure only the quality as a scientific researcher, but many other qualities and skills make a good professor and a successful academic.

I am personally convinced that involvement in development research not only can produce good research, but offers to the actors plenty of opportunities: reconsider one’s research domain in a different context, look at it from a different angle; define precisely the research/project goals, the means and ways to reach them (*e.g.* log-frame matrix) and define indicators of success; work in a complex atypical environment and a complex organization; be confronted with different views; get in contact with a different culture; develop leadership. In brief: develop skills that will be of use later when lecturing, designing innovative research projects, applying for research funding back home, or leading a research team.

Anyhow, it is clear that development research, in order to be sustainable, should **also** be beneficial to the partner from the North. If not, bright young colleagues will not engage in development research. The benefit however can be of quite different nature: access to data, to information, availability of lab or field-work facilities, labour force for experimental work, good master or doctoral students; opportunities for the students from our universities to spend a training period abroad to get a multicultural experience or to do experimental work for the master thesis, etc.

When evaluating individual researchers for promotion, one basically faces the same problems as when evaluating a research group for the allocation of research grants or project money or for the evaluation of universities for rankings!

Whereas up to now it very often comes down to one figure: the number of publications or the rank. It becomes increasingly clear that one has to switch to a multidimensional evaluation system (DG EAC 2008). For a university it could be performance in education and research, innovation, community outreach and internationalization; for an individual researcher it should be research output, regional and international prestige shown by the number of invited lectures or participation in foreign projects, invitations for doctoral committees, reviews, impact on society, collaboration with industry, international dimension. Besides, just as it is the case for university rankings or accreditation, the performance of an individual should be measured against his own "mission statement". If work in a development context is part of it, it should be evaluated and properly acknowledged.

The Task Force has identified four basic questions and expects today's meeting to provide the answers to:

How do we define development research?

What is good development research?

How can we recognize a good researcher potentially contributing to development? Who are the researchers who deserve to be supported?

What should we do so that countries in the South themselves produce the best possible research useful for their development?

You will deliberate over these questions during the day but remember that, although context may be different and relative proportions may differ, the problems that academics encounter are basically the same in the North and in the South. It is about quantity and quality, impact of research work on society and dissemination of results and valuation of research efforts for the individual researcher and his personal development.

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Evaluation of Development Research: Difficulties and Questions

by

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KEYWORDS. — Development; Development Research; Evaluation.

SUMMARY. — There is a consensus that evaluating development research is not an easy task. In addition to the difficulties of evaluating scientific research in general, evaluation of development research suffers from specific limitations, such as the need to assess relevance to development, and the disagreements about the definition of development research. This paper attempts to offer an overview of the problems and their causes.

A broad array of persons need evaluation of development research: (i) the researchers themselves, (ii) persons who award degrees or prizes, or who appoint or promote researchers, (iii) funding agencies, (iv) development organizations (governmental or NGOs), etc. Evaluation may be used for strengthening institutions, for accountability towards sponsors and/or public opinion, for disseminating knowledge, etc. There is thus a wide variety of situations, stakeholders, objectives to be met, etc. The main point here is that such a diversity implies flexibility in the design and choice of the most appropriate evaluation tools and criteria — in each situation and for each purpose.

Conditions for a “good” (meaningful) evaluation should include clear objectives, comprehensiveness, due consideration of the specificity of each discipline, transparency of criteria and procedures, independence of the evaluator, etc. Experience indeed shows that too many evaluations do not meet all these conditions.

Additional dimensions of evaluation of development research are: scientific quality and relevance, valorization, performance, innovation, etc.

One comes to the conclusion that guidelines are required to assist persons in charge of evaluation of development research. Such guidelines should not take the shape of a handbook, and should leave way for adaptations to fit local needs and conditions. They should be short and concise. The Academy, hopefully in collaboration with other interested agencies, may endeavour to write such guidelines and widely disseminate them.

1. Introduction

The purpose of this paper is to present an overview of the problems of evaluating development research and of the causes of such problems. A few think

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paths for finding answers to such problems will follow. From the contributions of the guest speakers and the closing round table, solutions to these problems are expected to emerge.

The starting point of this paper is a basic assumption and three observations, that most participants certainly share:

- The **basic assumption** is that our major interest is to help researchers in the South to do better research and receive due recognition for it.
- The **three observations** are:
 - Our present tools for evaluating scientific research in general are unsatisfactory;
 - Evaluation of development research meets additional difficulties;
 - Researchers in the South, in that respect, have a serious disadvantage in comparison with researchers in the North.

1.1. INADEQUACY OF OUR TOOLS FOR EVALUATING SCIENTIFIC RESEARCH IN GENERAL

This is an important problem and the subject of much debate in the scientific press, in academic circles, and among funding agencies. The point is not discussed here since it is considered in the following papers.

1.2. WHEN DEVELOPMENT RESEARCH IS CONCERNED, EVALUATION BECOMES EVEN MORE DIFFICULT

And this, essentially, for two reasons. In the first place, in addition to evaluating scientific quality, one needs to evaluate also the relevance to development. In the second place, the disagreements about the definition of development research trouble the discussion. Even within the Academy there is no consensus on the best way to define the central theme of this meeting. The French have the IRD (*Institut de Recherche pour le Développement*) in Montpellier and they widely use the term “recherche au service du développement”. The English have the IDS (*Institute of Development Studies*) in Brighton. A term commonly used by our colleagues in the Flemish Community is “ontwikkelingsrelevant onderzoek”. The *Belgian Development Cooperation Prize* uses a more elaborate, yet much better focused concept, namely: “research that contributes strongly to knowledge that could benefit development in the South”.

Such definitions — it should be pointed out — do not necessarily include — but may include — scientific research conducted either in the South or in the North, but which does not have development as objective, at least in the short and medium term.

1.3. RESEARCHERS IN THE SOUTH ARE AT A DISADVANTAGE

Researchers in the South are at a disadvantage with respect to researchers in the North. I have covered this point in a presentation to the Academy on the occasion of its 75th anniversary (BEGHIN 2004).

Their problems are basically:

- Less access to scientific publications, congresses, networks, etc.;
- Reduced independence in choosing research topics;
- Greater difficulties in getting articles accepted in “mainstream journals”;
- Less recognition, and therefore less access to funding sources;
- Isolation.

2. Who needs to evaluate Research? What for?

2.1. WHO NEEDS TO EVALUATE RESEARCH?

People who have a stake, an interest in good development research and/or who need to make decisions about research or researchers in this field. Such “stakeholders” can be:

- Researchers themselves, and their superiors;
- Universities and institutions delivering degrees, and appointing or promoting researchers;
- Organizations and foundations funding research;
- Editors and reviewers of scientific journals;
- Members of juries of prizes or awards;
- International courses dealing with development;
- Potential users of the results of such research: governments, NGO’s, bilateral and international agencies, etc.;
- Public opinion, the society at large.

2.2. WHAT FOR? THE OBJECTIVES OF EVALUATION

The “stakeholders” can thus be various people with diverse motivations. The objectives of evaluation of development research can equally be diverse, and a clear and explicit choice has to be made for each situation. The most frequent of these objectives are:

- Checking the **relevance** for development of a given research;
- Assessing and contributing to maintain or to increase the **scientific quality** of research, often including its valorization;
- **Allocating resources**: providing funding or recruiting researchers;
- **Strengthening of institutions**;

- **Insuring accountability** towards funding sources, authorities, but also towards the public;
- **Evaluating researchers** (individuals or research teams);
- **Disseminating knowledge** about development and its problems.

3. The Conditions for a Good Evaluation of Development Research

The conditions under which a meaningful and satisfactory evaluation can be conducted are the same as in any other evaluation of research – yet with different emphasis on certain aspects:

- The objectives of the evaluation must be clear. Why and what for is this evaluation conducted? For whom, and who will be using the results? These objectives should be explicit from the beginning.
- **Comprehensiveness**: all relevant elements of the context need to be identified and, when necessary, taken into consideration: place, opportunities, resources, etc. Also, evaluation should be taken as a whole, and not just as a sum of criteria.
- Separate disciplines should be approached differently: for example, social sciences vs natural and medical sciences vs technical sciences. Objectives and tools of evaluation may be very different.
- Evaluation should be competent: criteria, methods and procedures should be well established, clearly spelled out, and based on generally accepted guidelines.
- Transparency of criteria and procedures should be made explicit from the start.
- Independence.

These remarks may sound redundant. Yet, too many evaluation exercises and methods do not respect, in practice, all these rather obvious and simple recommendations.

4. What do We evaluate?

The Various Dimensions of Evaluation of Development Research

We must make a distinction between the **dimensions** of evaluation and the **criteria** used to express such dimensions. Criteria vary widely according to the circumstances and have to be selected on the basis of each situation and need. In addition, a certain number of criteria can be used to reflect different dimensions.

Four rather classical dimensions are considered here (but there can be more):

- Scientific quality;
- Relevance for development;

- Valorization;
- Performance.

4.1. SCIENTIFIC QUALITY

This obviously comes in the first place. Criteria and procedures are the same as those used for the evaluation of research in general: bibliometric indices, peer reviews, panels, etc. Yet, how to use such tools in the case of development research is one of the central issues of this meeting.

4.2. RELEVANCE OF THE RESEARCH

Assessing the relevance to development of a given research project is not easy. Basically, research is relevant to the extent it answers — or has the potential to answer — a development problem. Yet a broad number of criteria can be used. Their identification and selection will depend upon the concept of development one has in mind, and on quite a few other considerations. As this topic is discussed in other papers of this volume, it is not considered here. Yet we would like to allude briefly to a connected question: who assesses relevance?

Isabelle STENGERS in a recent book (2009) points to the potential dangers of research sponsored by private companies — that might have a particular stake in it (such as for example the pharmaceutical industry or agribusiness) — or by certain state agencies that might have ideological biases (such as, for example, anti-environmentalists). Who is in charge of evaluation may therefore be an issue, particularly in the case of natural and technological sciences.

4.3. VALORIZATION

It is maybe a less fundamental dimension than **scientific quality** or **relevance for development**, but it needs to be considered seriously. Actually, the impact of development research is seldom measurable, at least in the short or medium term. Efforts towards dissemination of results and towards their effective application are therefore to be taken into account in evaluation. Valorization in our case thus becomes an important, although too often neglected, dimension.

Aspects to be considered in assessing valorization may include **outputs** such as:

- Publication of scientific articles in peer reviewed journals;
- Other publications, including chapters in books;
- Presentations in congresses;
- Production of guides, handbooks, manuals, educational material, etc.;
- More generally, the dissemination of results to all stakeholders in development;

- Advocacy;
- In special cases: proposing solutions or providing suggestions pointing to possible solutions.

The dissemination of the research results to all stakeholders, in a given situation, is a whole issue in itself. On the one hand researchers in the South tend to publish comparatively little, and on the other hand there is a lack of good indicators for measuring the exchanges of scientific knowledge.

Valorization can also be expressed in terms of **outcomes**, such as:

- Effective use of research results in development programmes or in policy formulation: both their actual application and the efforts towards application. In the particular case of technical sciences: patents, start-ups, etc.;
- Strengthening of research capacity in the South;
- Increased autonomy of researchers and research teams;
- Degree of success in attracting resources, financial and human.

4.4. PERFORMANCE

- Performance is essentially expressed as a function of **productivity** and **quality**;
- It is a dimension of evaluation that comes well behind scientific quality and relevance;
- It is used less in evaluation of research “per se” than in the evaluation of researchers (individuals, research teams);
- It can also be used in the ranking of departments within a given discipline.

Criteria used to express valorization and to assess performance may widely overlap. Usage will determine the interpretation of such criteria.

This leads to opening a parenthesis concerning the differences between evaluating individual researchers and research teams: here also criteria will be partly different. When a team is being evaluated, one would consider:

- The same criteria as for evaluating an individual researcher;
- Additional criteria applicable to the team or the institution, such as:
 - Size;
 - Degree of integration of the team;
 - Leadership;
 - Management;
 - Efforts towards the strengthening of research capacity;
 - Concern for valorization;
 - Outside image of the research team.

5. Final Considerations: a Call for Guidelines for Evaluation of Development Research

5.1. THE NEED FOR GUIDELINES

As we have seen, substantial differences of both criteria and methods exist between disciplines or groups of disciplines, between users of evaluation, or according to the objectives assigned to any specific evaluation. There is no universal instrument for all situations — actually there cannot be such an instrument. Persons in charge of evaluation will have to establish their own criteria and procedures, and elaborate themselves their own evaluation tools: grid, questionnaire, list of instructions, etc.

Yet it is possible to enounce general and broadly acceptable rules and principles, which then would possibly materialize as a set of general guidelines. The Academy has accepted its responsibility in this matter, reflecting its independent and multidisciplinary way of operating.

5.2. NATURE AND CHARACTERISTICS OF SUCH GUIDELINES

The guidelines should be a short and well-structured document made widely available by the Academy. They would be “guidelines” *sensu stricto*: precise yet not imperative. They would provide their users with general principles to be respected — or at least to be taken into consideration. They should not be a handbook for evaluation. The text should be concise and short, allow for broad adaptations; it should not be restrictive. Shortness will in addition favour their dissemination.

5.3. GUIDELINES CONTENTS

At this stage it is too early to propose a final list of contents. It seems reasonable to assume that useful and practical guidelines should contain various aspects, possibly covered in different sections such as:

- A general section, in which the guidelines would be presented: justification, nature and characteristics, potential use.
- A section on specific technical points. For example:
 - The objectives of evaluation.
 - A consideration of the specificity of disciplines or groups of disciplines. The three broad areas of interest of the Academy could be a starting point: the human and social sciences, the natural and medical sciences, and the engineering and technical sciences.
 - The pros and cons of a variety of criteria and procedures.
 - The main conditions for a meaningful evaluation.

— A final section on how to build an evaluation tool specific for a given place and use. In this section the guidelines should emphasize the needs and expectations of researchers in the South.

5.4. WRITING AND DISSEMINATION OF THE GUIDELINES

While they are presented here as a prime responsibility of the Academy, it would be highly desirable that other interested institutions — particularly those that already use “ad hoc” evaluation tools for application to development research — would share their experience and ideas with the Academy.

It may also be suggested that after a prudent period — of for example four years — the effective use and the usefulness of the guidelines be assessed jointly.

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The Problem of Bibliometry. Reflections on its Use for evaluating Research in the South

by

Georges STOOPS*

KEYWORDS. — Bibliometry; Science Citation Index; Research Evaluation.

SUMMARY. — Evaluation of researchers, institutes or projects is commonly based on a bibliometric analysis, especially using the Science Citation Index. The use of this methodology is strongly criticized in literature. For evaluation of research in the South, the disadvantages get an extra dimension. There is not only a risk for underestimation of the quality of researchers and institutes, especially compared to the North, but in addition local development is hindered by the fact that researchers are practically obliged to focus on topics less relevant for development, and stakeholders and decision makers have no access to the necessary information. Moreover, a degradation of the local publishing potential is most probable.

1. Introduction

In order to guarantee quality of research and the best use of budgets, decision makers need tools to evaluate research, scientists and scientific institutions in an objective way. To compare research in an institutional, national or international context, a quantification of quality and efficiency is needed, hence simple numbers are required. The most common method consists of measuring the research output, rather than the research as such, and the most popular way to do that is by considering the number and quality of publications realized by a person or institute. In this way, however, only part of the output is considered. Moreover, the social impact is not taken into consideration.

To allow comparing on an international level, criteria for bibliometric research have to be uniform. In most cases use is made of the existing Science Citation Index (SCI) or of the Social Sciences Index (SSI). These are instruments created in 1960 by the Institute for Scientific Information (ISI) to evaluate and compare

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the impact of, mostly commercial, journals. Its use to evaluate research is therefore not in agreement with its original aim and is restricted to natural and applied sciences, and medicine. Using SCI to evaluate a researcher could be compared with evaluating a composer without ever listening to his music.

This contribution is not a research paper based on an exhaustive literature review, but rather a series of thoughts based on personal reflections, discussions with members of the Royal Academy for Overseas Sciences, and on a small survey and discussions with colleagues and trainees of developing countries (mainly geologists and soil scientists). The questionnaire related to that survey can be consulted on <http://www.plr.ugent.be/questionnaires.html>. About thirty scientists of different developing countries took part.

2. The Science Citation Index (SCI)

The SCI (and also the SSI) gives information on the quality of journals (impact factor, half-life time of citations) and the number of citations per paper. Since several years it can be consulted online. Its concept, however, is subject to criticisms, regularly discussed in scientific journals. Some of the most important criticisms are summarized below, but for more details the reader is referred to the extensive bibliography on this subject.

The selection of journals analysed in the SCI is biased by the fact that criteria for inclusion are not purely scientific, but also administrative, linguistic (almost only Anglo-Saxon), commercial and even political. Hence, years of important research in China, Russia and South America, for instance, are completely neglected. Other important scientific publications, such as books, proceedings and maps, are not taken into account. Moreover, the selection procedure is not at all transparent.

In this context it is an instructive exercise to compare the numbers of citations found for an author in the SCI with, for instance, those appearing on the Google Scholar website or in Elsevier's Scopus. It clearly appears that some papers, which are not even mentioned in the SCI survey, get an important number of citations in the other system, showing the risk of underestimating research capacity by using only the SCI, and the imperfectness of the latter for this aim.

A result of the uncontrolled use of the SCI for evaluating research is a visible change in publishing policy. Researchers are forced to adapt their research to publication possibilities, rather than to the needs in the scientific and industrial world.

Different research fields often give very different response to the SCI parameters. For instance, the highest impact for some fields (*e.g.* geology, plant taxonomy) will reach with difficulty the lowest one in other fields (*e.g.* biochemistry). Whereas for disciplines such as biochemistry, microbiology or polyester chemistry the half-life time is short, this is not the case for life sciences or civil engin-

eering, where half-life can be several years, and citations still commonly happen after tens of years. A similar trend is observed for the number of citations: few for instance in earth sciences and civil engineering, many in biochemistry and some fields of medicine.

3. Using the SCI to evaluate Research in the South

Problems in using the SCI to evaluate research or researchers get an extra dimension when dealing with the South. For researchers in the South access to publish in SCI-covered journals is generally more difficult than for those in the North. Referees of international journals often require extra data (not necessarily of primary importance) that can only be obtained by using sophisticated techniques, not currently available in the South. This problem is mentioned in practically all replies to the questionnaire. In some research fields, journals (even digital ones) ask high page fees, difficult or impossible to be covered by the laboratory budgets. Moreover, cultural differences may make publishing in international journals difficult. Most researchers in the South, but for instance also in China and Russia, have not been trained in the Anglo-Saxon reporting style requested by almost all international journals. This is considered by almost all non-native speaking respondents as the most important barrier. It is not only a problem of correct language (although this might already be insuperable in some cases), but even more of style and approach. The requested compacted style is often contradictory to the own cultural tradition (which is already partially the case for instance for French, Italian or Spanish speaking scientists). One should also not forget that many of the researchers from the South originally come from a culture with oral tradition, where other rules prevail. Imposing the Anglo-Saxon style as the only valuable for all journals, testifies of little respect for the local identity.

In their comments, many scientists of the South questioned express their feeling that exotic author's names and/or their affiliation to an institution in the South have already a negative influence on the chance of a paper to be accepted by an international journal.

Even when scientists from the South succeed in having papers published in SCI-covered journals, it is not obvious for them to gather the same number of citations as their American or European colleagues who, during the last decades, have built up a strong tradition in networking (*e.g.* European sponsored projects such as COST-actions, ERASMUS-projects), where personal contacts spontaneously result in more mutual citations. Some networks even intentionally bias the system by encouraging artificial mutual citations.

It is also a fact that research useful for development, and therefore supported by national and international sponsoring, mostly deals with local, more practical problems not yielding the type of data needed for publication in international

journals. Nevertheless, the SCI is sometimes applied for their evaluation. Several scientists complain to be sandwiched between two duties: the government requiring and funding research on local problems, and the university authorities expecting international publications. An Indian professor states “This has created a paradox, while the local funding agencies would like more research on local issues, scientists tend to take up the topics suitable for international science”.

4. Consequences of the Application of the SCI to Evaluate Research in the South

From the discussion above, one can deduce that the use of the SCI to evaluate scientists or institutions in the South can have a negative influence on our opinion on research in these countries. Compared to research in the North, that in the South risks to be underestimated, because fewer papers are accepted in international journals, and papers generate less citations, for reasons not directly related to quality of scientific content.

In addition, there is an indirect negative influence on research as such in the South. Information important for development remains unpublished when not suitable for international journals, because researchers are obliged to give priority to spending their energy and time to publish in SCI-covered journals. For the same reason, local journals risk degradation for lack of good papers and interest. This can be compared with the situation in Europe, where a lot of local scientific journals (mainly published by learned societies) disappeared during the last decades, often leaving a vacancy. In Anglo-Saxon countries, especially in the US, this is less the case as their journals are more easily considered as “international”, because of the language, compared for instance to France, Germany or Russia.

Up to now the above-mentioned problem is still limited because of the fact that in many developing countries the total number of papers is considered more important than their ranking. Nevertheless, this gradually changes with a higher degree of development (*e.g.* China, India). In most of these countries a minimum of two international (not necessarily SCI-mentioned) publications is required for entering the staff of a university.

If research on local problems of the South gets published in SCI-covered journals, it often risks not reaching the target audience of local stakeholders. Researchers in the South often have difficulties to get access to international journals, and this is still much more the case for decision makers and extension workers, who have to use or to transmit scientific results. As such, part of the local research is lost for development. Several Chinese researchers pointed out that only studies published in their native language have local impact.

As books are not covered by the SCI, teaching staffs are less motivated to prepare good local manuals, especially important for locally bound sciences, such as

agriculture, botany, geology, medicine and veterinary sciences. Primary maps (*e.g.* botanical, geological, pedological) are not only important for scientists and teachers, but also for decision makers. The big efforts, both physically and intellectually, to prepare them, are not rewarded when SCI is used for evaluation.

Also for research in the North on the South, evaluation by SCI criteria is counterproductive for two major reasons: (*i*) research on many themes important for development is not stimulated, but rather hindered, because not suitable for publication in international journals, and (*ii*) research results important for development remain unpublished for the same reason.

5. Discussion

The main problem with the way bibliometry is used by most decision makers to evaluate individual researchers, research teams or institutions, is the fact that all journals not covered by SCI are considered as second hand or, worse, as rubbish or not existing. This is far away from the real situation. Many local journals, for instance in China, Russia, Latin America (*e.g.* Argentina, Brazil, Mexico), India and several European countries, have a high scientific quality, at least comparable to that of several SCI-covered journals, but are not included because of linguistic, administrative or commercial reasons. Many of these journals have an internationally composed Editorial Board and referee system. Nevertheless, publications in these journals are rejected in bibliometric evaluations based on SCI.

A manner of solving the above-mentioned problems is to come to an internationally accepted rating of scientific journals, using scientific criteria, independent of language and administrative status. Such a rating would stimulate researchers to publish in local journals of high quality, respecting their cultural values, and accessible to local stakeholders, and it would also stimulate local journals to increase their quality in order to get a better rating.

6. Conclusions

Decision makers should be aware that bibliometry measures are only one aspect of research, namely part of the purely scientific output, and can be biased by several local conditions. They should also be aware of the discrepancy existing at present, whereby natural sciences, medicine, and applied sciences are subject to severe bibliometric evaluations, whereas human sciences seem to escape this exercise.

Evaluation of researchers or institutions in the South in an international context using only SCI (or SSI) will in most cases underestimate their quality and capacity. The additional use of other systems may give a correction. The existing international systems moreover comprise a cultural discrimination of many researchers in the South.

Even for the evaluation within a national context the use of SCI is not without risk, and has important side effects: subjects important for development risk to be neglected, data important for development remain unpublished and local scientific journals degrade. It is obvious that the use of SCI by donor agencies to evaluate institutions, and especially projects, is a dangerous process. Moreover, from the point of view of development, research has no absolute value, but also cultural dimensions should be taken into account.

A possible solution would be the creation of a rating system for scientific journals by an independent, internationally recognized authority, such as the Belgian Royal Academy for Overseas Sciences, in cooperation with other institutions, taking into account in the first place the real scientific quality of the papers. It is hereby important that all international languages of the South (especially French, Portuguese and Spanish) are treated on the same level as English. A distinction between technical and scientific publications is necessary without putting one on a higher level than the other.

As a first step, a survey covering different fields of science (including medicine and applied sciences) and countries with different degrees of development needs to be organized and critically analysed in order to get a realistic overview of the problems.

Lessons learned from the Rules on Ranking of Universities [1]*

by

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KEYWORDS. — Higher Education; Evaluation; Quality.

SUMMARY. — It is well known that university assessment and ranking must serve many purposes: they respond to a demand for interpretable information on the standing of higher education institutions; they provide some of the rationale for the allocation of funds; they are also used to differentiate between different types of institutions and different programmes and disciplines.

In addition, many public managers would like to use methods based on these tools in order to “measure the quality” of higher education institutions or programmes within a particular country or region.

What are these ranking methods? Are they really useful in a process of evaluation? Should we use them for evaluating development research?

In this paper we present some specific methodologies (Ranking of the *Times Higher Education Supplement*, the Shanghai Academic Ranking of World Universities (ARWU), the CHE Research Ranking) trying to reply to the above-mentioned questions. We also examine a set of principles of quality and good practice in ranking proposed by an International Ranking Expert Group to allow some discussion on these questions.

1. Introduction

Rankings appear in many areas. Competitive sports (football, basketball, ...), cinema (Oscar Academy Awards, ...), music competitions (Queen Elisabeth competition, ...), gastronomic guides (Michelin, Delta, ...) are some well-known examples. Sometimes, rankings are put together just for fun. However, many of them are taken very seriously.

In the field of higher education, ranking is closely linked to the topic of evaluation which is traditionally carried out through procedures of peer review of scientific publications. However, academic evaluations are increasingly being undertaken in addition to this traditional procedure.

* The numbers in brackets [] refer to the notes, p. 34.

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Two types of rankings are regularly quoted in the media. The first one is that of the Shanghai Jiao Tong University, called the Shanghai Ranking; the second one is the yearly ranking published in the *Times Higher Education Supplement*, called the Times Ranking.

But let us begin by considering the basic question: “What is ranking?”.

Ranking is “positioning comparable objects on an ordinal scale based on a (non strict) weak order relation among (statistical) functions of, or a combination of functions of measures or scores associated with those objects” (GLANZEL & DEBACKERE 2009). These functions, which are usually based on variables for evaluative purposes, are called indicators. Different indicators X_k representing different aspects of quality form the components of a *composite indicator* Y , the basis of the ranking. This composite indicator is usually a linear combination of the X_k s, that is,

$$Y = \sum_k \lambda_k X_k$$

where λ_k ($k = 1, 2, \dots, p$) are p pre-defined weights and, without loss of generality, verify the equality $\sum \lambda_k = 1$ — so that Y is a weighted mean of the individual indicators X_k .

This method has been used for a long time and the most problematic issues in applying composite indicators are well known (GLANZEL & DEBACKERE 2009): possible interdependence of components, altering weights resulting in a different ranking, potential obscure and irreproducible results, ignored random errors of statistical functions, reduction of a multidimensional space into linearity. Moreover, the interpretation of a ranking is linked to the criteria which are used.

Let us now consider two examples of rankings. We will complete this presentation by an interesting third method.

1.1. THE SHANGHAI RANKING

The composite indicator currently aggregates six criteria:

- The first criterion used to measure the quality of education of a university is the number of alumni who were awarded a Nobel Prize (physics, chemistry, medicine, economics) or a Fields Medal (mathematics). An alumni is defined as a person who holds at least one degree from the university being assessed; such a person counts as one unit if the degree was obtained after 1990, as 0.9 if it was obtained between 1980 and 1990, etc.; it counts as 0.1 if the degree was obtained between 1900 and 1910.
- Two criteria measure the quality of the teaching staff of the university: the number of Nobel Prizes and Fields Medals awarded to the academic staff teaching at the university under review — here too, the weights decrease with seniority and a complex fraction system weights the results if the laureate was active in several universities simultaneously and/or if several laureates shared

the same prize — and the number of teachers-researchers who are among the two hundred and fifty most cited authors for a given period of time within twenty-one major subject categories.

- The fourth criterion is the number of articles from the university under review published in *Nature* and *Science* within the last five years, with a weight system for co-authored publications; this criterion is not taken into account if the university is not active in these fields and its weight is then redistributed between the other criteria.
- The fifth criterion is the number of articles from the university under review listed, for a given period, in the *Science Citation Index* and the *Social Science Citation Index* [2].
- A sixth criterion concerns the academic performance with respect to the size of the university under review: the scores for the previous criteria are summed up and divided by the number of teachers-researchers [3].

For each of these criteria the highest-ranked university is given a score of 100; the others are given a score obtained by a rule of three.

The global score of a university is a weighted sum [4] of the scores obtained for the different criteria.

The reliability of this composite indicator is a real problem which has been discussed in many conferences and publications (see e.g. VINCKE 2009).

1.2. THE TIMES RANKING

The *Times Higher Education Supplement* ranking is published by a private firm. The methodology is based upon two surveys. The first one concerns several hundreds of scientists from different countries who list the universities they consider to be the best; the second one is conducted on a number of employers. These two surveys allow extracting a first score for each university which will receive a weight of 50 % in the final indicator obtained — here also — as a weighted sum of scores for different criteria.

Four other criteria are taken into account: the impact, in terms of citations, of university researchers (with a weight of 20 %); the student/teacher ratio (with a weight of 20 %); the percentage of foreign students (with a weight of 5 %); and the percentage of foreign teachers (with a weight of 5 %).

Until 2006, the standardization to 100 of each scale followed the Shanghai method. But in 2007, the authors of this method decided to replace the normalization to the best performers by the “z-score method”. For each criterion, the empirical mean and the empirical standard deviation are computed. For each university, a standardized score is obtained by taking the difference between the score and the mean divided by the associated standard deviation [5].

Here also a number of comments can be made about the Times ranking and many questions have not received satisfactory replies. As the first criterion is based on recommendations formulated by “experts”, this method seems to be

closer to the well-known “peer review” than the Shanghai ranking. Unfortunately it is not really the case.

As this meeting also concerns the bibliometric approach, it is significant to note that in 2005, Anthony Van Raan of the University of Leiden calculated that the correlation between the scientists’ replies to the questions of the *Times* and a bibliometric analysis was equivalent to... zero (VAN RAAN 2006)!

1.3. THE CHE APPROACH

The Centre for Higher Education Development (CHE) was founded in 1994 by the German Rectors’ Conference and the Bertelsmann Foundation. A CHE University Ranking has been published since 1999 and focuses on information for prospective students who want to choose a university. It includes indicators on teaching and learning, resources and facilities, on research activities as well as information that is important for this target group.

But research is not at the centre of this ranking. This is why the CHE decided to set up a research ranking devoted to an academic target group. It includes indicators on publications, citations, number of PhDs, research grants and patents and also some bivariate and correlation analysis (BERGHOFF & FEDERKEIL 2009) [6].

Three big differences can be underlined between the CHE rankings and the previous ones. At the level of ranking, programmes and fields are considered instead of whole institutions. On the other hand, the method takes into account a multidimensional ranking instead of a composite overall score. Finally for each indicator, the CHE ranking classifies universities into only three groups — a top, a middle and a bottom group — instead of providing a league table.

For all these reasons, the CHE method seems better than the two previous ones.

2. The International Ranking Expert Group

We have seen that during recent years, a number of widely covered world-wide rankings of universities appeared. If correctly understood and interpreted, they could contribute to national accountabilities and quality assurance processes. Given this trend, it is important that the rankings produced hold themselves accountable for quality in their own data collection, methodology and dissemination.

In view of the above, the International Ranking Expert Group (IREG) was founded in 2004 by the UNESCO European Centre for Higher Education (UNESCO-CEPES) in Bucharest and the Institute for Higher Education Policy in Washington, DC. In 2006, IREG’s second meeting in Berlin proposed a set of principles of quality and good practice in HEI (Higher Education Institutions) rankings. Let us detail these recommendations [7].

2.1. RECOMMENDATIONS ABOUT PURPOSES AND GOALS

- *Be one of a number of diverse approaches to the assessment of higher education inputs, processes and outputs.* Ranking can provide comparative information and improved understanding of higher education, but should not be the main method of assessing what high education is and does. Rankings provide a market-based perspective that can complement the work of government, accrediting authorities and independent review agencies.
- *Be clear about their purpose and their target groups.* Rankings have to be designed with due regard to their purpose. Indicators designed to meet a particular objective or to inform one target group may not be adequate for different purposes or target groups.
- *Recognize the diversity of institutions and take the different missions and goals of institutions into account.* Quality measures for research-oriented institutions, for example, are quite different from those that are appropriate for institutions that provide broad access to underserved communities. Institutions that are being ranked and the experts that inform the ranking process should be consulted often.
- *Provide clarity about the range of information sources for rankings and the messages each source generates.* The relevance of ranking results depends on the audiences receiving the information and the sources of that information (such as databases, students, professors, employers). Good practice would be to combine the different perspectives provided by those sources in order to get a more complete view of each higher education institution included in the ranking.
- *Specify the linguistic, cultural, economic and historical contexts of the educational systems being ranked.* International rankings in particular should be aware of possible biases and be precise about their objective. Not all nations or systems share the same values and beliefs about what constitutes “quality” in tertiary institutions, and ranking systems should not be devised to force such comparisons.

2.2. RECOMMENDATIONS ABOUT DESIGN AND WEIGHING OF INDICATORS

- *Be transparent regarding the methodology used for creating the rankings.* The choice of methods used to prepare rankings should be clear and unambiguous. This transparency should include the calculation of indicators as well as the origin of data.
- *Choose indicators according to their relevance and validity.* The choice of data should be grounded in recognition of the ability of each measure to represent quality and academic and institutional strengths, and not availability of data. Be clear about why measures were included and what they are meant to represent.

- *Measure outcomes in preference to inputs whenever possible.* Data on inputs are relevant as they reflect the general condition of a given establishment and are more frequently available. Measures of outcomes provide a more accurate assessment of the standing and/or quality of a given institution or programme, and compilers of rankings should ensure that an appropriate balance is achieved.
- *Make the weights assigned to different indicators (if used) prominent and limit changes to them.* Changes in weights make it difficult for consumers to discern whether an institution's or programme's status changed in the rankings due to an inherent difference or due to a methodological change.

2.3. RECOMMENDATIONS ABOUT COLLECTION AND PROCESSING OF DATA

- *Pay due attention to ethical standards and the good practice recommendations articulated in these Principles.* In order to assure the credibility of each ranking, those responsible for collecting and using data and undertaking on-site visits should be as objective and impartial as possible.
- *Use audited and verifiable data whenever possible.* Such data have several advantages, including the fact that they have been accepted by institutions and that they are comparable and compatible across institutions.
- *Include data that are collected with proper procedures for scientific data collection.* Data collected from an unrepresentative or skewed subset of students, faculty, or other parties may not accurately represent an institution or programme and should be excluded.
- *Apply measures of quality assurance to ranking processes themselves.* These processes should take note of the expertise that is being applied to evaluate institutions and use this knowledge to evaluate the ranking itself. Rankings should be learning systems continuously utilizing this expertise to develop methodology.
- *Apply organizational measures that enhance the credibility of rankings.* These measures could include advisory or even supervisory bodies, preferably with some international participation.

2.4. RECOMMENDATIONS ABOUT PRESENTATION OF RANKING RESULTS

- *Provide consumers with a clear understanding of all of the factors used to develop a ranking, and offer them a choice in how rankings are displayed.* This way, the users of rankings would have a better understanding of the indicators that are used to rank institutions or programmes. In addition, they should have some opportunity to make their own decisions about how these indicators should be weighted.
- *Be compiled in a way that eliminates or reduces errors in original data, and be organized and published in a way that errors and faults can be corrected.* Institutions and the public should be informed about errors that have occurred.

3. Comments

Taking into account these recommendations, one cannot ignore the fact that most of the current ranking proposals have serious flaws: bias toward “big” universities, favouring institutions from the Anglo-Saxon world, favouring universities which excel in exact and biomedical sciences (rather than in human and social sciences), being too strongly influenced by the values of the weights, ... Moreover, ranking should take into account the diversity of tasks of universities as well as diversities across disciplines (DEHON *et al.* 2009b).

It is not surprising that most university authorities claim that rankings published by the media are disputable. Everybody is convinced that these rankings are not representative of “the true” quality of universities. But it is a fact that all universities integrate ranking criteria in their governances nowadays.

Recent initiatives allow hoping for some improvement in the methodology. In 2006, for instance, the Programme for Institutional Management in Higher Education (IMHE) of the Organization for Economic Co-operation and Development (OECD) and the International Association of Universities (IAU) proposed to carry out a study of the positive and negative effects of rankings on strategic and administrative decision making by universities (HAZELKORN 2008). The OECD has now started an international assessment programme to evaluate the outcomes of higher education policies (Assessment of Higher Education Learning Outcomes: AHELO). The aim of this study is to verify whether it is possible to test university performance levels using criteria which are independent of linguistic, cultural and geographic factors.

It is clear that the flaws of the current ranking methods do not allow to use them for evaluating development research. But here also it should be useful to take the different criteria into account qualitatively. The proposals of the German CHE and the scores obtained on each criterion — even if the values of these scores do not have an absolute meaning — may allow seeing the real level of a university, a faculty, a department and even a research centre.

The recommendations proposed by the International Ranking Expert Group can certainly help to improve the quality of a research activity, of an education project or of a service to the society.

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NOTES

- [1] This talk results from an international conference organized by Catherine Dehon, Mathias Dewatripont, Jean-Jacques Dreesbeke, Dirk Jacobs and Catherine

Vermandele in December 2007 at the Université libre de Bruxelles on the topic of *Ranking and Research Assessment in Higher Education* (DEHON *et al.* 2009a). The conference was organized within the framework of a European PhD programme in Socio-Economic and Statistical Studies regrouping a set of European universities.

- [2] In the first version of the Shanghai ranking, only these five criteria were taken into account (reduced to four for social science institutions).
- [3] As the authors of this ranking did not have data available for all the universities, this additional criterion was not taken into account for all universities.
- [4] A constant weight of 25 % when there are four criteria, 20 % when there are five; with six criteria, the first one and the sixth are worth 10 % each, while the other four are each worth 20 %.
- [5] The z-score indicates how far the university deviates from the mean using the standard deviation as the unit.
- [6] See also: www.che.de/downloads/Methoden_Hochschulranking_2008_API106.pdf
- [7] See www.che.de/downloads/Berlin_Principles_IREG_534.pdf

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Doing Development Research in Asia. Problems and Perspectives

by

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KEYWORDS. — Globalization; North and South; Symmetry; Solidarity; Relevance.

SUMMARY. — Because the notion of ‘relevance’ is deeply context bound, I argue that we need to broaden our understanding of development to include ‘conditions for development’. In this paper, I reflect on the well-known adage about ‘give a fish’ and ‘teach to fish’ by adding the following: ‘create the conditions for fishing, we will fish forever’. At the beginning of the 21st century, which is also an era of rapid globalization, I reflect on (a) what it means to speak of development work (b) in a continent like Asia, which has emerging industrial giants like China and India, both of whom know extremely lopsided development. Within this framework, I think about what it means to speak of developmentally relevant research. Without losing sight of the hard-won understanding of developmental work acquired over the decade, I plead that we look at development as a multi-layered process. If we do so, we can appreciate the fact that different kinds of research are relevant at different levels: what is relevant at one level does not need to be relevant at another. Thus, criteria for developmentally relevant research will have to keep these different levels separate from each other. To answer the four questions posed by the task force, I suggest that we split the global problem about ‘developmentally relevant research’ into three tractable subproblems, each of which giving a different answer at an appropriate level.

1. Introduction

When we talk about development studies, we tend to speak in terms of some kinds of social scientific research on the one hand and their possible ‘relevance’ to developmental work on the other. Not every kind of research in and about the developing world is of relevance to developmental work. Even when the study and understanding of a theme is of great importance for developmental work, not every study on that theme is of ‘relevance’ to developmental work. For instance,

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not every study on political corruption is relevant. This is not surprising: the notion of ‘relevance’ is extremely context bound. Consequently, when we speak of ‘development studies’, we need to be very clear about both the levels and the contexts to which such studies should be relevant. That is to say, we have to clearly spell out not only the contexts in which some kinds of research are developmentally relevant but also the levels at which they are relevant. This means that development itself is a multilayered process or at least that our *conception* of development should be multilayered. What does this mean?

2. An Old Adage Expanded

Consider the well-known and well-worn saying about development: “give me a fish, I will eat for a day; teach me to fish and I will eat for my life”. This statement talks about two different processes: the first process is about charity; the second is about transfer of skill and knowledge. I suggest that these two processes form the first two layers (or levels) of developmental work that are well known to all of us. Today, in the period of rapid globalization, we need to add a third layer (or level) to this process: “create the conditions for fishing, we will fish forever”. Before expanding on this line of thought, let me see whether we can speak of relevant research for the first two layers.

3. The First Level of Development Studies

For developmental work which involves charity, the kind of relevant research is obvious: *one which identifies conditions of catastrophe that cannot be addressed without outside help*. Such conditions might involve situations of war, natural disasters, massive displacement of people and the like. Or, it could also involve the spread of life-threatening diseases like AIDS or cholera. Here, developmental work might involve outright charity or address itself to remedying or strengthening local institutions to meet the perceived threat. A developmental response could be reactive or proactive: neither makes a difference to the kind of research required at this level. Maximally, one could also think of research as an autopsy: detailed analyses of what went wrong in any given situation of providing help. For instance, research into Tsunami help in Indonesia and Sri Lanka can tell us what went wrong but it cannot do more than this. Such research cannot yield us with policy suggestions for developmental work, even though it might suggest that some aspects should be taken into consideration more explicitly.

4. The Second Level of Development Studies

For developmental work that involves transfer of skill and knowledge, the situation is less clear. On the one hand, surely, for any kind of developmental work

to take place in a country from the South, there must be a need in that country for such an activity. The developmental research required in this case is clear: *to show the presence of such objective needs*. On the other hand, today, one is inclined to add the additional requirement that the need is also explicitly expressed: that is, the notion of ‘partners in development’ equates the presence of needs in any given situation with the presence of the desire (among the local population) for such a transfer. This makes the issue very cloudy: what would constitute an expression of desire? An opinion poll or a questionnaire set up to test for the presence of ‘felt needs’ or, wrongly used as an approximate synonym in this case, the presence of ‘desires’? This muddle-headed thinking cannot generate any clear policy for developmental work. It has a very wrong anthropological picture of human beings: *it confuses between needs and desires* and postulates a very faulty psychological picture that the needs of human beings somehow translate themselves into desires and motivation. Not only that. It implicitly presupposes (a) that people in a culture have some kind of consensus about what development means; (b) that they know what is required for this purpose; (c) that they merely lack the required resources (knowledge, skill and money) to bring about such a development. Under this interpretation, this second layer collapses into the first: developmental work becomes mere charity, even if the notion of ‘partners in development’ is meant precisely to prevent paternalism in developmental work. Using a different idiom, one could say that the dominant picture about development, which suggests that developmental work responds to felt or expressed needs, is just about as workable as a business model which says that market exists only for products that are in demand. Should mankind ever have followed this wisdom, we would never have progressed beyond our primitive existence: every product we need today did not exist before such products were invented and desire for these products was socially and culturally induced in us. If we use this analogy, we might as well say that induced desires become needs instead of needs expressing themselves as desires. If we accept this truth about us, developmentally relevant research should incorporate these two dimensions and exhibit them: (a) *the presence of objective needs*; (b) *identification of the mechanisms to transform such needs into desires*.

5. The Symmetry between North and South

Notice that the kind of developmental research required for these two layers can be undertaken by anyone, whether the person is in the North or in the South. This is possible only because ‘development’ concerns us all equally, whether we are in the South or in the North. Surely, this is one of the lessons that the contemporary economic crisis has taught us: globalization affects us all equally, even if there is a differential impact in different parts of the world. Both the South and the North have equal stakes in the development of the South and, as such, have

the same kind of voice in the process. As I see it, 'equality', in this context, means that we are governed by the same rules or that our roles exhibit symmetry. The symmetry is also moral and ethical in nature. People from the North have a right to demand that the South develops and to impose a moral obligation on people from the South that they develop; the people from the South have the right to develop and to impose a moral obligation on people from the North that they help in this process. This is what, I think, the notion of 'solidarity' means in the global context we all share today. *There is symmetry in the rights and obligations between the North and the South today.* This point brings me to what I want to focus on in the rest of the talk, namely the emergence of a third layer in developmental work.

6. The Need for an Asian Policy in Developmental Work

Let us first take note of the state of (most) countries on the Asian continent. On the one side of the spectrum, we have industrialized countries like Japan, Singapore, South Korea and Taiwan. On the other side, we have countries like Bangladesh, Vietnam and Pakistan. In the middle of the spectrum, we have the rest: from China to India, each at a different stage of development. From one perspective, a country like China is 'rich': today, it is lending staggering amounts of money to the most advanced country on this globe, the USA. It is making heavy investments in many parts of the world, from Africa to Latin America. From another perspective, this growth is lopsided and more than one third of its population is mired in poverty and is living below the poverty line. This staggered and uneven development characterizes a host of countries in Asia: from India through Indonesia to Malaysia. The trickle-down economic effect of industrialization is noticeable only when viewed against a picture from the sixties. However, if we look at their problems today, including social, political and cultural problems, they are every bit as mammoth as the continent itself. Furthermore, if we take into account that they are peoples coming from a non-white, non-Christian culture, clearly any developmental research has to first spell out an 'Asia Policy'. Such a policy must accommodate itself to the fact that most of Asia suffers not only from the ills of the past (massive poverty, illiteracy, etc. induced by centuries of colonization) but also from the diseases from the present (massive social disruption arising from rapid industrialization). When we look at the countries on the Asian Continent today, we must look at them neither as European Nations nor as industrialized 'modern' countries but as countries that are doing the best they can to cope with problems that are every bit as gigantic as the continent itself. We have to look at them with compassionate and understanding eyes and not with eyes either tinged green with jealousy or made yellow by prejudice. The economic and social inequity in India, for instance, is not a proof of the failure of its economic and social policies any more than its information technology and engineering

industry are proofs of its strength. India is an emerging world power in the complex combination that it is now and because of which it will pursue a road of its own for tomorrow. In other words, we need an ‘India policy’ (and a ‘China policy’) and an ‘Asian policy’ today. We cannot develop such a policy by merely ‘applying’ or modifying an existing policy for dealing with an advanced industrial country (say, the US or Japan) or a developing country (say, Malawi or Bangladesh).

7. On the Third Level in Developmental Work

It is in such a context that the third line of the adage becomes extremely relevant to us: “*create the conditions for fishing, we will fish forever*”. Developmental work in Asia, today, has to extend beyond both charity and transfer of knowledge and skill, if, indeed, we are concerned with where more than bottom third of its population finds itself in and also with what ails the rest of the population. Economic poverty characterizes these countries as much as social upheavals and cultural dislocation do. Rapid disintegration of social cohesive bonds and family life are as much problems for developmental work here as is the absence of necessities of life. If we add the fact that four nuclear powers (China, India, Pakistan and, recently, North Korea) inhabit this region in countries that are undergoing rapid and violent disintegration of social and cultural life, it is obvious that we can only ignore developing a coherent ‘Asia Policy’ at mankind’s peril.

How can we do this? Here, we see the need to add a new layer for the notion of developmental work and for encouraging relevant developmental studies. Development in Asia requires, above all, *a reproduction of the conditions of existence of these societies and cultures*. What do I mean?

8. Developmental Studies in the Era of Globalization

Every society has some conditions of existence: to name a few, they are economic, political, social, technological and cultural in nature. If it is to be a stable society, these conditions are also conditions for its stability. In any dynamic society, these conditions are reproduced internally; that is, each stable and developing society has an internal dynamic that assures that these conditions of existence are reproduced. Here we can think of two kinds of reproduction: a simple reproduction and an extended reproduction. In any simple reproduction, which merely reiterates the prevailing conditions of existence, say, for example, poverty, hunger and disease, there is no possibility for development. It is a monotonous or simple reproduction. Any development requires extended reproduction, whether the extension is positive or negative. Zimbabwe (of today) is in the grip of a neg-

ative extended reproduction, where impoverishment is both horizontally extended (where more and more people become poor) and vertically deepened (there is a continuous decrease in the necessities of life). However, the structural reasons of Zimbabwe are not present in Asia. Here, we need a horizontal extension and a vertical deepening that is positive in nature. In other words, any developmental policy in Asia will have to *ensure an extended reproduction of the conditions of existence of these societies and cultures*.

What does it mean to speak of such an extended reproduction? Here, we already see what kind of developmental research is needed: *one that identifies such conditions*. Such research is both scientific — because it provides us with understanding of human societies and cultures — and developmentally relevant — because it helps creating such conditions.

Consider the first two layers of developmental work: charity and transfer of skill and knowledge. The third layer reproduces *these two as the internal dynamic in the South itself*. That is to say, it involves institution building because it is institutions alone that can guarantee the reproduction of conditions of existence: *the North participates in either building or sustaining institutions that enable the extended reproduction of the conditions of existence of these societies and cultures*. Which are those institutions? While developmental work can focus only on *civil institutions*, no such condition applies to research: developmentally relevant research *identifies and analyses the working of institutions as they contribute towards an extended reproduction of society and culture*. In other words, development studies should analyse how institutions contribute to the third layer of developmental work.

The institutions in the North, as I see it, have an additional responsibility in this situation: *to promote this kind of research in both the North and the South*. That is to say, the North should build innovation and incubation centres that not only analyse but also stimulate autonomous extended reproduction in the South. This suggests that the North should actively build and sustain universities, research centres, academies and the like in the South.

Let me summarize: even at a gross level, we can identify three layers of developmental work. Under certain conditions, they all reduce to the first layer: charity. Each of these three layers continues to have relevance to all of us. Any relevant development study will have to be defined with respect to each of these layers. With these points in mind, we can now answer the questions that the organizers raise in very simple terms.

9. The Questions Answered

The first question: *How do we define development research?* There are at least three kinds of development research as they relate to the three layers of developmental work: (i) research which *identifies conditions of catastrophe that cannot*

be addressed without outside help; (ii) research which (a) demonstrates the presence of objective needs, (b) identifies the mechanisms of transformation of such needs into desires; (iii) research that identifies and analyses the working of institutions as they contribute to an extended reproduction of society and culture.

The second question: *What is good development research?* Good development research is research which is able to specify (a) *the conditions for an extended reproduction of societies and cultures* and/or (b) *the conditions and modes for institutional interventions for development*. For each of the three levels, the nature of good development research will amplify on these two criteria.

The third question: *How can we recognize a good researcher potentially contributing to development? Who are the researchers who deserve to be supported?* These questions are formulated in a person-dependent way. If we translate the answers to the second question on a case-by-case basis, I think we can arrive at workable decisions in a concrete way.

The fourth question: *What should we do so that countries in the South themselves produce the best possible research useful for their development?* We need to actively develop the third layer of development work and the associated research: *create and sustain institutions that strengthen the indigenous dynamic of extended reproduction*. I also think that we need to appreciate that our current notion of ‘solidarity’ implies that we accept that *both the South and the North have symmetric rights and obligations*. This implies that the North has the onus to promote developmentally relevant research of the required kind both in the South and in the North; the South has the obligation to participate in this process.

Towards Research which accelerates Development: the Viewpoint of Africa

by

François MUHASHY HABİYAREMYE*

KEYWORDS. — Africa; Human Development; Innovation; Relevance; Research Evaluation.

SUMMARY. — This viewpoint is based on research evaluation reports in Africa as well as on exchanges with scientists concerned with such research. It goes through some of the conditions that need to be met so that research becomes a real driving force for development on the continent. Relevance and innovation are confirmed to be very important criteria among those being used in evaluation. We suggest to increase the weighting of these factors and to assess it according to the degree to which the research results concretely contribute to the creation of sustainable conditions for a decent living. International support could in particular contribute to breaking the isolation of researchers through their better integration into networks, and to promoting mutual training between both scientists in the North and in the South, who do their best to solve problems in Africa.

1. Introduction

Our viewpoint in the frame of the evaluation of research for development is mainly based on the situation which prevails in Africa. Miserable livelihood, in particular in D. R. Congo, is obviously associated with excessive human drudgery, especially affecting women and children. The progress that had been made several decades earlier faded. Research must improve this state.

This is the ambition of research institutions and academic centres, such as the Kisangani University, whose emblem symbolizes its position at the battlefield for development, but achievements remain scarce and limited.

The present paper contributes to the diagnosis of the current state and includes suggestions useful for the promotion of research that can accelerate development.

2. Methods

This contribution is based on our former experience as member of the working group on the Prize of the Belgian Development Cooperation (2008) and as

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evaluator of researches subjected previously to this competition (2004-2007) organized by the Royal Museum for Central Africa at Tervuren.

Moreover, we have consulted many people in charge of scientific institutions of sub-Saharan Africa: the *Université de Kinshasa* (UNIKIN), the *Université de Kisangani* (UNIKIS), the *Université de Lubumbashi* (UNILU), the *Laboratoire d'Ecologie Appliquée* (LEA) at the National University of Benin. Among international level sources that have been consulted to support the viewpoint of Africa let us mention the *Conseil Africain et Malgache pour l'Enseignement Supérieur* (CAMES), the Consultative Group on International Agricultural Research (CGIAR), the Royal Academy for Overseas Sciences (RAOS) (2005), the Southern African Development Community/International Assessment of Agriculture Knowledge, Science and Technology for Development (IAASTD) (2008) and the United Nations Development Programme (UNDP) (2006).

The structure of the present paper follows readily the guidelines proposed by the symposium's organizers. Questions and respective answers which constitute the body of this article are presented below.

3. A Point of View based on the African Situation

3.1. HOW DO WE DEFINE DEVELOPMENT RESEARCH?

We define it as research that accelerates development. This means: it contributes to alleviating poverty, strives for a fair and equitable standard of living, boosts the advancement in terms of human development, and arms local community and civil society in order to face global change and to respond to globalization.

The details allowing to understand the definition above refer to the Human Development Index (HDI) established for each of the one hundred and seventy-seven Member States of the United Nations (UNDP 2008). This report indicates that none of the African populations have itself up to the level of high human development. Moreover, twenty-two sub-Saharan countries had the lowest HDI, and they are the exclusive components of the less developed group. Their low standard of living reflects great poverty. These considerations lead us to propose the following criteria to assess research that is relevant to development.

3.1.1. It contributes to alleviating Poverty

This is not evaluated only on the basis of the increase of the average income per capita. In fact, the Gross Domestic Product (GDP) is too generalizing an indicator, so that it is unable to shed light on the poverty of the most important part of the population of several developing countries, where inequalities prevail among citizens. A complementary comment is provided in the next heading.

3.1.2. It strives for a Fair and Equitable High Standard of Living

In other words, it brings balance to the standards of living across the different segments of society (equity). Arguments to clarify this idea are also drawn from the UNDP report mentioned above. The Gini Coefficient (GC), one of the tools measuring inequalities (ESSAMA-NSAAH & LAMBERT 2009, RAVALLION & SHAOHUA 2003, HAUGHTON & KHANDKER 2009), was used. The considered values theoretically range from a minimum of 0 when all individuals are equal, to 100 meaning a maximum of differences. Several sub-Saharan African countries having high GDP indicators (GDPI) are also among the most undermined by the highest inequalities worldwide. This observation is underpinned by data concerning Botswana, Swaziland and the Republic of South Africa. Their GDPI and GC were respectively 0.804, 60.5; 0.647, 50.4; 0.786, 57.8.

Unfortunately, countries having very low GDPI are not spared by such inequalities, as illustrated by the situations of Sierra Leone (0.348, 62.9), the Central African Republic (0.418, 61.3) and Niger (0.343, 50.5). Thus the inequalities are confirmed as an obstacle that it is necessary to overcome in order to promote development, and this is a collective process.

3.1.3. It boosts the Advancement in Terms of Human Development

This is easily understood using figure 1, on which the same index of human development is attributed to Angola and Tanzania, despite their enormous difference in GDP (respectively 600 and 2,200 \$ US (UNDP 2006).

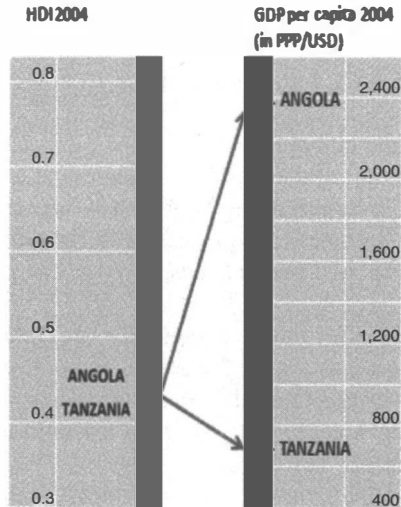


Fig. 1. — Comparison of the Human Development Index (HDI) and Gross Domestic Product (GDP) in Purchasing Power Parity (PPP) of Angola and Tanzania (UNDP 2006).

It is clear that the yearly produced goods in a country are not the only parameter to be considered. There are several other key criteria of human development. Some of them, not promoted during the three decades of war in Angola, similarly to the current situation in D. R. Congo, are mentioned hereafter:

- Education;
- Health/longevity (life expectancy), related to better sanitation;
- Decrease in gender discrimination;
- More and better jobs and improvement of other parameters regarding the quality of life (transport and access to culture).

They should not be neglected in the approach of development research.

3.1.4. It arms the Local Community and Civil Society to face Global Changes and to respond to Globalization

In conclusion, research for development is that which contributes to transformations pulling a community or a society up to a decent standard of living, which creates capacities to maintain this state, to continuously improve it, especially by endogenous means, thus supporting sustainability.

3.2. WHAT IS GOOD DEVELOPMENT RESEARCH?

The main criteria of good research for development are:

3.2.1. Relevance for Development

This implies the adequacy with community needs at local and regional levels, as mentioned below:

- Great challenges at the global level:
Given that the major part of the world's population (at least 1/3rd) lives in less advanced countries, its contribution is obviously necessary to face problems arising globally, for instance, the process of mitigations of climate changes and promotion of clean and sustainable sources of energy.
- Specific needs:
The more problems affecting a community are targeted and solved by research, the more it has relevance for development. For instance, monitoring of volcano activity in the Central African Graben is valuable at local and regional levels in this area. On the contrary, it would be useless to promote such an investigation in Ivory Cost.
Research focused on the struggle against tropical (orphan) diseases, on sustainable management of natural resources, is also among other initiatives with relevance for development.

3.2.2. Synergy involving Local Researchers

It makes it possible for the benefits from the investigations to be amplified and immediately shared by the community (research effectiveness).

3.2.3. Innovation

This refers to the way strategies are improved and implemented in order to meet recognized needs. In all cases the process implies tools of optimal quality, with reduced costs and minimal environmental damage. The New Rice for Africa (NERICA), for which the World Food Prize was awarded to Dr Monty Jones in 2004, is a good example of innovative achievements (<http://www.warda.cgiar.org>).

3.3. HOW CAN WE RECOGNIZE A GOOD RESEARCHER POTENTIALLY CONTRIBUTING TO DEVELOPMENT?

The general skills of such a scientist are the following:

- Is capable of identifying the needs for development. An interesting example was provided by EDON *et al.* (2009) about the domestication and valorization of the wild *Adansonia digitata*. To ensure the involvement of the beneficiaries into the project of cultivating the baobab tree, the collection of capsules was first carried out by giving priority to the varieties preferred by these stakeholders. Afterwards, the rest of the research, including seeds treatment, kept focusing on those seeds resulting from the chosen varieties, which built the success of the project.
- Points out research's best strategies and develops synergies accordingly.
- Produces results and makes them widely accessible, via the accepted standards of science (*e.g.* publications), of multidisciplinary interest and of high quality.
- Runs projects cost-effectively.
- Strives to insert the result of the finished project(s) into policy support.
- Works in transparency and in team.
- Demonstrates an intrinsic desire to do development research.

Who are the researchers who deserve to be supported?

- Young researchers whose projects are compatible with the criteria mentioned above (point 3.3.).
- Senior researchers if they are good researchers (see point 3.3.) and work as mentors for young scientists, so that their results can be amplified and sustained.

3.4. WHAT SHOULD WE DO SO THAT COUNTRIES IN THE SOUTH THEMSELVES PRODUCE THE BEST POSSIBLE RESEARCH USED FOR THEIR DEVELOPMENT?

3.4.1. *What can Researchers in the South and their Institutions do?*

3.4.1.1. Researchers

They have to work synergistically within networks, enhancing complementarity.

They must be able to attract funds.

3.4.1.2. Research Institutions

The role of research institutions in the South consists in fulfilling the following tasks:

- Supporting and strengthening networks. In general, the cooperation between researchers or their teams remains very low whatever the considered level (national, regional, international). This weakness was deplored in the evaluation of the state of networking in the Southern African Development Community (IAASTD 2008, RAOS 2005). Nevertheless, an exception from West Africa (Benin) is worth mentioning (fig. 2). It shows optimal collaboration developed by the *Laboratoire d'Ecologie Appliquée* (LEA). However, other sectors of research are less prosperous in the Republic of Benin, which consequently remains not developed.
- Planning and prioritizing of needs, with consultation of research and technology users in the identification of problems and planning decisions.
- Searching and providing funds to labs. Sources may be both governments and private enterprises.
- Letting laboratories obtain an administrative and financial autonomy, ensuring celerity in the management of the programmes. Unfortunately, that is far from being guaranteed, even for very crucial investigations. For example, observations and the report issued in March 2009 by local volcanologists about the risk of eruption of the Nyiragongo volcano depended strongly upon occasional funding from the Governor of the North Kivu Province. The scientists concerned would like to get a real administrative and financial autonomy, which can enable them to monitor the volcanoes still active, which is crucial to prevent catastrophes in the area. Let us remind the enormous damages of the Nyiragongo eruption in 2002. Its lava destroyed the centre of the Goma city and killed hundreds of people; tens of thousands individuals were left homeless and about 400,000 were evacuated. Nowadays, livelihoods of more or less 800,000 people are constantly under threat.

- Improving research evaluation. The basic criteria of the assessment are:
 - Relevance for development;
 - Originality;
 - Scientific value;
 - Presentation.

We suggest to increase the weighting of these factors and to assess it according to the degree to which the results of a given research concretely contribute to instituting sustainable conditions for a decent life. It is necessary to appreciate the answers to questions related to the importance of each criterion of assessment. It would be useful to do it similarly with the systems of evaluation existing at international level, *e.g.*:

- The Third World Academy of Sciences (TWAS), founded in 1983 by a distinguished group of scientists from the South under the leadership of the Nobel laureate Abdus Salam from Pakistan, and based in Trieste (Italy), promotes scientific excellence for sustainable development in the South — (<http://twas.ictp.it/>);
- The “*Conseil Africain et Malgache pour l’Enseignement Supérieur*” (CAMES) since 1978 functions as a common framework of management of the careers of the teachers and researchers in the seventeen Member States.

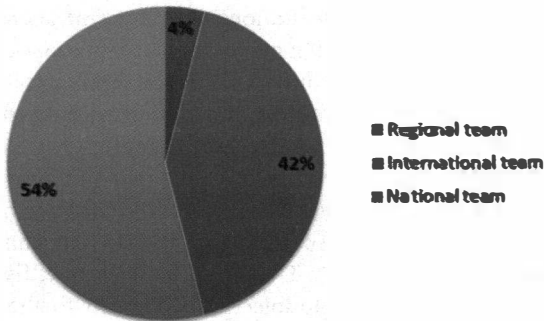


Fig. 2. — Spatial context of research activities in the “*Laboratoire d’Ecologie Appliquée*” at the National University of Benin (Report 2009).

3.4.2. What can Researchers in the North and their Institutions do?

- Gain knowledge of the concerned countries and awareness of evolutions in order to adapt the actions consequently.
- Trust in their partners from southern countries.
- Consider critical issues of importance both to the North and to the South, prior to preparation of research projects.
- Promote both individual and mass learning, more possibilities to reach critical mass of research. This can improve work environment, which limits brain drain.

- Use telementoring for research. Telementoring is a manner of doing research and/or teaching people through remote systems. Individuals or scientific communities are enabled to access to information resources and to obtain assistance that otherwise may not be available to these beneficiaries. This is essential to face the globalization and the briefness of information life. Telementoring requires new technologies of information (videoconference, internet and so on), which implies efforts to close the numerical gap between research institutions in the North and those the South. In this respect, the “*Centre de Documentation de l’Enseignement Supérieur, Universitaire et de Recherche à Kinshasa*” (CEDESURK) corresponds well to the needs of the D. R. Congo, but such programmes are still very rare and insufficient. Despite the fact that the accessibility to this system is practically limited to the academic population living in Kinshasa, due to the unavailability of adequate facilities elsewhere in the country, the CEDESURK has demonstrated its efficiency especially in remote training (KASAJIMA & POCHE 2008). Such initiatives should be amplified so that they can benefit to thousands more of Congolese students and researchers. Indeed, they wish to be helped to develop interesting scientific questions, clarify and redefine their projects with regard to relevance for development, recognize and gain access to pertinent information sources (books, periodicals or other online data) and valorize them effectively.
- Provide the southern research institutions with a set of ancient publications regarding their country and which may be of great importance for the conception of new projects. This recommendation has been implemented by the Royal Museum for Central Africa (MRAC), the Royal Academy for Overseas Sciences, the Royal Belgian Institute of Natural Sciences (RBINS), the National Botanical Garden of Belgium (NBGB) in the frame of an interlibrary project launched by the “*Commission Universitaire pour le Développement*” (CUD) on the occasion of the celebration of the 50th anniversary of the independence of the D. R. Congo. Thanks to this initiative, five tons of books from the above-mentioned institutions were donated to the universities of Kinshasa and Lubumbashi and to the CEDESURK. The books and their contents were officially presented to the recipients in Kinshasa and Lubumbashi in October 2010. Our contribution to this event consisted in two communications. One was dedicated to the use of the archives of the former national parks of Belgian Congo (<http://www.apncb.be>) for the study and the monitoring of biodiversity and the other to how scientific publications of the Belgian institutions are an essential support to research for development in D. R. Congo.
- Act as facilitators. Researchers based in developing countries should be helped to seize opportunities that they often loose when they do not have access to the information about, for instance, the Prize of the Belgian Development Cooperation.
- Strengthen networking. Attenuation of the weakness of interlaboratory networks will allow researchers to be better informed of calls for project submis-

sions in the frame of international cooperation and it will increase the number of answers from Africa. The “Education Link” (EDULINK) is one of those interesting programmes and it constitutes a typical example, as it involves several European countries and those of the African, Caribbean and Pacific area (ACP). The programme is rooted in the commitments of the Johannesburg World Summit on Sustainable Development and its purposes include the reinforcement of capacities of Higher Education Institutions (HEIs) by providing support at the levels of research and technology, intra-academic mobility and so on (<http://www.acp-edulink.eu>).

- Although research departments located in sub-Saharan countries are geographically and statutorily eligible, they often find themselves cut off, so that they fail to adhere to EDULINK because it requires joint submission by partners from at least four different regions. This situation can be changed thanks to support in strengthening networking, which is likely to enable more candidates to meet the criterion of access to the research funds.
- Promote joint learning. The advantage of joint learning is, in particular, to make it possible for researchers to benefit reciprocally from knowledge and capacities of colleagues. In addition to this complementarity, this training supports the sharing of equipment, the rationalization of research cost and it allows to be inserted into international networks. The efficiency of joint learning can be illustrated by the quality and diversity of the results (more than thirty lab apparatuses) of the doctoral research accomplished by Masuhuko Wenceslas at the UCL (1996). They were made possible by a former synergy at Bukavu D. R. Congo (<http://cat.inist.fr/?aModele=afficheN&cpsidt=9918161>; <http://cat.inist.fr/?aModele=afficheN&cpsidt=9918162>). Unfortunately, except for rare successes, the technology transfer remains defective. The majority of the reports on capacity building indicate the number of trained people and/or organized seminars. A feedback on the result obtained in the long term often misses.

4. Conclusion

All the factors underlined in this paper are essential for investigations which accelerate development.

Research must be better evaluated in order to appreciate how programmes deliver effective tools to battle against poverty and to boost globally sustainable conditions of equitable and decent livelihood. Thereby, it is expected that researchers and their institutions implement strategies adapted to these development targets. Thus, relevance and innovation are confirmed as very important criteria among those which are used as reference to research evaluation. It is recommended to increase their weight in the assessments.

International support can in particular consist in better supporting the opening-up of the researcher, thanks to his increased integration in networks, in promot-

ing a mutual training involving the scientists of the North and those of the South, who are committed to solve problems that are specific to Africa.

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Amérique latine: une recherche à plusieurs vitesses

par

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MOTS-CLES. — Amérique latine; Enseignement supérieur; Recherche; Développement; Inégalités.

RESUME. — L'Amérique latine et les Caraïbes (ALC) possèdent, par rapport à d'autres régions en développement, d'importants *atouts* en ce qui concerne la recherche scientifique. Dans un contexte accéléré d'internationalisation de l'enseignement supérieur, l'ALC affronte également de nouveaux défis liés au risque d'accentuation des grandes inégalités internes existantes parmi les systèmes de recherche et d'enseignement qui caractérisent la région la plus inégale du monde. A partir d'une vision panoramique de la recherche et de l'enseignement universitaires en Amérique latine, cet article suggère différentes pistes destinées à renforcer la collaboration entre institutions européennes et latino-américaines dans le but de mieux articuler connaissance scientifique et développement humain, dans des contextes fortement inégaux et hétérogènes.

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Cette communication est structurée en deux parties. Dans la première, sont brièvement présentés les contours multiples des transformations que connaît le système d'enseignement supérieur en Amérique latine et les risques d'accentuation des inégalités dans un contexte de forte internationalisation de l'enseignement universitaire. Dans la seconde partie, à partir de certaines caractéristiques de la région, des pistes de collaboration sont esquissées, qui tentent d'allier excellence et lutte pour réduire les inégalités sociales.

1. Métamorphoses d'un système inégal et hétérogène

Selon des estimations de CHAPARRO (2010), en Amérique latine et aux Caraïbes, les universités répondent à 85 et 90 % de la production de la connaissance; elles jouent également un rôle très important dans l'animation de réseaux

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internationaux de recherche. L'enseignement supérieur en ALC connaît de grands changements que certains analystes caractérisent de métamorphoses (RAMA 2006): des transformations qui, sans aucun doute, auront une incidence importante sur la recherche scientifique latino-américaine.

1.1. MASSIFICATION DE L'ENSEIGNEMENT SUPERIEUR DANS UN CONTEXTE DE «MERCANTILISATION» ET DE REDUCTION DE L'INTERVENTION DE L'ÉTAT

Une tendance des dernières années en Amérique latine et aux Caraïbes est l'augmentation du nombre d'établissements d'enseignement supérieur et du nombre d'étudiants inscrits dans les universités. En 2006, il y avait dans cette région, plus de huit mille institutions consacrées à l'enseignement supérieur et dix-sept millions d'étudiants universitaires inscrits, c'est-à-dire un peu plus de 16 % des étudiants d'enseignement supérieur au niveau mondial (CRES 2008). Nonobstant la massification évidente de l'enseignement supérieur latino-américain, les inscriptions dans cette région représentent la moitié de celles des pays riches (ALTABACH *et al.* 2009).

Le profil des étudiants est aujourd'hui très diversifié: il inclut des secteurs sociaux traditionnellement exclus de l'enseignement supérieur, ainsi que des personnes faisant partie du marché du travail mais qui souhaitent réaliser des études de post-graduat. Ceci explique la grande hétérogénéité des étudiants en ce qui concerne le sexe (de plus en plus de femmes), l'âge, l'état civil et l'insertion dans la société.

La massification de l'enseignement supérieur ne s'est pas accompagnée d'une amélioration de sa qualité; les conditions de travail de l'enseignant ont continué à se détériorer; ainsi 80 % des professeurs travaillent à temps partiel, sont mal payés et ont plusieurs emplois (ALTABACH *et al.*, *op. cit.*). Du côté des étudiants on observe des situations fréquentes d'abandon et de désertion des études (DIDRIKSSON & GAZZOLA 2008).

Cette augmentation massive du nombre d'étudiants qui suivent des études supérieures en ALC contraste avec le maigre budget moyen disponible dans la région pour l'enseignement supérieur, qui est inférieur à 1,5 % du produit intérieur brut (PIB) (RODRIGUEZ 2006). Ce montant est largement insuffisant pour assurer un système en expansion et particulièrement pour répondre aux exigences en matière de recherche.

1.2. PRIVATISATION ET INTERNATIONALISATION

La nette insuffisance des budgets consacrés aux universités publiques a ouvert la voie au développement d'une importante offre privée nationale et internationale. On observe également un processus de privatisation des universités publiques qui doivent générer des revenus propres pour compenser le déficit de l'Etat.

Le secteur privé absorbe des étudiants qui ne sont pas en condition d'accéder au secteur public. Si la qualité des établissements privés est assez variée, fréquemment il s'agit d'institutions à des fins principalement lucratives où l'activité de recherche est très limitée, voire nulle. Dans certains pays comme le Mexique, le Brésil ou le Chili, plus de la moitié de la population estudiantine est éduquée au travers du secteur privé (ALTABACH *et al.*, *op. cit.*).

Différents analystes (RAMA 2006, BRUNNER 2009, BRUNNER & URIBE 2007) considèrent qu'un des aspects les plus préoccupants dans l'internationalisation de l'enseignement supérieur latino-américain est la présence, dès la fin des années 1990, de nouveaux agents éducatifs internationaux, peu contrôlés et régulés, qui présentent une offre variée d'enseignement, enfreignant très souvent les normes nationales, sans garantir des niveaux de qualité comparables à ceux de leur pays d'origine et étant dictés très souvent par des institutions non autorisées. Ces «fournisseurs transnationaux» d'enseignement supérieur prestent leurs services conformément aux schémas commerciaux de consommation.

L'augmentation de ces nouveaux acteurs de l'enseignement supérieur a suscité la préoccupation des différents organismes associatifs universitaires latino-américains qui ont insisté sur le fait que l'éducation est un bien public qui doit être fourni et régi par l'Etat et ils ont recommandé à leurs gouvernements de superviser l'enseignement transnational et le commerce éducatif. Il convient de souligner le rôle joué par l'Union des Universités d'Amérique latine (UDUAL), qui a tiré la sonnette d'alarme en 2004 sur les conséquences négatives pour les universités latino-américaines de l'Accord général sur le Commerce de Services (*General Agreement on Trade in Services* (GATS)) de l'Organisation mondiale du Commerce sur le secteur éducatif. Dans le cadre des négociations du GATS en automne 2003, les Etats-Unis ont demandé la levée de tous les obstacles au libre échange des services éducatifs, y compris les obstacles légaux.

La déclaration finale de la troisième rencontre des Réseaux universitaires et Conseils réunis à Lima en juin 2009 (www.seal.unesco.org.ve) met également l'accent sur le besoin de maintenir l'enseignement comme bien public, d'améliorer la qualité de l'enseignement supérieur et de développer une internationalisation solidaire.

Les processus d'internationalisation et de privatisation que vit l'enseignement supérieur de l'ALC risquent d'accentuer la dualisation du système d'enseignement supérieur entre un nombre réduit d'universités de qualité et une large périphérie d'universités de deuxième et troisième rangs. Le point suivant nous permettra de mieux saisir ces enjeux.

1.3. UNE RECHERCHE A PLUSIEURS VITESSES

En ALC, la majorité de la recherche universitaire se trouve concentrée dans un nombre réduit de pays. Le système brésilien octroie environ 10 000 doctorats et 30 000 licences chaque année, ce qui implique une augmentation de 300 % en dix

ans (ALTABACH *et al.* 2009). Comme on peut l’observer dans le tableau 1, l’Argentine, le Brésil, le Chili et le Mexique sont ceux qui investissent le plus en science et développement et qui possèdent le plus grand nombre de chercheurs par habitant et de docteurs de la région.

Tableau 1
Amérique latine et Caraïbes: dépenses en recherche (R) & développement (D) (2002)

Indicateurs Pays	Dépenses moyennes en R&D par rapport au PIB	Dépenses moyennes en R&D par habitant ^{oo} (PPC) ^{ooo}	Personnel en C&T (pers. physiques) (EJC) ^{oooo}	Nombre moyen de chercheurs par 1 000 hab. PEA (EJC)	Docteurs diplômés (personnes physiques)
Argentine	0,39	24,78	37 413	1,83	-
Brésil	1,04*	79,72*	157 384	0,78*	6 843
Chili	0,67°	51,60°	11 173°	1,08°	83
Mexique	0,39°	33,63°	44 095°	0,64	1 404
Moyenne des quatre pays	0,62	47,43	62 516	1,08	Total 8 330
Moyenne ALC	0,64	48,38	150 440	0,71	Total 9 275

Source: ROYERO (2005).

* Informations année 2000.

° Informations année 2001.

^{oo} En dollars américains.

^{ooo} PPC = parité du pouvoir d’achat.

^{oooo} EJC = équivalents temps plein.

1.4. TROIS CAS DE FIGURE

MOUTON & WAAST (2008) distinguent trois groupes (*clusters*) de pays selon le niveau d’institutionnalisation et de développement scientifique: les pays d’Amérique centrale et des Caraïbes (Guatemala, Belize, Honduras, Salvador, Nicaragua, Costa Rica, Panama, Cuba, République Dominicaine, Haïti, Jamaïque, Trinidad & Tobago); les pays andins (Bolivie, Colombie, Equateur, Pérou, Venezuela); les pays du Cône Sud (Argentine, Chili, Uruguay, Brésil) et le Mexique.

A l’exception de Cuba et du Costa Rica, les pays d’Amérique centrale et des Caraïbes se caractérisent par un manque de politique de recherche et de développement propres. En l’absence d’une politique nationale de sciences et de technologie, certains pays sont dépendants de la coopération internationale.

Des pays andins tels que le Pérou et la Bolivie, s’ils ont bien développé des initiatives pionnières il y a déjà quelques décennies dans certains domaines de connaissance (par exemple mines et géologie), aujourd’hui semblent être bloqués; pour leur part, le Venezuela et la Colombie développent de nouvelles initiatives orientées vers une plus grande institutionnalisation de la recherche scientifique.

Le troisième groupe est constitué des pays du Cône Sud auquel s'ajoutent le Brésil et le Mexique. Il s'agit du groupe le plus dynamique dans la dernière décennie. Le Cône Sud représente 68 % de l'investissement en science et technologie de toute la région. De ce pourcentage, plus de la moitié correspond au Brésil (CRES 2008), au niveau des études de doctorat.

Du point de vue bibliométrique, l'Argentine, le Brésil et le Chili se dégagent également. Le tableau 2 permet d'observer que, dans le total publié dans le *Science Citation Index* (SCI) pour l'Amérique latine et les Caraïbes pour 2002, les quatre pays mentionnés ont aggloméré 90 % des publications, tout comme dans la base de données multidisciplinaire PASCAL, où ils représentent 89 % du total.

Tableau 2
Amérique latine 2002: indicateurs bibliométriques (Argentine, Brésil, Chili et Mexique)

Indicateurs Pays	Publications en SCI	Pourcentage du total mondial en SCI	Publications en PASCAL	Pourcentage du total mondial en PASCAL
Argentine	5 581	0,543	2 611	0,514
Brésil	15 854	1,542	7 306	1,388
Chili	2 655	0,258	1 089	0,214
Mexique	5 995	0,583	3 410	0,871
TOTAL	30 085	2,926	14 416	2,987
TOTAL A.L.	33 577	-	16 200	-

Source: ROYERO 2005.

1.5. INEGALITE INTERNE

Un autre trait caractéristique de l'ALC est l'hétérogénéité et l'inégalité interne entre des systèmes éducatifs au sein de chaque pays: des différences, par exemple, entre des universités situées dans la capitale et à l'intérieur du pays, dans des zones urbaines et rurales, des difficultés d'accès liées à des situations de pauvreté ou d'appartenance à des groupes ethniques déterminés. Le Brésil et le Mexique sont des exemples de ce monde de contrastes. Ces pays jouent un rôle important au niveau de la recherche scientifique et de l'enseignement supérieur, et possèdent en même temps, les indices les plus élevés d'analphabétisme dans la région. Ces deux pays, qui représentent 60 % de la population de la région, atteignent vingt millions d'analphabètes, sur un total de trente-sept millions que compte l'ALC.

En guise d'exemple, nous pouvons observer dans le tableau 3, comment les étudiants de descendance afro qui parviennent à terminer leurs études supérieures au Brésil atteignent seulement les 11 %, contre 86,7 % chez les étudiants de race blanche (RANGEL 2008).

Tableau 3
Personnes âgées de 25 ans ou plus,
par niveau d'éducation conclu selon la couleur ou race-ethnie - Brésil

Couleur ou race	Niveau d'éducation conclu						TOTAL	
	Aucun	Fondamental incomplet	Fondamental	Enseignement moyen	Pregrade	Graduat/ Doctorat	%	Millions de personnes
Blancs	10,0	46,6	13,9	19,5	9,4	0,5	100,0	47 998 188
Noirs	20,9	52,7	11,7	12,3	2,3	0,1	100,0	35 436 078
Asiatiques	7,4	29,0	11,6	25,1	25,6	1,2	100,0	491 977
Indigènes	29,8	47,4	10,6	9,9	2,0	0,2	100,0	345 440
TOTAL	14,7	49,1	13,0	16,5	6,5	0,4	100,0	84 271 683

Source: d'après RANGEL 2008.

2. Les atouts de la recherche en ALC et les défis d'avenir

D'après MOUTON & WAAST (2008), l'Amérique latine et les Caraïbes, par comparaison avec d'autres régions en développement, constituent une région qui compte de manière globale d'importants atouts favorables pour le développement d'une recherche scientifique de qualité; parmi eux, on signale: l'existence de systèmes éducatifs de longue durée, la vitalité de ses communautés scientifiques, le nombre de pays où il y a des systèmes nationaux de stimulation à la recherche, une présence active dans des réseaux de connaissance, la conception — encore naissante — de politiques orientées vers le développement de l'échange intra-Amérique latine (de programmes d'études, de professeurs et étudiants), et non seulement par rapport aux Etats-Unis et l'Europe, entre autres.

De cet ensemble de facteurs se dégagent la recherche d'une meilleure coordination entre la diversité des réseaux auxquels participent les universités et les centres de recherche de l'ALC et un effort de coordination inter Amérique latine, traditionnellement orientée vers une collaboration avec les Etats-Unis et l'Europe. Dans cette optique, se dégage la constitution récente de l'*Espacio de Encuentro Latinoamericano y Caribeño de Educación Superior* (ENLACES), instance de coordination de différents réseaux universitaires sous les auspices de l'UNESCO, avec l'objectif d'unir les efforts dans la perspective de former un espace de rencontre Amérique latine-Caraïbes pour l'enseignement supérieur.

En ce qui concerne la réduction des différences internes dans les systèmes d'éducation qui caractérisent l'ALC, il est également possible d'observer certaines avancées intéressantes, plusieurs d'entre elles liées aux processus de décentralisation qui permettent de canaliser des ressources vers les universités régionales: c'est le cas du Pérou.

A partir des gouvernements, diverses modalités compensatoires ont également été encouragées, destinées à augmenter l'égalité des opportunités dans l'ensei-

gnement supérieur de secteurs plus défavorisés, soit pour des raisons économiques, ethniques, ou de genre, etc. Les modalités utilisées sont diverses (bourses, quotas, modalités d'admission spéciales, institutions d'enseignement supérieur pour groupes spécifiques, etc.). Dans le cas mexicain, des investissements ont été effectués dans des services éducatifs complémentaires dans des zones défavorisées: 90 % des étudiants inscrits sont la première personne de leur famille à suivre des cours supérieurs, 40 % vivent dans des zones défavorisées économiquement (ALTABACH *et al.* 2009). Depuis 2001, diverses universités d'Etat ont fixé des quotas pour l'admission d'étudiants de descendance afro ou avec un handicap (RANGEL 2008).

Tous ces aspects positifs ne doivent pas nous faire oublier la faible participation de la région dans la production mondiale de la recherche scientifique. ALC représente seulement 11,4 % des inscriptions en éducation supérieure, produit 3,2 % du matériel scientifique et a un indice de brevets de 0,1 % de la planète, comme a été rappelé, par un expert en éducation supérieure, lors d'une rencontre de Recteurs en Cartagena d'Indes (CRES 2008). Sans aucun doute, un aspect clé de l'avance de la capacité de recherche scientifique se situe du côté de la stabilité et de la continuité des systèmes de recherche existants, encore très dépendants des conjonctures économiques et politiques changeantes qui caractérisent l'ALC.

3. Les réponses possibles

L'hétérogénéité latino-américaine exige la combinaison d'une pluralité de modalités de coopération; certaines ne diffèrent pas des modalités classiques entre les partenaires qui ont atteint un même niveau de développement scientifique. Cependant l'existence de fortes inégalités internes appelle à être inventifs, à imaginer — par exemple — des formes de coopération triangulaire qui associeraient des universités de différents niveaux de développement en recherche et enseignement de troisième cycle, de manière à contribuer à diminuer les écarts caractéristiques des systèmes universitaires latino-américains. Une expérience intéressante dans ce sens a été développée pendant dix ans entre les universités de la capitale et de l'intérieur du Pérou dans le domaine des sciences sociales, expérience qui a compté sur l'appui de la coopération au développement belge à travers la CUD-CIUF (DEGEE & YEPEZ 2005).

Si l'internationalisation de l'enseignement supérieur a ses propres spécificités en accord avec les différents contextes nationaux et régionaux, l'Europe et l'Amérique latine sont confrontées au défi commun — comme nous le rappelle Michel Molitor (2003) — de contribuer à la meilleure recherche et au meilleur enseignement possibles tout en gardant le contact le plus étroit avec les besoins de la société. Dans ce sens, il semble important de placer des projets de recherche sous les auspices de la coopération internationale, qui combinent des exigences de qualité avec la pertinence sociale. Ces efforts donnent leurs fruits en Belgique,

avec le financement par la Commission universitaire au Développement (CIUF/CUD) de ce que l'on appelle les Projets interuniversitaires ciblés (PIC). Les PIC «sont des projets de recherche stratégique et de transfert des connaissances au profit des populations locales des pays du Sud au travers des institutions universitaires de la sous-région» (voir www.cud.be). Avec un budget de 5 200 000 euros par an, ils impliquent des équipes de recherche dans vingt-cinq pays au monde, toutes disciplines et problématiques de développement confondues; en Amérique latine six pays bénéficient de cette initiative (Brésil, Equateur, Nicaragua, Cuba, Bolivie, Colombie, Haïti). De leur côté les universités néerlandophones de Belgique agroupées dans le *Vlaamse Interuniversitaire Raad* (VLIR) développent également une initiative multidisciplinaire appelée «*eigen initiatieven*» (voir www.vlir.be). Cette initiative appuie des projets avec différents pays du monde dont plusieurs en ALC (Bolivie, Colombie, Cuba, Equateur, Nicaragua, Mexique).

Une autre initiative destinée à encourager la pertinence pour le développement des recherches est le Prix de la coopération belge au développement. Ce prix «couronne les travaux scientifiques qui contribuent fortement à la connaissance dont pourra bénéficier le développement durable dans les pays en voie de développement» (voir www.devcooprize.africamuesum.be); il est adressé aux étudiants et jeunes chercheurs belges ou des pays partenaires de la Belgique.

4. Conclusion

En conclusion cette présentation de l'expérience de recherche dans le milieu universitaire latino-américain nous rappelle que l'enjeu d'aujourd'hui pour les universités est autant d'arriver à une recherche de qualité, reconnue internationalement, que de produire des connaissances utiles pour leur environnement sociétal. Cet environnement est composé d'acteurs sociaux divers qui expriment des demandes auxquelles l'université doit répondre dans des relations de partenariat. Demandes, qui semblent beaucoup plus urgentes dans des sociétés profondément inégales comme les latino-américaines.

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Supporting Development Relevant Research

by

LUC JANSSENS DE BISTHOVEN*

KEYWORDS. — Higher Education; University; University College; Development; Research; Capacity Building.

SUMMARY. — The Flemish Interuniversity Council-University Cooperation for Development (VLIR-UOS) promotes and supports development relevant research, as part of its broader mandate, and programmes of capacity building in higher education in the South. Its activities are centered around the motto “sharing minds, changing lives”, meaning the empowerment of individuals and institutions of higher education in developing countries to better fulfil their functions of education, research and service to society as drivers for change and development. Based on a system of calls, the programmes of VLIR-UOS are appraised against criteria pertaining to academic relevance and quality and to relevance for development. The different phases of the project cycle are explained in the context of ensuring high-quality research that is relevant for development. And finally, challenges are discussed with regard to how VLIR-UOS can and needs to continuously update with the latest developments regarding policies and best practices.

Introduction

The University Cooperation for Development, as part of the Flemish Interuniversity Council (VLIR), or VLIR-UOS (www.vliruos.be), is the responsible actor for the Belgian government for all university cooperation for development between the universities and university colleges in Flanders, Belgium, and their partner universities in the South. The “South” is a convenient geographic term designating developing countries in South America, Africa and Asia. The universities (in this paper always including university colleges, see BASTIAENS *et al.* 2011) in the South are recognized as development actors in their country and region. Universities indeed play an important role in creating and disseminating knowledge, and in offering a critical reflection on society. Both knowledge and critical reflection are important drivers of development. The link between knowledge and development is well expressed in the VLIR-UOS motto “sharing minds,

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changing lives”. By sharing minds, through science, VLIR-UOS aims at changing lives in the developing countries in the South.

University cooperation for development is not about money changing hands, but about ideas changing minds. The sharing of minds, the exchange of information, knowledge, ideas and experiences must lead to changing lives for the better for the people in the South. Therefore, local institutions of higher education are incited, encouraged and supported to take up their role as drivers of change in society, to contribute to development in general and to poverty alleviation more specifically. Development relevant research is not to be confused with “development research”. Development research can either be understood as research on the development of new products or research about the developing world as done by development research institutes listed by *e.g.* the “European Association of Development Research and Training Institutes” (EADI). Development relevant research is one of the components or outcomes of “capacity building” or “capacity development”, as defined by OECD and UNDP. Capacity building is based on learning and acquisition of skills and resources among individuals and organizations, in order to become less dependent and ultimately independent of aid in a spirit of long-term sustainable development (OECD & The World Bank 2007).

The general objective of VLIR-UOS is to empower the universities in the South to fulfil their role as actors in the development of their region and country (education, research and service to society) through cooperation with the Flemish universities and university colleges. VLIR-UOS funds cooperation, rather than institutions in the South. The specific objectives are on the one hand institutional capacity building in the South and on the other expertise development in Flanders. This means building education and research capacity of partner universities to stimulate the development of knowledge and expertise in the South, as well as maintaining and enlarging development expertise in Flanders. Maintenance and expansion of the level of support for development cooperation in Flanders is made possible by promoting mutual understanding, solidarity and world citizenship (see *e.g.* GEERTS 2011). Six basic principles underpin the actions of VLIR-UOS: (1) solidarity and quality, (2) attention for sustainability, (3) interuniversity approach, (4) multidisciplinary approach, (5) shared interest and (6) participation and ownership. Solidarity amongst academics goes with mutual trust, but also with solidarity towards the poor, the minorities, North-South solidarity. The selected projects should be of high academic quality, but also the functioning of the projects should be characterized by high-quality communication, financial management, or human relations. Sustainability is a wide concept. It refers to the effort to ensure that the undertaken development process will not collapse, once the programme is finished. This can *e.g.* be achieved if structures are installed which generate funds (excellence centres, spin-offs, internationalization, grant schemes, public-private partnerships). However, projects dealing with natural resources or agriculture should take sustainable development as guiding principle as well. This means to create development which does not

damage the environment for future generations. The core business of VLIR-UOS is to create cooperation between universities in the North and in the South in a multidisciplinary approach based on shared interests, participation and ownership. Scientists often give testimony of the added value caused by this approach. Their personal networks are expanded, and their isolation or ivory tower is abated for their own benefit and the benefit of science and development.

Relevance for Development

The final objective of university cooperation for development is the sustainable, people-oriented development of the countries of the South through mutual enrichment of knowledge and by a continuous questioning between the two partners of one another and oneself. Concretely, this means that VLIR-UOS is translating this objective into policies at different levels, processes, institutions, activities, outcome, output and results, application of results and impact. All these reflections, actions or interventions mean much more than only “research”. The activities facilitated and funded through VLIR-UOS are partnerships between universities, departments, laboratories and researchers in the form of programmes and projects. Programmes are defined as larger entities corresponding to specific administrative and financial transactions in the portfolio of VLIR-UOS. Projects are the concrete thematic interventions within such programmes.

As VLIR-UOS is managing funds of the Belgian Directorate General for Development (DGD, formerly DGDC), it needs to adhere to the policies specific for the Belgian development cooperation, itself under regular scrutiny by the peer review of the Development Assistance Committee (DAC) of the OECD (OECD 2010). The “niche client” of VLIR-UOS is the academic world in the North and in the South. Hence, the programmes of VLIR-UOS are always combining or linking two worlds: the scientific community or the academic world and the development cooperation world with its own paradigms and rationale. The work generated by VLIR-UOS should always be embedded in what is relevant for development. Therefore, it is essential for VLIR-UOS to check project proposals against the mission statement of VLIR-UOS, specifically questioning the developmental relevance.

The following issues are crucial when appraising a new research project: what is the role of the university, its social responsibility? Why should a particular university engage in that specific project or programme? What are the academic and the developmental objectives? Who will cooperate? Where is the demand-drivenness? Is the ownership ensured? Is the context analysis adequate enough? Which of the three university functions — teaching, research, service to society — will be served by the project or programme? What is the importance of the intended research as to the developmental relevance for the university, its direct area, its country or the region beyond? Is the partnership bound to be a win-win relationship for North and South?

Each of these questions can be discussed at length, and the terminology used may be subject to discussion or even controversy as to the perceived contents and definitions. What is development, win-win, ownership? It is however not the scope of this paper to discuss in depth the various meanings of this terminology, but it can generally be understood according to the mainstream international consensus, as referred to in *e.g.* the Paris Declaration or the Accra Agenda, to name but the main international fora about improving aid efficiency.

However, it is pertinent to define the boundaries in which VLIR-UOS wishes its projects to function within a development relevant rationale. This can be done by answering the questions mentioned. Who will be selected? Partner universities are selected both on the basis of (i) their potential with respect to university education and research and (ii) the emancipatory role they play within their society. Furthermore, they must pursue an active policy of cultural, ethnic, social and philosophical non-discrimination. These criteria can be inferred for a particular institution by scrutinizing annual reports, multi-annual plans, strategic plans and websites, next to face-to-face discussions. The who-question does not limit itself to the university alone, as one can, or even needs to work together with other social actors in the countries concerned: government institutions, NGOs, local SMEs, research institutes, government agencies, to name a few. The aim is to respond to a local, generally recognized development need, which can be remediated by academic cooperation with a Flemish university. This responds to the what-question.

A VLIR-UOS funded project can thus be considered as a development relevant project which strengthens the research and education capacity of a partner institution in the South by means of generating and exchanging knowledge. The final aim is to use this local capacity in the struggle against poverty in the concerned country or region. The potential contribution and added value to the development programme of the country concerned is of high importance for the developmental relevance of the intended VLIR-UOS funded project.

VLIR-UOS funded projects have to meet local needs and have to be aligned with the vision and strategy of the local partner institute. This requires an in-depth analysis of the economic, social, cultural and political context of the region and country, of the needs and capacities of the partner institute, of the available expertise and opportunities, and of the added value of the concerned academic cooperation, also taking into account projects or programmes of other donor organizations. More specifically, capacity building at the level of local institutions entails improvement of quality of education, research, service to society, policy and management, but also self-reliance for scientific research and access to international networks and external money. Improved capacity for development is the ultimate impact, with direct dividends for research on local development problems and an active role in civil society: *e.g.* advocacy to government, other civil society actors.

The Application and Selection System

Challenges exist at every level, from the policy to the selection initiating a project. Selection criteria do not necessarily carry the same weight, depending on whether the selection concerns scholars (BOEREN *et al.* 2008) or projects (Span Consultants 2008). The selection commission should be as objective as possible. Therefore, it is important to ensure a fair balance of disciplines amongst the reviewers, as well as enough external reviewers not linked to a Flemish university. Even though this system is more complex in terms of logistics and more expensive, inclusion of experts from the South should be more encouraged, as they might view the needs addressed in a different perspective. VLIR-UOS is striving for a peer review system similar to the system prevailing at the National Fund for Science, with some differences inherent to the specific operating details. In order to identify interesting development relevant research proposals, VLIR-UOS thus far acted around basic principles of (i) open calls for proposals, (ii) competitive selection and (iii) selection on the basis of peer review. VLIR-UOS is handling the application and selection procedures for its programmes and projects based on mainstream practices in the scientific community on the one hand, but also on development aid practices on the other. The methodological framework is embedded in the Project Cycle Management (PCM), adapted from the PCM used by the EU for its own development projects (European Commission 2004). Although a comparative study on application and selection amongst different granting organizations and between the different VLIR-UOS programmes still demonstrated disparity in procedures (Span Consultants 2008), there is a general movement of convergence amongst organizations and within organizations to simplify and harmonize such procedures, in order to meet the principles set out by the Paris Declaration (2005) and the Accra Agenda (2008).

The selection will take into account a set of criteria applied on the project proposal, but also on the national and international contexts, such as the country, the partner institution, the partnership, the adherence to internationally agreed principles as worked out by the Paris Declaration (2005), the Accra Agenda (2008), the Millennium Development Goals (see *e.g.* European Commission 2005) and the Belgian formal cooperation framework. Some political economy issues, such as possible hidden and double agendas, the power structures, the level of corruption, the justice system, the democratic institutions, the (lack of) political checks and balances, the fungibility trappings are much more difficult to assess, but might play a role in the selection if some elements are known. The national contextualization is important, as well as the existing complementarity and synergy with existing initiatives by VLIR-UOS and other donors. Criteria range from quality of the proposal, to developmental relevance, effectiveness, efficiency, feasibility and sustainability. Other criteria such as ethics and human rights, ecological sustainability and gender balance are *de facto* screened for conformity with the mission and vision of VLIR-UOS.

Identification and Formulation

A project can only be written after a proper identification process, including the first contacts of the partners around an idea of cooperation, followed by a stakeholder analysis, a problem and objectives' tree analysis. This identification process is the first step in the process of the project cycle. The next step is the formulation phase with the definition of the five pillars of a programme, as expressed in the logical framework: (i) general and specific objectives, academic and developmental, (ii) intermediate results and corresponding activities, (iii) corresponding objectively verifiable indicators, (iv) sources of verification, and (v) assumptions. This should be linked to a coherent budget according to financial guidelines per budget line and a time line in the shape of an operational plan. This project identification and formulation ensures a proper guarantee for local contextualization and demand-drivenness and an *ex ante* identification of objectives — academic and developmental — in view of future monitoring and evaluations. Obviously, the project proposal should adhere to the guidelines as formulated in the call concerning eligibility and formats.

Depending on the scope and the scale of the programme, a call can either be launched for a full-fledged project proposal, which includes the identification and formulation process, or limited to a call for intention first, which excludes the formulation or additional identification steps. This tiered method is useful for large projects, because it allows VLIR-UOS to define a formal funding framework in order to support the multi-stakeholder formulation mission in the South. The identification of a large IUC programme (Institutional University Cooperation) can be backed up by a mission by external consultants (*e.g.* DE NOOIJER & SOUTHWOOD 2008). The mission is intended to deliver an appraisal of the visited universities using information provided by VLIR-UOS, locally collected information as well as an on-site verification and qualification of the data obtained. The mission formulates a recommendation to VLIR-UOS concerning the extent to which the visited universities and proposed partnerships meet the IUC criteria and expectations of VLIR-UOS in view of the IUC programme objectives and modalities. The formulation is often backed up by a resource person from VLIR-UOS who provides support for the compliance to the guidelines, but also assists in formulating a quality logframe. These identification and formulation phases are essential for a maximalization of the succes rate of a future project.

Monitoring and Evaluation

Once a project has been selected by the selection committee and confirmed by the VLIR-UOS Steering Committee, the partners and VLIR-UOS will sign a cooperation agreement defining the period, budget, planning, objectives, deliverables and the rights and duties of each party. The projects, once started, need reg-

ular monitoring. This happens through steering committee meetings in North and South, and jointly. Once a year an annual narrative and financial report, and the planning for the following year, are submitted to VLIR-UOS. This is the occasion for VLIR-UOS to check whether the decisions taken at the steering committees have been implemented. Moreover, the report for a particular year is checked against the planning for that year. Regular field monitoring visits, often combined with a joint steering committee meeting, but also organized to mediate in conflicts or bottlenecks, add to this monitoring process by VLIR-UOS.

Large Institutional University Cooperation (IUC) programmes are regularly evaluated, *i.e.* at the end of a first phase of five years, the midterm evaluation (*e.g.* VAES & DELVAUX 2011), and at the end of the second phase of five years, the end-of-programme evaluation (*e.g.* DE NOOIJER & ABAGI 2009). The midterm evaluation allows for the possibility to list the accomplished outputs by means of a number of Key Result Areas (KRAs) on teaching, research, extension and outreach, human resources, management, mobility and infrastructure and to remediate “*en cours de route*” into projects with dysfunctions at the level of procurement, implementation or human resources (mandates). The end-of-programme evaluation gives the occasion to present all output by means of the KRAs. Evaluation moments often include a symposium with the presentation of all results generated by the scientific research of Masters and PhDs.

At a higher level, VLIR-UOS also organizes “country-impact evaluations” in order to assess the impact of a whole set of programmes over an extended period in a particular country. This has been done for Vietnam and Ethiopia (PENNY & TEFERRA 2010, VISSER & LAP 2011). Internal evaluations of own programmes are also regularly commissioned, such as *e.g.* a review on Ethiopian alumni (Amdamu Management Consultancy 2006), a review of the Own Initiatives (STESSENS 2006) or a review of ICT projects (CARPENTER *et al.* 2007).

The country, midterm and end-of-programme evaluations are carried out by an evaluation team consisting of an international expert and a local consultant, and backed by a VLIR-UOS programme officer. Both consultants are recruited by VLIR-UOS, following a tender. They are contracted according to Terms of References. Their evaluation consists of a number of steps: (i) desk study of all available documents, (ii) study of self-assessments, (iii) interviews of Northern and Southern stakeholders, and (iv) visit of the local partner university and all the projects. The self-assessments are formats with a number of questions and a scoring system, to be filled in separately by the Northern team, the Southern team (programme formats) and each project (Northern and Southern teams combined, project formats).

Once the evaluation by the external consultants finished, VLIR-UOS will consolidate the evaluation report with all concerned in order to come to a final report. In the case of a midterm, this report will formulate recommendations, availed by the Board (Bureau UOS) for the formulation of the second phase of the IUC programme. The follow-up to the evaluation is the responsibility of VLIR-UOS.

Challenges

“Developmental relevance” is a fluid concept, which may differ from donor to donor, according to the country, the partner institution or the programme. The difficulty of measuring the “impact” of “development relevant projects” is well known in the development literature (*e.g.* JERVE & VILLANGER 2008). The evaluations are excellent at measuring what has been done (results, output, KRAs), and at allocating scores (*e.g.* bad, good, excellent, better than planned, etc.), giving a sense of objectivity and quantitative appreciation, but the real impact at the level of the individual, the department, the campus, the university, the local area and at regional and national levels, the society, is hard to materialize and quantify (see *e.g.* BAKER 2000, World Bank 2006). How do we measure “intellectual products”, how do we isolate the impact of the VLIR-UOS contributions from other interventions, or from the period before the programme? What is the valorization of the involvement of individuals in a scientific career? What is the average cost of an intellectual product? Is this linked to a specific location, or should it be seen as a mobile value? This touches the issues of brain drain, brain gain and brain circulation.

VLIR-UOS is a continuously learning organization. It not only needs to react to changing policies at the national and international levels, but also has to be constantly on the alert for the latest new insights in best practices in *e.g.* administration, Human Resources, financial control, participative workshop methods, public relations, monitoring and evaluation methodologies. Optimization of the systems in place is an ongoing and never ending open process. At the same time it needs to show continuity with policies and administrative processes in order to ensure a stable and predictable environment.

Globalization and the financial crisis have a direct impact on how industrialized countries view their development aid in terms of contents and budgets. Universities also go global and enter the arena of global competition for quality rankings and recruitment of the best students worldwide. It is the challenge and the core business of an organization like VLIR-UOS to constantly benchmark its systems against and in accordance to these dynamic changes in a multi-stakeholder environment.

An example of challenge at the level of VLIR-UOS is the elaboration of country strategies and programmes in order to meet the new DGD policy on more thematic focus in less countries. Another issue, closely associated with country programmes, is the transformation of programme-specific selection committees into regional commissions responsible for all programmes within a particular region.

As a token of this dynamism in the world of development cooperation, at the time the present paper is being written on the basis of a conference held in 2009, not only the whole IUC project cycle of ten years is under review, but also the programme approach is being transformed into a country approach *anno* 2011-2012.

Conclusion

Rather than being centered on its own functioning, VLIR-UOS strives to stay in contact and cooperate with national and international organizations (*e.g.* CUD-CIUF, ITM, KMMA, NUFFIC), several international and regional academic member organizations (*e.g.* EUA (European University Association)), and works in alliances with a number of organizations with similar and complementary interests, such as Close The Gap, International Foundation for Science (IFS, Sweden) and International Network for the Availability of Scientific Publications (INASP, UK). As summarized in the proceedings of the VLIR-UOS IUC policy workshop of March 2008, “only a self-assessing, flexible and dynamic set of programmes from the donor side in alignment with the local structures and in coordination with other bi- and multilateral donors will be able to face the challenges ahead. The buzz word is ‘sustainability’, both in terms of staff retention as institutional finances and educational policy continuity” (JANSSENS DE BISTHOVEN 2008). As formulated by LIE (2005), or in the spirit of the EUA “white paper” (2010), “the aim of all cooperation is the achievement of greater strength through the pooling of resources. This applies to academic cooperation, ..., the building of research and educational cooperation requires long-term commitment”.

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Conclusions

by

Ivan BEGHIN*, Georges STOOPS** & Eric THYS***

Introduction

The two short-term objectives of the symposium were met: the gathering of elements that would allow to proceed effectively with the writing of guidelines for evaluation, and a consensus about the reconsideration of the problems of bibliometrics when used for evaluation of research and researchers in the South. The quality of the presentations as well as the contribution of the round table indeed permitted to collect a wealth of relevant information, suggestions and facts.

In addition, the symposium went even further than originally expected: it indeed did answer the first three questions (see the President's introduction) and then focused on the fourth question (What should we do so that countries in the South themselves produce the best possible research useful for their development? Note: two levels of answers could be considered: 1. what researchers in the South and their institutions can do; 2. what researchers in the North and their institutions can do).

As a result, the presentations and the discussions yielded valuable recommendations about two important points: the strengthening of research capacity, and the nature and practice of inter-institutional cooperation.

Main Conclusions

1. While scientific quality is an essential requirement for a meaningful evaluation of any research it must be emphasized that this requisite needs to be as strict for the South as for the North. A double standard would simply be unacceptable.

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2. To effectively contribute to sustainable development not only research *for* development must be conducted, but also research *on* development. Researchers in the South should be encouraged and be given the means to do so.

3. The availability of good methods for evaluating development research is a prerequisite for the strengthening of such research.

4. Existing methods for evaluating the scientific quality of research (and/or the way such methods are being used) — such as the current bibliometric indices — are presently not satisfactory, and do discriminate against researchers in the South when the latter are compared with their peers in the North. New methods and tools to either substitute or complement the existing ones urgently need to be developed and duly tested.

5. Scientific quality and relevance to development are compulsory dimensions of any evaluation. But other dimensions must be taken into consideration, in a proportion to be determined by the circumstances and the objectives of the evaluation: valorization, applicability, performance, innovation, etc.

6. The general principles for a good evaluation are the same for all overseas sciences, and the requisite of quality always remains the first. But with reference to the criteria and the evaluation tools there indeed are differences between the social sciences on the one hand, and the natural, medical and technical sciences on the other. This may have important implications when conducting interdisciplinary research.

7. The great diversity of stakeholders, of objectives, or of situations does not allow a single multipurpose evaluation method. In each situation the person in charge of evaluation will have to choose or to build a specific evaluation tool, and decide upon the most appropriate criteria. Yet general principles can be enounced to this effect. Guidelines, based upon the symposium conclusions would be extremely useful to the researchers and their evaluators. A rich source of information can be found in the meeting's communications and discussions.

8. When the issue is to evaluate researchers, the tools will have to be adapted to their intended use: either the evaluation of an individual researcher, or that of a team (or a department or an institution).

9. Interinstitutional collaborations between universities and research institutes or centres from the North and from the South strongly contribute to strengthen the research capacity both in the South and the North. They in addition offer opportunities to develop better ways of evaluating research.

10. Regarding research capacity building, emphasis should be laid on research design and on encouraging researchers in the South to publish more. Publishing must be made more appealing to them, particularly through greater international recognition.

11. A strong trend exists towards more genuine partnership in interinstitutional cooperation, thanks to more balanced and equitable exchanges between the participants in joint research projects. Such a trend should vigorously be pursued, and the obstacles to this trend should be studied by researchers from both the North and the South.

12. Priorities for the near future are: to prepare guidelines for the evaluation of development research; to reset in motion, in collaboration with interested partners, the study of bibliometrics and of the problem of its use; to bend upon inter-institutional cooperation, study current principles and practices, and come up with recommendations for archieving a more balanced, mutually beneficial partnership.

13. The Academy, thanks to its independence, its tradition of interdisciplinarity, and the experience of its members with development research, possesses all the needed assets for taking initiatives and acting as a catalyst of actions aiming at improving the evaluation of development research. Because of the very nature of the Academy, its contribution should come in addition to actions taken by other, genuinely interested, partners.

Follow-up to the Meeting

The Academy will actively seek in the immediate future, together with other interested agencies, to implement the two activities that were already on its agenda (and also were the explicit objectives of the symposium): the drafting of **guidelines for evaluation of development research**, and the reconsideration of the **problems of bibliometrics**.

In addition, as a result of the interest generated by the debate around **strengthening research capacity and interinstitutional cooperation**, the Academy will explore — again with interested partners — the possibility of conducting a study of both topics.

Programme

- 9.00 *Introduction*
Jean BERLAMONT, President of the Royal Academy for Overseas Sciences
- 9.35 *Evaluation of Development Research: Difficulties and Questions*
Ivan BEGHIN, Member of the Royal Academy for Overseas Sciences
- 9.55 *The Problem of Bibliometry. Reflections on its Use for evaluating Research in the South*
Georges STOOPS, Member of the Royal Academy for Overseas Sciences
- 10.15 *Lessons learned from the Rules on Ranking of Universities*
Jean-Jacques DROESBEKE, Member of the Royal Academy for Overseas Sciences

THE VIEWPOINT OF OVERSEAS COUNTRIES:

- 11.00 *Doing Development Research in Asia. Problems and Perspectives*
S. N. BALAGANGADHARA, Professor Universiteit Gent
- 11.20 *Towards Research which accelerates Development: the Viewpoint of Africa*
François MUHASHY HABİYAREMYE, assistant Institut royal des Sciences naturelles de Belgique
Member of the Royal Academy for Overseas Sciences
- 11.40 *Amérique latine, une recherche à plusieurs vitesses*
Isabel YEPEZ DEL CASTILLO, Professor Université catholique de Louvain
- 12.00 Discussion
- 14.00 *The Viewpoint of VLIR-UOS*
Kristien VERBRUGGHEN, Director & Patrick SORGELOOS, President
- 14.20 *The Viewpoint of CIUF-CUD*
Hugues LEGROS, Secretary-General
- 14.40 Round Table
Chairman: Morgan DE DAPPER, Professor Universiteit Gent
Member of the Royal Academy for Overseas Sciences
Participants: The guest speakers and Eric THYS, representative of Agri-Overseas (editorial board *Tropicultura*)
- 15.40 Conclusions

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