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Universities as Centres of Research and Knowledge Creation: An Endangered Species?

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SUMMARY REPORT[1]

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Preface

1. The Background: Terms of Reference

The central premise for the Colloquium was that research is a key ingredient in the institutional identity of universities and an indispensable prerequisite for a successful program of teaching and public service.

The principal question that the Colloquium has had to deal with is why major differences in research intensity and capacity exist among the world's universities, and what can be done to moderate and overcome these differences.

In answering this question, the Colloquium has addressed the related issues of *research capacity, research productivity, and research relevance and utility*: research capacity is a necessary, but not a sufficient condition for research productivity and research productivity has to be assessed in terms of the utility and relevance of the research produced.

2. Important Reminders: Themes of the Opening Session

The Opening Session of the Colloquium was notable for bringing together some important reminders on several aspects of the Colloquium's overall theme, including these:

- There is a close and indispensable relationship between research and teaching (Coacher Matsuura, Director-General of UNESCO).

[1] This report is based on the presentation of the three general *rapporteurs* at the concluding session of the Colloquium. The principal points made in the keynote addresses, the opening session, the invited guest presentations, and in the reports on the 12 parallel sessions have been taken into account in this presentation; the full text of the twelve reports on the parallel sessions is reproduced elsewhere in the Colloquium report.

- Knowledge needs to be given a more prominent role in the development discourse (Gun-Britt Andersson, Ambassador, Permanent Delegate of Sweden to UNESCO).
- There is a serious danger in treating education in fragmented segments and stages: UNESCO has a systemic mandate for the education system as a whole (Thandika Mkandawire, Chair, UNESCO Forum Global Scientific Committee; Director, UN Research Institute for Social Development).
- All developing countries have to have a functioning and effective research community (Berit Olsson, Director, SAREC/Swedish International Development Agency).
- Priorities for the development of research are relevance, quality, and international cooperation (Georges Haddad, Director, Division of Higher Education, UNESCO).
- There is a serious danger of a digital divide leading to a technology divide which, in turn, leads to a knowledge divide (Walter Erdelen, Assistant Director-General for the Natural Sciences, UNESCO).

3. Contributions and Debates: Research Capacity, Productivity, and Relevance

In a combination of keynote addresses, invited guest presentations, and working sessions based on contributed papers, the Colloquium examined the three central themes of research capacity, research productivity, and research relevance and utility. While the three themes proved to be suitable foci for the discussion, they also were found to be interconnected in several important ways: research productivity is very much a function of research capacity, and the relevance of research findings is an important element in validly assessing universities' research productivity. A second overall observation pertains to the often dramatic differences in research intensity between different regions of the world, most notably between rich and poor countries, but also within many countries. Lastly, the problems that universities in many parts of the world face in mounting and sustaining adequate programs of research are seen as precipitating a genuine crisis of higher education.

A. Research capacity (Hans N. Weiler)

The report on this theme starts out with a definition of the ingredients of research capacity (i.e., what it takes to develop and sustain research capacity), then proceeds to identifying the principal problems universities face regarding their research capacity, and concludes with what the discussions at the Colloquium suggest as an agenda for future development.

1. Ingredients: What does research capacity consist of?

1.1 Capable researchers

Research capacity consists primarily, though by no means exclusively, of people capable of conducting research: faculty, research staff, graduate students. The principal dimensions of peoples' capabilities for research have to do with training and selection, i.e., the quality of preparation in research design, research methodology, and research

organisation (with special emphasis on the ability of critically assessing and interpreting research concepts and results), and with the criteria for selecting people into positions of research responsibility.

1.2 Time

Even carefully trained and selected researchers need time to be able to achieve competent and significant research results; very often, the burden of heavy teaching and advising loads and of other, sometimes extra-university, responsibilities keeps otherwise capable researchers from living up to their research potential.

1.3 Infrastructure

In virtually all areas of research, although to varying degrees, research capacity depends upon functioning and adequate infrastructures: laboratories, libraries, access to digital and computational resources. In many parts of the world, perfectly capable researchers find themselves thoroughly frustrated by the absence or inadequacy of available infrastructures. This has important implications for strategies of research funding inasmuch as funding the direct costs of a research project is rarely enough as long as funding is not also provided for the indirect costs of the infrastructure needed for a given project.

1.4 Research Climates

Good research is only possible in a situation where research is valued, supported, and autonomous; too often, these conditions are not met. Research requires support from both political leadership and public opinion, and the media play a particularly important role in cultivating a climate of valuing research and researchers, and of granting them the freedom of discovery without outside intervention. There is an inherent tension between the autonomy of research and the knowledge needs of society, but this issue can only be resolved by continuous dialogue rather than extrinsic dictates being addressed at the research community. This open dialogue is an important part of a cultural climate conducive to good research.

1.5 Funding

Good research does cost money, and often a great deal of money. The importance of good research for the economic and social well-being of a society has to be reflected in the amount of financial resources made available for research; good research cannot be had cheaply. Just as important as the adequacy of the funds is their dependability: researchers have to be able to count on predictable levels of support over time, as most research is medium- or long-term in nature. Similarly, indirect funding for research infrastructures is as important as the direct funding of project costs.

1.6 Structural conditions

The institutional structure for research in many parts of the world is suboptimal. Resources and facilities are unduly dispersed and duplicated, economies of scale rarely achieved. A review of such structures is in order so as to pool capacities (as between university and extra-university research or across regions), share facilities and avoid unnecessary duplication. International cooperation and the sharing of resources across

borders can play an important role in enhancing the structural conditions for good research.

1.7 Research Ethics

An important and often underestimated ingredient in research capacity is the existence and observation of a research code of ethics which helps keep researchers resist the various temptations that result from outside research funding, conflicts of interest, or sheer pressures of work. These ethical standards are indispensable for maintaining the integrity, openness, and transparency of the research process, and to safeguard intellectual property.

1.8 Critical Perspectives

Criticism and critique keep research from becoming self-serving and introvert, and it is an important part of research capacity to develop and sustain the ability to critically examine one's own research and that of others. It is good research practice to question the assumptions, the methodology, and the results of research, and to explore alternative explanations for any given set of findings. By the same token, it is part of any good research training to inculcate these kinds of critical perspectives in the preparation of future researchers.

2. Problems: What are the deficits of university research?

It is a particular challenge to summarize those many contributions that addressed the problems that research at universities faces in many parts of the world. Some of those problems originate in the universities themselves, but the more serious and most intractable ones tend to arise from the universities' environment. It would therefore be difficult to arrive at an adequate analysis of the deficits of university research without taking into account a wide range of factors external to the university. Here again, it is important to point out the many ways in which the different facets of this diagnostic are interrelated; clearly, to give but one example, the international migration of research talent ("brain drain") has a great deal to do with deficits in research infrastructure and financial stability, just as the incidence of institutional conflict in higher education is but one aspect of the changing role of the state.

2.1 The Changing Role of the State

Most notable among these external factors is what several contributions have described as the changing role of the state with regard to higher education and research. While there are still a considerable number of societies, notably in the richer part of the world, where the state plays a rather active role in sustaining and, indeed, advancing higher education and research, there seems to be a growing tendency for the state to yield both its regulatory and its supportive functions to the market and the private sector. This places higher education and, especially, university research into a new kind of jeopardy and at the mercy of forces that are not necessarily interested in the advancement of open and autonomous research.

2.2 Crises of Identity

The choice of research agendas and research priorities is one of the most significant aspects of the autonomy of researchers and research institutions. It is here that, particularly in the South of the international system, autonomy is most severely compromised by the – conscious or semi-conscious, voluntary or involuntary – adoption of external research agendas that reflect other societies' knowledge priorities and that tend to marginalize the knowledge needs of the institution's own society. This uneven struggle between autochthonous and extraneous research priorities (which is often accompanied by similarly intense struggles between different theoretical frameworks, paradigms and methodologies) appears to lie at the very heart of what was frequently described as a veritable crisis of identity in higher education in much of the poorer part of the world.

2.3 Migration of Talent

There is, and has been for some time, a conspicuous amount of migration of scholarly talent, most of it from the poorer to the richer parts of the world system, and very much to the benefit of the latter. While there has been a certain degree of re-migration in recent years (e.g., from North America to India), the overall effect on the research capacity of poorer nations has been distinctly unfavorable, especially since there often is a kind of chain reaction where one migrant is followed by his or her students, etc. It is difficult to see how the sustained development of research capacity in the developing world can be achieved without changing the pattern of migration to a significant degree in the direction of providing scholars with meaningful options for staying. Appeals to national loyalty and solidarity will remain relatively ineffective, however, unless reasonably attractive research opportunities are being provided.

2.4 Inadequate Infrastructures

Among the most significant deficits motivating promising young scholars to emigrate is the inadequacy of research infrastructures in many universities. To be expected to perform quality research with inadequate or outdated equipment, uneven or non-existent library holdings, and limited access to digital information and data bases continues to be a source of great frustration among researchers especially in the South. Even though by now the inadequacy of libraries could technically be overcome through digital access, the cost of site licenses for online journals and access to online data bases proves prohibitive for many universities in poor countries.

2.5 Lack of Financial Stability

Lack of funding for research is seemingly ubiquitous, but what is particularly detrimental to sustaining good research is the lack of predictability of such funding as there is. Good research in most areas of knowledge requires time and an effort over the long haul; not knowing whether funds that are available now will be available a year or two from now stifles precisely the kind of research that provides solid and well-founded results from sustained inquiry. Furthermore, funding that only covers the direct cost of research is particularly hazardous for universities in poor countries whose limited regular budgets are not sufficient to provide adequate infrastructures and support services for research.

2.6 Isolation of Scholars

Time and again, and often with a great deal of emotional intensity, the Colloquium witnessed testimony of the tremendous isolation of scholars in the world's poorer countries. This isolation has several dimensions, all very detrimental to scholarly productivity and success: isolation from relevant scholarship in other parts of the world, the lack of a critical mass of interested and interesting colleagues in one's own university or even country, and most of all isolation from a sustained interaction with a lively broader research community. Gatherings like the Colloquium were given high marks as a rare opportunity for meeting colleagues with similar interests, for exchanging experiences and research findings, and for keeping abreast of important developments in the field.

2.7 Gender Gap

Even though the attendance at the Colloquium was remarkably well balanced in terms of gender distribution, the same cannot be said for the world of research on the ground. There, women's access to, and success in, research careers still reflects rather uneven chances and the effects of traditional views of the role of men and women in academia. This clearly varies by region, cultural context, and academic discipline, but on the whole a great deal remains to be done – in poor as well as rich countries – to provide women with equal opportunities in research careers.

2.8 Institutional Conflict

A final concern that loomed large in the Colloquium's discussions was the effect on research of a growing trend of institutional conflict and violence at universities in many parts of the world. Often these conflicts have a proxy quality in that broader societal and political conflicts get projected onto university campuses, often seriously disrupting both teaching and research. What has been said before about the need to sustain research over time is particularly pertinent here: the kinds of discontinuities that get introduced into the life of universities through conflict and violence are particularly serious and consequential as far as research is concerned.

3. Agenda: What challenges lie ahead?

The analysis of what good research needs and what kinds of problems research faces at the world's universities lead the participants in the Colloquium's discussions to a considerable number of suggestions and proposals for further action. The principal items on this agenda for further developing research capacity at universities are summarized in this section of our report. As the problems to which this agenda is designed to respond have been described in some detail in the previous sections, the various items on this agenda will be self-explanatory and are only briefly annotated.

3.1 Building Research Capacity

This item is intentionally placed at the top of the agenda: Without a substantial effort of building sustainable research capacity – in the encompassing sense described in the section on the "ingredients" – there is little hope for overcoming the crisis that characterizes the prospects for research at many universities, especially for many of the

poorer countries. This effort will require the joint mobilisation of national and international energies; while it has many facets, it will need to concentrate on the preparation and the support of capable research personnel.

3.2 Rethinking the Research Agenda

At the same time, there is a substantive side to the agenda for mobilizing research. What is needed here is a major effort to rethink the priorities for the kinds of research that universities should focus on. This is obviously a task that will lead to different results for different countries, regions, and universities, but it is instructive to look at a sample of the issues that, during the Colloquium, were identified as being in particular need of scholarly attention:

- The connection between research and the social project of development
- The importance of creating and sustaining autochthonous knowledge (as distinct from externally defined knowledge)
- The need for a critical examination of the notion of research “relevance”, and the implications of such an examination for defining research criteria
- The importance of identifying the role of language in research, particularly in view of the de facto emergence of English as a research lingua franca

3.3 Develop Research on Research

It may sound strange, but the Colloquium has shown again that one of the least researched subjects is research: we have very little secure and valid knowledge about the conditions under which research is conducted, the factors that make for good or bad research, the way incentives and disincentives work in research, etc. One of the urgent needs for the future – and one for which the Forum appears to be particularly well suited – is therefore a much more systematic program of rigorous research on research. Among the issues that were identified as being particularly in need of further inquiry were the following:

- Understanding the political dynamics of research systems, both within institutions of higher education and throughout their social, economic and political environment
- Analyzing the contribution that the entire educational system, including the schools, can and should make to the building of research capacity
- Disentangling the complex relationship between autonomy, accountability, and transparency in the world of research, and inquiring into the effects of research assessment on faculty motivation, independence, and performance (what one speaker called “the control of academic productivity”)

3.4 Rethinking the Criteria for Research Quality

There has been substantial criticism at the Colloquium of the notion that there can be a one-dimensional set of criteria for assessing the quality of research regardless of where, by whom, and on what subject it was performed. Instead, there appears to be a need dealing with the assessment of research quality in much more differentiated ways, taking into account the research setting, the kinds of research questions asked, the methodological orientation, and the utilisation of research findings. This is not to argue

for rank relativism in assessing research, but recognizes that research quality is not entirely independent of its relevance and utility.

3.5 Creating Centres of Leadership and Excellence

Even under the best of circumstances, not all universities around the world can be centres of excellence in research. Such centres are necessary, however, and need to be distributed much more equitably than is currently the case. There is thus a strong argument for a future agenda that seeks to identify, support and strengthen institutional settings that have the potential for becoming centres of research leadership and excellence at both the national and the regional level. These centres are to serve both as models for what research-based universities can accomplish and as resource centres for advice and assistance to other institutions.

3.6 Fostering Research Cooperation

In a related sense, there appears to be a great need for research cooperation among universities both nationally and across borders. Much of this need is the result of limited resources at any one institution and of the economics of complementarity, but there is also a feeling that this kind of cooperation will broaden the perspectives of individual researchers, encourage fresh approaches to research, and overcome the isolation of researchers. There is a strong case for cooperation among universities within the South, but also a very open and favorable perspective on cooperation between Southern and Northern institutions, provided it works in both directions.

3.7 Building Institutional Networks

While inter-institutional cooperation on specific research projects is highly desirable and desired, there is an even stronger case for sustained cooperation in the form of institutional networks with dependable resource bases, a division of research labour based on the strength of particular units of the network, and appropriate governance mechanisms. Such networks will allow cooperation not only on specific projects, but will facilitate mounting and sustaining medium-term research programs with clear priorities.

3.8 Research Training

The key to strengthening the personnel component of research capacity is clearly adequate research training, and there was strong support at the Colloquium for major investments in establishing, strengthening, and sustaining training programs for young researchers at universities, especially in the South, including appropriate scholarship programs. Only training programs of high quality and with access to actual research opportunities during training will effectively obviate the need for young researchers from the South to seek training in the North, which often becomes the first stage of talent migration. Realistically, however, it is recognized that there will continue to be a need for highly specialized research training in the North as well, and it is important that qualified researchers from the South have access to these training opportunities.

3.9 Publicizing Good Research Practice

Good research and good research practice can have a powerful impact on the overall quality of the research enterprise, but only if people know about them. There is thus a

case for making good practice in university research much better known nationally, but especially internationally. Here again, an institution like the Forum is seen as having a unique opportunity to affect research quality through the exchange and dissemination of information on particularly successful, particularly innovative research and research training programs.

3.10 Enhancing Public Support for Research

In many societies, North as well as South, the appreciation by the general public of the vital role of knowledge and research in the improvement of social and economic life leaves a great deal to be desired. If research is to obtain the public as well as private resources that it obviously needs (and that may have to be taken from other worthwhile pursuits), this can only be achieved on the basis of a strong public belief in the essential function of research and research-based universities. This belief needs to be cultivated and nurtured on a sustained basis, and both researchers themselves and the media have a particularly important role to play in this process of making research and its relevance more transparent.

3.11 Equalizing Digital Access

The wide-ranging digital availability of huge quantities of information, data, and literature is one of the most striking changes in the technological environment in which research and universities operate. The problem, however, continues to be access to what is technically available, and it is here that a significant cleavage exists between richer and poorer institutions. Major and urgent changes in the legal and financial arrangements for the use of online data and other research information are needed to make this wealth available to researchers who are already handicapped by the lack of adequate library resources and other infrastructure.

3.12 From “brain drain” to “brain gain”

It was encouraging to see how, on several occasions, the Colloquium refused to accept the migration of scholarly talent from the South to the North as inevitable. In addition to providing more attractive conditions for researchers in the South, there were a number of suggestions and, indeed, examples where cooperative research ventures with the involvement of both Northern and Southern institutions had resulted in reversing some of the trends of talent migration, thus turning “brain drain” into “brain gain”.

B. Research Productivity (Sarah Guri- Rosenblit)

This section of the report seeks to highlight the main points raised in the relevant plenary sessions and in the parallel discussions on research productivity through a conceptual framework of seven pairs of contrasting trends. Living in a very complicated world, we have to adjust ourselves to operate with contradictory and contrasting trends. We do not normally have the privilege of choosing either one or the other, but rather have to find a rather delicate and subtle balance between various trends. These conceptual pairs can also be used as a tool for cross-country or cross-institutional comparison by offering a continuum along which an institution or a research system can be placed.

1. Globalisation Trends – National Context

Considering that we cannot eliminate globalisation trends, even if we do not like many of their results, we have to adjust to them and see what can be gained from them, while at the same time taking care of the national context. These globalisation trends, while facilitating networking, collaboration, and flexibility between systems, also threaten the stability, security and identity of universities, as the keynote address of Imanol Ordorika has shown. Often this results in the marketisation of higher education, in decreased public trust in higher education and in greater pressure for accountability. In the wake of these trends, there is also an emerging super model of productivity of world class universities, reflected in many league tables and a special sub-set of studies comparing different league tables, with some countries and some institutions already headhunting for Nobel Prize laureates because they will automatically improve their standing in some of the rankings.

Ordorika himself provides a good example of a most successful and independent product of a super league research university like Stanford. He chose to pursue his graduate studies not in Mexico, but in Stanford and then returned to Mexico, using the skills he acquired for a critical analysis of globalisation in higher education and research. This is one of the examples for what Arthur Bienenstock described as building the capacity of faculty members in other countries.

The issue of the role of the super league research university brings to mind an anecdotal story about a meeting between John Rockefeller and Charles William Eliot, one of the legendary presidents of Harvard University (1869-1909). When Rockefeller decided he wanted to establish the University of Chicago in the 1880s, he approached Eliot and asked him how he was going to build a university like Harvard. Eliot responded that one needs, first, at least fifty million dollars, and secondly, two hundred years. So John Rockefeller went ahead establishing the University of Chicago; it took him a little more than fifty million dollars and a little less than two hundred years, but the point of the story is that good universities do not get created in one day nor in one year, nor even in ten years.

On the other side of this pair of contrasting trends stand the demands for more attention to the national context of higher education and research, a theme to which, among others, the keynote address of H. A. Zakri made some very significant contributions. Some examples will exemplify how important the linkage between national cultures and academic cultures is. Looking at the idea of the research university from a historical perspective, it is less than two hundred years that Wilhelm von Humboldt's idea of a research university was initiated in Germany (at the Berlin university that now carries his name) and exported to all over the world, including the United States. But the very special cultural and social setting of the United States gave it a different kind of direction and its own identity. By now, most of the leading world class universities are in the United States, not in Germany, and Germany is now looking to the United States for the reform and improvement of its universities.

There is, as we have once again seen in this Colloquium, a huge difference between research universities in the North and the South. But that is not to say that only the North is producing significant research products and advancing human knowledge, but we have also heard of many leading research projects in developing countries. We have heard of Chile's accomplishments in astronomy, India's achievements in computer

science and mathematics, China's work in seismology, efforts in Africa to establish national R&D centres of excellence, and many other examples that would go beyond the scope of this report. There is important research being done in developing countries, at different levels of infrastructure and capacity, but with significant results, even if not all of them can become world class universities.

2. Applied Research – Basic Research

Most of the presentations at this Colloquium put a great deal of emphasis on the importance of applied research from different perspectives: systems of innovation, networks of excellence, science and technology, the involvement of business in research, etc. The presentation on China by Xue Lan reported on the triple helix of the connection between industry, government and universities.; fifty per cent of research in China is sponsored by industry and the corporate world, which obviously has an impact on the content of research. Reports on India emphasized the fact that there, most of the research is done in the applied field. The presentation of Abdul Razak and Ramli Mohamed on Malaysia outlined five generations of research, over which the head of the traditional research pyramid was turned upside down. The first generation of "ivory tower", or pure and basic research, had led to a fifth generation of an innovative kind of research in which products are produced and money earned.

By comparison, very little was said in this conference on basic research and on the fact that basic research is deteriorating in many countries. In Israel from year to year, fewer students apply to physics, maths and similar subjects. Most are interested in business administration, law and computer science. Fortunately for the international research community at large, the leading research universities are making a special effort to maintain their contribution to basic research.

3. Accountability – Increased Autonomy

There is considerable contradiction in the position which many governments are taking. On the one hand, they are retreating from their responsibility for sustaining universities and university research and give the universities more autonomy to be entrepreneurial and to define their own research policy. On the other hand there is a great deal of pressure for greater accountability on the universities' performance, as reflected in ever new "excellence indicators" and in the emergence of new evaluation bureaucracies. In the course of the discussion, universities were frequently admonished to make more of the opportunities presented to them by being given more freedom by the government, especially in terms of defining their own research priorities. Even under conditions of deteriorating conditions and decreasing resources, it was said, universities should seek to benefit from the greater autonomy they now have. On the other hand, there was strong opposition to using "autonomy" to justify burdening the universities with the full impact of shrinking resources.

4. Competition – Collaboration

Another contradiction results from the fact that universities are asked to work in a conflicting world. On the one hand, they are told to thrive and develop through

competition. On the other hand, they are being told to collaborate with one another. This is perhaps more of a contrast than of a conflict. It is inevitable that, in the world of higher education as elsewhere, there is competition for scarce resources, be it research funding, good faculty or good students. Perhaps this is why, as was reported from some African countries, it is often difficult to convince scholars to collaborate with other scholars, and one should not underestimate those difficulties. At the same time, organisations like the Forum are indispensable vehicles for bringing about and sustaining more cooperation – both North-South and South-South – in research and knowledge sharing, especially among institutions that are relatively isolated from the international research community. One particular form of cooperation, that across disciplinary boundaries, received a great deal of support in the Colloquium as well; it was observed that research is moving at an accelerated pace from disciplinary to interdisciplinary modes. Research cooperation with the business sector was also mentioned as being in need of further development.

5. Public Sector – Private Sector

The public sector in higher education is almost everywhere characterized by a great deal of diversification and by diminished funding. The effects of these developments on university research vary. While the decrease in financial resources is, as has been shown elsewhere in this report, a major threat to both the quality and the quantity of research, diversification does lead in some countries to a division of labour. This results in new concentrations of research excellence, coexisting with other institutions of higher education that are primarily geared to teaching.

The private sector in higher education is even more dramatically diversified. It consists, on the one hand, of the highly research-intensive super league private universities in the United States and a few other countries and, on the other hand, of a growing number of for-profit institutions, most of which are not doing research at all. In some countries, primarily the successor states of the former Soviet Union, the latter are playing a most important role in higher education, and have a considerable impact, for better or worse, on the quality of a growing number of graduates.

6. English – Other Languages

There is little doubt that, some dissenting voices at the Colloquium notwithstanding, English has in fact become the lingua franca of the international research world. Researchers who want their publications to be read, who want the results of their research to be heard, who want to participate in the scholarly discourse in this globalized world, need to do so (at least also) in English. This does mean that English-speaking countries in the North as well as the South are at an advantage because of their command of English. Like many other countries, Israel has had to deal with this issue over the course of its history, first arguing over German vs. Hebrew and now arguing over teaching more and more in English.

At the same time, this by no means relegates other languages to the realm of insignificance as far as research communication is concerned. A number of examples were mentioned in the discussions where research findings get communicated and debated in more than one language, and where both local languages and international

languages other than English provide access to users of knowledge that are not as easily reached by communications in English.

7. Intellectual Property – Intellectual Philanthropy

A great deal was said in the course of this Colloquium about how important it is in both the developed and developing world to develop and register patents and to abide by copyright regulations. What was less frequently mentioned was the nature of higher education as a public good and, in that connection, the issues of open source and open library. Clearly, more open access to sources of scholarly information, libraries, and software codes would tremendously benefit especially research in those countries that suffer from severe shortages in more conventional research facilities. To date, as was pointed out several times, this access is still prohibitively expensive. Organisations like OECD, the World Bank and UNESCO, but also companies involved in producing the appropriate technology, are being called upon to make their influence felt in the direction of making these vital resources for research more openly and equitably available.

C. Research Relevance and Utility (Akilagpa Sawyerr)

The report on this theme takes the form of a number of more general reflections on the Colloquium which are presented in the form of observations and/or questions prompted by the contributions and discussions in the various sessions.

1. The Importance of Context

Context has been mentioned frequently as an important determinant of research, but it seems important not simply to recognize context and walk away from it, but to focus more on the implications of different kinds of context. In doing this, it helps to look at extremes – for example, Stanford University and the University of Ghana. It becomes immediately clear that the context in which these two institutions operate and do research is dramatically different, and no useful purpose is served by denying or disregarding that difference. One conclusion to be drawn from acknowledging that kind of difference in context is the need to talk about different functions of research.

2. Different Functions and Criteria of Research

While all societies have a need for knowledge, there are differences in the functions that university research can serve. Universities such as Stanford that are much more generously endowed and equipped may be able to serve a broader range of functions in a global context, even beyond the needs of their particular environment and society; universities like the University of Ghana need to concentrate first and foremost on the present and future knowledge needs of their own communities. This difference in function is to be kept in mind as one looks at global developments in higher education and research, and at league tables and similar rankings. Relevance and utility of research have to be seen and judged with these distinctions in mind, and are not amenable to one-dimensional rankings.

3. Local and Global Sources of Knowledge

At the same time, communities need and deserve the most relevant knowledge, regardless of its origin. Even with limited means at their disposal, universities are thus under an obligation to seek out both local and global knowledge to the extent that it serves the knowledge needs of the local community. While in many institutions in the South the institutional research agenda is determined by local knowledge needs, in dealing with this agenda both local and global insights need to be drawn upon. An important aspect of the capacity of local universities is therefore their ability to draw as effectively as possible on the global pool of knowledge that is the heritage and property of all mankind. Of particular significance is the ability to "customize global knowledge" for local needs. Many examples were given during the Colloquium: the green revolution, the development of the ORS, injectable contraceptives, the case of Chaga's disease, and many others.

4. Research and Poverty Alleviation

There is a widespread assumption that a direct linkage exists between good research and the alleviation of poverty. As some of our discussions have shown, the nature of this relationship deserves some further scrutiny. Indeed, there is a great deal of evidence that the relationship, to the extent it exists at all, is rather indirect in the sense that good research tends to affect such things as the improvement of nutrition or agricultural production which then, in their turn and under favorable policy conditions, will contribute to the alleviation of poverty. The lesson here is to tread more carefully in inferring immediate causal relations, and to look more closely at the sometimes indirect nature of such relationships.

5. Rankings, Globalisation, and Relevance

The fascination of all universities with league tables and rankings is as understandable as it is problematic. Clearly, the international political economy of higher education is such that certain universities are, by virtue of their location, much more likely to show up on these tables than others. A very important question against this background is thus why such rankings should matter, and whether they are valid instruments for assisting universities in the assessment of their own utility. How can universities, in other words, reconcile the often conflicting mandates of international competitiveness and of meeting its obligations to the knowledge needs of the local community? In case of irreconcilable conflict, which should take precedence: looking to international competitiveness or meeting local knowledge needs? This question is important not only for universities, but also for those agencies that fund university research; it is important that they, as well, recognize this conflict and the need for universities to balance these conflicting expectations.

Faced with this dilemma, it is worth considering much more seriously whether there should not and could not be alternative kinds of ranking that take more explicitly into account the degree to which universities and their research programs serve the knowledge needs of their local communities and societies, without necessarily compromising the standards of what is internationally considered good research.

6. Creating Ownership in Research

Time and time again, contributors to the Colloquium were critical of the distance between the research community and the people whose lives and well-being research is ultimately supposed to serve. This distance not only lies at the heart of a widespread lack of public support for research and its cost, it also contributes to a situation in which much research is oblivious to the true knowledge needs of a society. There is thus ample reason for seeking ways to bring people closer to research and researchers, to make research and both its costs and its benefits more transparent, and to create genuine ownership in research on the part of a broader public. Both research and society would be the beneficiaries.

D. General Conclusions (Hans N. Weiler)

In reflecting on the rich and varied results of the Colloquium's discussions, a number of general observations on the principal theme of the Colloquium – universities as centres of research and knowledge creation – stand out as being in particular need of attention and further action. In this final section of the report, these observations are being summarized under the heading of four principal theses:

- Research in higher education is worldwide in a precarious situation,
- There are major cleavages in the world of research and higher education,
- An important agenda of key issues lies ahead, and
- The Forum on Higher Education, Research and Knowledge can play a critical role in pursuing this agenda.

1. The Precarious Nature of Research

The Colloquium provided ample evidence for the fact that research at universities is, from a worldwide perspective, an endangered species indeed, although to different degrees and for different reasons in the North and the South. Universities, especially their teaching, service, and knowledge transfer functions, but also their societies suffer from the absence, weakness, and irrelevance of research; knowledge is too critical and too precious an element in development and human well-being for its systematic nurturing through research being dispensable. In this context, basic research is particularly vulnerable because of its comparatively high cost and its lack of immediately demonstrable utility.

2. Major Cleavages

It should be equally clear that when we talk about the world of research, we are not talking about something that is made of one cloth. The world of research as this Colloquium has portrayed it is a world of deep and widening cleavages, and one would nurture an illusion if one were to disregard or disparage the depth of these cleavages. The principal cleavages that the Colloquium has highlighted have to do with

- different research capacities,

- different research agendas,
- different research contexts,
- different research criteria,
- different research climates, and
- different research partnerships.

The Colloquium has provided a great deal of evidence for the existence of these cleavages, but has also, in a more encouraging vein, shown a number of interesting examples of how some of these cleavages can be moderated and even overcome. At the same time, it has demonstrated that many of these differences – such as the differences in research agendas and research criteria – contribute significantly to the richness and variety of the world of research and knowledge.

3. Priorities for Looking Ahead

As one looks ahead from this Colloquium, a large and almost overwhelming number of tasks awaits those concerned with the development and improvement of research and knowledge generation. Four areas of action do appear, however, to have a particular claim on priority:

3.1 Networking, cooperation, clustering.

Given both the scarcity of resources and the considerable degree of fragmentation and dispersion in the world of research, sharing and cooperation become imperative mandates for the further development of research. Resources, facilities, and people can and should be brought together in research pools where labour can be divided and limited resources go farther; modern information and communication technology makes such pooling more feasible than it ever was. Competition and cooperation, as a previous section of this report has pointed out, are not mutually exclusive; indeed, becoming and remaining competitive in the world of research requires cooperation.

3.2 Building research capacity

It is probably no accident that, in this summary report, the section on research capacity has turned out to be considerably longer than those on the other two themes of the Colloquium. Building and sustaining research capacity – in the encompassing sense described earlier in this report – remains the key to ensuring a competent and lively research program at our universities. Given the particularly serious deficits of research capacity in many universities in the South, it will not be possible to accomplish this task without a major, but disinterested involvement of the research community in the North.

3.3 Criteria for “good” research

There is an urgent need for a critical discourse on what we mean by “good” research. The fact that there is no single yardstick for assessing the quality of research across all disciplines, regions, and cultures does not make the question of research quality irrelevant; indeed, it makes it all the more important to place the question of appropriate criteria for assessing the quality of research on the agenda wherever research is being conducted. There certainly are elements that all serious research activities have in common; it is hard to conceive of good research, for example, without decent evidence

and without an explicit, transparent set of methodological ground rules. Beyond that, however, different purposes, different kinds, different traditions of research do need to examine critically their own criteria. The process of communicating about these reflections on criteria across the international world of research should be one of the most exciting chapters of future research cooperation.

3.4 The new politics of research

Already the Forum's first Colloquium in 2004[2] brought out strong evidence that when we talk about research and knowledge, we talk about a profoundly political issue that has to do with the allocation of values and resources, the definition of meaning, and the determinants of power. This Colloquium has developed this important discussion further and provided new indications that we are not doing ourselves a favor by denying the political nature of knowledge and the profoundly political quality of the process of knowledge production.

But there is a further dimension of the politics of knowledge that this Colloquium has highlighted: the need for what one could call a political culture of research support. There was clearly no need to persuade the participants in the Colloquium of the importance of support for research, but it is a very different story outside that select group. Sustained support for research has something to do with a society's norms and priorities, and it is here that a political struggle for the central role of research and knowledge for a society's future will have to be fought.

4. The Role of the Forum

This Colloquium has shown that the world of research owes a debt of gratitude to the Forum on Higher Education, Research, and Knowledge and to the institutions and the people who sustain its work, notably the Government of Sweden. The Colloquium has also shown, however, that the work has only just begun, and that a great deal more remains to be accomplished. Among the many things that need to be done, some are such that they could be done particularly well by the Forum, possibly better than by any other institution.

This report will conclude with briefly describing five such tasks where the Forum appears to have such a comparative advantage and should seriously consider playing a particularly active role:

4.1 Help overcome isolation

As this Colloquium has shown, the Forum does provide an excellent instrument for overcoming or at least moderating one of the major concerns of researchers in many parts of the world, notably the South: their isolation and, indeed, loneliness. Few international organisations have the reach and, by now, the reputation of the Forum for bringing together people not only from very different parts of the world, but also from very different institutional contexts: universities, research institutions, governments, NGOs. This very valuable role needs to be pursued and further strengthened – at the

[2] Insert full reference for volume on 2004 Colloquium, Guy Neave ed.

regional, but especially at the international level where regional experiences can be exchanged and assessed.

4.2 Foster research cooperation

By the same token, the Forum could and should become more of a catalyst in fostering and supporting research cooperation across national and regional boundaries, South-South as well as South-North; the need for such cooperation has been amply documented elsewhere in this report. It should be understood that it is the researchers and research programs that need to do the cooperating, but the Forum could very well serve as an initiator and supporter of such cooperative ventures, joint projects or research networks. And it should not refrain from bringing its experience and expertise to bear upon assessing the success of such ventures, including making suggestions for their further improvement.

4.3 Support research on research

Our lack of knowledge about, and understanding of, the conditions under which research takes place around the world remains an important handicap on the way to broadening and improving research. Research on research is, as we have shown in this report, an important priority for the years to come. While the Forum is not in a position to undertake this kind of research, it should make stimulating, supporting, and evaluating it one of its top priorities.

4.4 Publicize good research practice

Making best practice known is one of the most effective instruments of improving practice, and that certainly applies to the world of research as well. There are, as this Colloquium has once again demonstrated, excellent examples of good research practice in all parts of the world, South as well as North, and the Forum would be in an excellent position to gather, organize, and disseminate them effectively and on a sustained basis; websites, blogs, electronic newsletters etc. could be helpful instruments for such an initiative.

4.5 Become a catalyst for research training

Research training will and must remain the responsibility of research-based universities and their graduate programs, but the Forum could make a tremendous difference as the engine behind a major expansion and improvement of research training, especially for researchers from the South. This would require material and financial support for select scholarships and other training cost (including possibly a major fundraising initiative among donors), but could also include the very useful function of a clearing house where information on particularly promising approaches to the training of researchers could be assembled and disseminated.