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Social Policy and Poverty Team**

Meeting Report

Ad Hoc Experts Group Meeting on 'Reforms in Higher Education and the Use of Information Technology in Africa'

Nairobi, 19th – 22nd November 2001

December 29, 2001
Addis Ababa, Ethiopia

List of Abbreviations

ADB	African Development Bank
AIDS	Acquired Immune Deficiency Syndrome
AISI	African Information Society Initiative
AUF	Agence universitaire de la francophonie
AVU	African Virtual University
ECA	Economic Commission for Africa
HE	Higher Education
HEI	Higher Education Institution
HEIs	Higher Education Institutions
HIV	Human Immuno-deficiency Virus
IT	Information and Communication Technology
IT	Information Technology
OAU	Organization of African Unity
OIF	Organization internationale de la francophonie
NEPAD	New Partnership for African Development
NICI	National Information and Communication Infrastructure
SP&PT	Social Policy and Poverty Team (ECA)
UN	United Nations
USAID	United States Agency for International Development
UNESCO	United Nations Educational, Scientific, and Cultural Organization
UNESCO-BREDA	UNESCO Regional Office for Education in Africa
UNESCO-IICBA	UNESCO International Institute for Capacity Building in Africa
UNESCO-AD	UNESCO Africa Department
UNDP	United Nations Development Programme
UNDP-RBA	UNDP Regional Bureau for Africa
US	United States of America

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I. Background

1. The Economic Commission (ECA), along with the UNESCO Regional Office for Education in Africa organized an Ad hoc Expert Group Meeting on “Reforms in Higher Education and the Use of Information Technology in Africa”. Participants were drawn from Africa, as well as from UN agencies such as UNESCO and UNDP, the African Development Bank and Africa’s development partners such as the United States Agency for International Development (USAID).

2. Production technologies and products that are knowledge-intensive will characterize the economy of the twenty first century. Comparative advantage of nations in this world no longer resides in natural resource endowments but in knowledge and information used to create knowledge and the direct application of knowledge in the production process. To compete in the new economy, African countries must adapt and respond to the new reality of a knowledge-based economy. Africa’s more than 130 universities, along with the many post-secondary institutions, will increasingly be called upon to generate the new ideas, incubate the new technologies, and produce the skilled manpower that this new economy requires. The new economy has implications, albeit still not fully understood, for African higher education institutions, the programmes they offer, their research, as well as, all other services they provide to society.

3. It is widely recognized that the ability of African HE institutions to respond to the needs of this increasingly knowledge-based economy is limited. Enrollment capacity in African HEIs has not kept up with the demand for HE. Africa has the lowest tertiary education enrolment rate of all regions of the world. One of the reasons for this is the constraint imposed by physical capacity. The increase in tertiary education enrolment in the immediate post-independence years in Africa was fuelled, in part, by the expansion of the tertiary education system. Resource constraints today limit the ability of many African countries to increase tertiary education enrolment either by expanding existing institutions or by building new ones. The use of information technology could help African higher education mitigate the capacity constraint and perhaps reduce unit cost.

4. For the better part of the past two decades, African countries have invested significantly in primary education, and to some extent, in secondary education. The emphasis on primary education was driven by two arguments. First, many studies showed significant growth effects of primary and secondary education investment. Second, tertiary education was widely perceived to be a private good. The experience of East Asia suggested that the effect of primary and secondary education on growth and other social indicators was quite significant. While the arguments in favour of increased investment in primary and secondary education are strong, they do not obviate the need to increase investments in tertiary education. The knowledge demand of a globalizing world cannot be met by secondary and primary education. Many African countries, recognizing this, have begun to reconsider their higher education policies. Some are adopting reforms to increase access to higher education. Information technology has been proposed as part of a solution. How this can be done and what reforms are necessary were the focus of the Ad hoc Expert Meeting

II. Objectives and expected results of the meeting

5. This Meeting was designed to facilitate exchange of information and ideas on higher education and the use of information technology in Africa, the reforms already undertaken or that need to be undertaken to improve its competitiveness and to make it more responsive to changing labour market requirements. The objectives of the Meeting consisted of the general and the specific:

General

6. The general objectives of the meeting were to:

- Review the state of African Higher Education at the beginning of the 21st century and against the backdrop of the increasing knowledge-intensity of the global economy;
- Explore ways through which African Higher Education can be made to be more responsive to and adaptable to the new reality;
- Examine the feasibility of and what role information technology can play in the delivery of higher education and in access to higher education resources worldwide and what challenges arise from it;
- Use of it in university governance and research;
- Examine what reforms are necessary to enable information technology to become a strategic variable in the African Higher Education sector;
- Examine what new governance competencies are required.

Specific

7. The specific objectives of the meeting were to:

- Discuss best practices and to propose recommendations for the consideration of member states considering reform of their HE sector;
- Build a constituency for higher education reform on the continent.

8. The expected results of the meeting were as follows:

- Shared appreciation of the state of higher education in Africa.
- Common understanding of the importance of the higher education sector in a knowledge-driven economy
- Consensus on the core interventions needed to reposition THE sub-sector as an engine of growth and social development;
- Appreciation of the need to build a constituency for HE reform and support on the continent.

III. Participation

9. Forty-five experts participated at the meeting. They consisted of experts from 19 African countries, UNESCO, USAID, UNDP, Organization Internationale de la Francophonie (OIF), Agence Universitaire de la Francophonie (AUF), the African Development Bank (ADB), and the African Virtual University (AVU). Also participating were 5 ECA staff. A complete list of participants along with their affiliations is at Annex 1. Participants critically examined the current state of higher education in Africa, explored the necessity or otherwise of reforms and the role higher education institutions can play in meeting the needs of the knowledge economy and made recommendations.

IV. Opening ceremony

Chair: Neil Butcher

10. Mr. Juma Shabani, Education Specialist, UNESCO Regional Office for Education Africa (BREDA), opened the meeting. He welcomed participants and gave a background on what UNESCO is doing in the area of higher education.

11. Mr. Kasirim Nwuke, Senior Economic Affairs Officer and Team Leader SP&PT, on behalf of the Executive Secretary of the Economic Commission for Africa (ECA), Mr. K.Y. Amoako, welcomed participants to the meeting. He thanked UNESCO and all its agencies (BREDA, IICBA, AND HQ), UNDP and USAID for collaborating with ECA on the meeting.

12. He explained that the meeting was one of the activities that the ECA undertakes in service to member States. The meetings provide a forum for the exchange of ideas on issues critical to the development of the continent and are designed to advance new ideas and generate recommendations that member states can consult as they consider policy options. He drew attention to some of Africa's many development challenges: endemic poverty, poor health outcomes, HIV/AIDS, violent conflicts, and the role education can play in attenuating them.

13. The importance of education is further underscored by the knowledge-driven impetus of globalisation. New job categories requiring new skills appear at a rate never before seen, reflecting the reality that this new global economy is driven not just by knowledge but ALSO BY the ability to generate and use that knowledge. Higher education is vital in this economy. The responsibility for Africa's participation in this economy rests on her more than 130 universities and the many post-secondary institutions. However, their ability to respond to this fast changing world is very limited.

14. Referring to the "New Partnership for African Development" (NEPAD) a new framework for Africa's development adopted by African Heads of State at the OAU Summit in Lusaka, Zambia, in July 2001, Mr. Nwuke emphasized that the realization of NEPAD's goals is contingent upon the thoughtful and rational exploitation of Africa's

abundant human resources. People are the most important resource for development. And education is the key to the optimal employment of this resource in the development process. Evidence abounds that an educated workforce – a high level of human capital - is important for economic growth and development. However, resources for the education sector generally, and he in particular, are severely limited even as the needs have increased. There is the possibility that information technology can help African higher education fulfil its responsibility as a growth and social development factor.

V. Organization of the meeting

15. The three-day meeting was organized as follows: plenary presentations, general discussions on the presentations, group work, and recommendations. Empirical and theoretical economic papers that were presented reflected the multi-disciplinary nature of the meeting. Each of these papers addressed an identified theme and provided context for the discussions that followed. The programme of the meeting is at Annex 2.

A. Plenaries

16. There were four sessions and four papers presented on the first day of the meeting. Mr. Neil Butcher chaired the first two sessions while Mr. Ajaga Nji chaired the last two sessions.

Session 1: Issues in higher education, IT and economic growth

Chair: Neil Butcher

17. In a paper entitled “Issues in Higher Education, IT and Economic Growth” Mr. Kasirim Nwuke of ECA, discussed the issues that frame the analysis of the link between higher education and economic growth and the role that information technology could play. The paper argued that in an increasingly knowledge-based economy, higher education would be the anchor of a broad based poverty alleviation strategy. African countries must engage actively in this new economy. As such, they must investigate the options that increase the contribution of higher education to economic growth and poverty reduction.

18. The paper examined the channels through which higher education contributes to poverty reduction. These include the role of education in the creation of social capital and its impact on the quality and productivity of human resources. In addition, it strengthens the rest of the education system and enhances the diffusion of knowledge. However there are costs to be considered. Hence, accelerating growth and expansion through higher education therefore requires analytical and policy-focus on a number of issues. These are: access, cost, funding, quality assurance, new competition from foreign higher education institutions, curriculum development and intellectual property, academic management, governance and market relevance.

19. In the discussions that followed, experts identified a number of additional issues fettering African higher education. These include the generally low average skill level of not

just the higher education workforce but of the entire labor force and the lack of private sector participation in higher education funding and capacity building. Substantial efficiency are possible if the average education and skill level of the entire labour force is improved. Furthermore, experts acknowledged the constraining effect of the rural/urban and gender divide in access to higher education and information.

20. In the view of many experts, the low level of research and development undertaken by African higher education hampers their ability to contribute substantially to national development. Participants emphasized that higher education institutions should not just train elites but also provide vocational training and participate in capacity building. They also stressed the need to develop policies to encourage research in African universities. Recognizing that financial resources are vitally important if African higher education institutions are to fulfill their potentials, experts further agreed that governments need to inaugurate a new system for funding higher education.

21. Experts also pointed to the methodological problems associated with the calculation of graduation rates. Some argued that the computation of graduation rates would be more meaningful if it is computed on the basis of the number of students admitted *into* a class rather than the number who graduated *in* that class in view of the large number of repeaters. It was pointed out that there was little or no incentive for students to graduate if a) unemployment and underemployment were high, and b) higher education is heavily subsidized. This thus underscores the need for a higher education system that is responsive to labour market needs. Participants offered the view that cooperative education programmes may minimize this problem.

22. Experts agreed that these fetters should, however, not discourage the participation of the region in the digital race. To this effect, experts agreed that education must be seen as an integrated system and a strategic development tool with higher education playing the role of driver. Within higher education itself, experts agreed that there is a need for differentiation to maximize the use of resources as not all HEIs are equally endowed. With respect to IT, experts advised that care must be exercised in the choice of technology and due attention must be paid to the improvement of access, the relevance of the instruction provided, quality, its support for culture, and sustainability. Experts also agreed that it should not only be seen as an instruction delivery vehicle but also as a tool for governance and research. In view of the high fixed cost of IT, experts agreed that regional cooperation is crucial for the realization of the possibilities of IT.

Session 2: On the relationship between education and economic growth

Chair: Neil Butcher

23. At the **second** session of the day, Mr. Oliver Paddison of ECA presented a paper entitled “An Empirical Analysis of the Link between Higher Education and Economic Growth in Africa” in which he and his co-author investigated the effect of education on economic growth using a panel data set of 31 African countries. Individual equations for 5 countries were also estimated. Growth rate was regressed on quantitative measures of education and group dummy variables and period effects to capture country and time effects. The empirical results obtained are mixed, but particularly intuitive. In all the equations, all but three of the education variables - the average number of primary years of

schooling, the tertiary enrolment rate and expenditure on secondary education (as percentage of gross national income)- yielded statistically significant results. While the paper finds a positive and significant relationship between secondary education and economic growth rate, it found no statistically significant relationship between economic growth rate and tertiary education in Africa. Of particular interest is the finding that female secondary education has large and statistically significant effect on economic growth. However, authors admit that these results could be due to methodological problems and suggested that the coefficient estimates obtained from the within group estimation can be regarded as a lower bound. Finally, Mr. Paddison noted that the effects of education are not always easy to capture and that education alongside other variables must be considered in input in growth models.

24. Experts agreed that data problems were a limitation on the depth of the analysis and acknowledged that the results were sensitive to the estimation technique used. Indeed one set of estimates using a more appropriate estimator showed a relatively large, positive and statistically significant effect of tertiary education on economic growth in Africa. Nonetheless, it was recognized that the paper is a useful contribution to the understanding of the issue as it tried to address the question of how different levels of spending and schooling related to growth. Experts expressed the view that the analysis will be enriched if it considered other variables such as brain drain, effects of ethno-linguistic fractionalization within a territory, trade policy, and the use of IT.

Session 3: Higher education in the information age

Chair: Ajaga Nji

25. At this session, Mr. Juma Shabani of UNESCO – BRENDA presented a paper on “Higher Education in the Information Age”. This paper sought to acquaint participants with the activities of UNESCO in the use of IT and education in Africa and achievements so far. He pointed out that UNESCO’s remit includes the analysis of the social, economic and cultural implications of technology. In this respect, UNESCO’s vision of IT was developed through 6 world conferences between 1996-2000. UNESCO is working to assist HES to write or re-write or assess their missions. Acknowledging the potential in and respecting the challenges of Information technology in education, UNESCO is promoting the use of IT, contingent upon the belief that there are excellent opportunities in it for life-long learning. In addition, IT permits networking to enhance collaborative research. On access to and equity within the HE system and the potential contribution of IT to addressing these issues, Mr. Shabani suggested that studies be undertaken to assess the IT needs of society and its potential to contribute to the development of the education system.

26. UNESCO Regional Office for Education in Africa (BRENDA) is implementing the recommendations of these conferences. It is assisting with the development of a strategic plan for Sub-Saharan Africa in the area of teacher training and secondary education through open and distance learning. It has created a multimedia virtual network for the enhancement of the learning and teaching of mathematics, science and technology in secondary schools in Sub-Saharan Africa. In addition, it has instituted UNESCO Chairs and Networks in the area of capacity building and is helping countries to develop programmes in teaching of technology in HE and in distance education. Furthermore, BRENDA has set up a network of primary school teacher training institutions in Senegal,

and is working with countries in the region to develop accreditation and quality assurance programmes.

27. Finally, Mr. Shabani also discussed the peculiar and special needs of HEIs in French-speaking Africa and efforts underway to address them. A special fund has been set up jointly by ADB/UNESCO/World Bank to fund HE reform in 8 countries. It is estimated that the project will cost about US\$500 million. The main task of this fund is the priority development of the Higher Education system and the use of Information technology.

28. Discussing the paper, experts pointed out that HEIs should, in addition to preparing mission statements, also clearly state their short- and long-term objectives. The task of identifying strengths and weaknesses of a system will thus be simplified. Experts also drew attention to the limited expertise in IT. Many academics are neither conversant with nor competent in the use of IT, yet they are the putative interface between students and IT. In this context capacity building is a key factor in the involvement of teachers/professors and much more should be done in this area.

29. Experts emphasized that the degree to which the professoriat are willing to embrace IT depends on the attitude of university administration. There is a need for university administrators to encourage intra/entrepreneurship in this area in order to harness the potentials of IT. In this regard, experts noted with favor, the entrepreneurial and innovative role of private universities in the adoption of efficient managerial techniques and their use of IT. The slow pace of reforms in public tertiary institutions was also noted.

Session 4: A new model for funding higher education

Chair: Ajaga Nji

30. In the fourth and final session of the day, Mr. Apitta presented a paper on “the Rationale for New Education Sector Investment Plan in Uganda”. In the paper, Mr. Apitta discussed some of the factors during Uganda’s Higher Education reform programme. Among these is access to higher education. Uganda, with a gross tertiary enrolment rate of 2%, has one of the lowest tertiary education participation rates in the world. This participation rate is lower than the SSA rate of 3.9%. The country is attempting to improve access by expanding private provision and financing of higher education.

31. Over the past 5 years, the Government of Uganda has granted permission for the establishment of nine private universities. A new education funding mechanism has been introduced in order to advice higher education’s claim on the exchequer and to increase resources available to the sector, the Government of Uganda has created a window for privately sponsored students in government-owned HEIs and commercialized the provision of some non-essential services and activities such as the bookstore and the cafeteria. Other elements of the reform include: curriculum reform (to make HE more relevant to the market), compulsory computer literacy, mainstreaming of HIV/AIDS education in all institutions, and cooperative education.

32. The second day of the meeting concentrated on three clusters of issues: Best Practices in the Use of IT in Higher Education; Challenges to Higher Education Reform in Africa; Innovation in African Higher Education; Challenges to Higher Education Reform in Africa

Session 5: Best practices in the use of it in higher education

Chair: Agatha Gaisie-Nketsiah

33. The four key papers presented at this session were: “A Survey of the State of Higher Education in Africa”, “Successes and Challenges of Higher Education in Asia”, “The Implications of US experience in Information technology in Higher Education in Africa” and “Long Distance Education to deliver Higher Education in Africa: Lessons from South Africa”.

34. The first paper characterized the higher education sub-sector in Africa and reviewed the potential for the use of Information technology to increase the supply of higher education on the continent. Difficulties of access; inadequate financing; inefficiency; private sector participation and curriculum development were identified as main obstacles to successful development of the sector.

35. The second paper examined Korea’s higher education reform experience and explored what lessons African countries can learn therefrom. An important lesson from Korea is the importance of political commitment: If a government views education as a means to national development and supports that position with financial and other resources, real progress can be achieved.

36. The third paper was on what lessons US experience in implementing information technologies in higher education presented to Africa. US successes in introducing IT in higher education and in all sectors of the economy was acknowledged even as caution was expressed about African attempts to copy the America experience *in toto* since circumstances are different in many respects.

37. Finally, the fourth paper examined lessons that could be learnt from South Africa’s long distance education programme. As was pointed out, the impact of Information Technology on higher education has yet to become fully clear as implementation and adoption of such technologies is a lengthy process. Yet, there is a large role that Information Technology can play in changing organizational structures and operations in HEIs as IT makes it increasingly easier for new players to perform roles previously reserved for higher education institutions and to progressively expand their domains of operations. In such situations, competition from private sector provision of education poses a to public institutions. As such public HEIs must be aware of the challenges that they will be facing from outside. It is therefore essential that policy makers adopt flexible policy frameworks in a timely manner rather than create a complicated policy environment that could turn out to be more harmful. Regulation should not strangle the sector; rather, increased simplicity is required to allow both public and private HEIs to flourish.

38. Several points were raised by the discussants. One of the points raised was how best to use First World resources to improve higher education and research in sub-Saharan Africa. The pertinent question, it was argued, was whether an IT-based higher education delivery system is viable in the near term in Africa. This is important in view of the many constraints to IT use in Africa. First, the telephone grid is poor and very unreliable. Second, telephone density is low. Third, computer density in institutions of higher learning as well as in the general population is also low. In addition, African HEIs adopting IT-

based delivery of courses face stiff competition from foreign offshore providers. Besides, the proportion of students, staff, and teachers who have access to the Internet, is low. Finally, the fixed as well as the marginal cost of IT-based courses is high. All of these compel the need for caution in the adoption of IT as a means of delivering higher education in Africa.

39. Participants emphasized the need for academic programmes to be made more responsive to labour market requirements even as they recognized that imperfections in African labour markets were quite significant. Incentives to train trainers in IT use are weak and curricula are poorly developed. Furthermore, there is glaring under-employment and under-utilization of skilled staff, resulting in low job satisfaction. Experts also agreed that it was important to involve the private sector in the reforms, especially with respect to curriculum development. Discussing the East Asian experience, experts acknowledged the success of the Korean economy but expressed very little enthusiasm for adopting the Korean model of higher education reform given that it was informed and driven by circumstances markedly different from those driving higher education reform in Africa.

40. Experts expressed serious concerns about higher education funding and financing. They expressed the view that accurate calculation of the cost-per-graduate, rather than cost per student, could be useful for efforts to improve efficiency. Participants also expressed caution about the transferability of the US experience to Africa and argued for an IT programme that is driven by Africa's needs and experience.

Session 6: Challenges of higher education reform in Africa

Chair: Si-Ahmed El-Khider

41. Four papers were presented in this session. In the first paper entitled "Data for decision in higher education" Tolly Mbwette, discussed the experiences of the University of Dar-es-Salaam in the development of information systems and using IT for teaching and library services. It highlighted the need to ensure high quality of data by carefully managing data collection. Data collection always involves a manual process that could lower the quality of data. Prof. Mbwette's paper underscored the importance of having an IT policy plan and an IT master plan. The need for accurate and timely data for decision making in higher education was further underscored in a paper on "Higher education statistics and policy making in Nigeria" by Mr. Ukeje.

42. The concept of e-learning and networks was introduced in a paper entitled "E-Quality: New Policies and Practices in Higher Education Networks" by Maria Beebe. The paper argued that e-learning systems and networks represent an in-expensive means to offer distant education programmes and to supplement classroom instruction. In the US, e-learning is often a partnership of private-public institutions or even universities for economies of scale. Corporations that provide global certificates, such as Cisco networking academy, are now using it. The challenge in this area is to enforce standards. In the US, accreditation bodies are developing guidelines. There are a few unresolved issues such as whether or not e-learning should, in the main be for-profit or not-for-profit and which among competing e-learning platforms to choose (WEBCT, blackboard or some other).

43. "The response of IT to the challenge of HIV/AIDS in African higher education institutions" was the focus of the paper presented by Mr. Michael Kelly. African

universities have been severely affected by this pandemic, although there is widespread denial in the HE sector. Universities must use IT to collect accurate and timely data on infection and prevalence rates, and HIV/AIDS-related mortality. They must respond dynamically by e.g. creating discussion groups, using the Web for distributing information and using e.g. the radio effectively.

44. On the first paper, experts agonized over how IT would be funded in African higher education institutions. They underscored the need for financing/funding authorities to provide specific budget lines to be provided for IT purchases, serving, and maintenance. Experts suggested that African countries should consider acquiring refurbished computers at reasonable cost as a means of stretching their resources.

45. On the paper on HIV/AIDS in African universities, participants expressed concern over the slow rate of behaviour change among university students. Evidence from a number of countries suggests that prevalence rates are higher among students in institutions of higher learning than in the general population. For example, in South Africa, the prevalence rate is 30% in universities and 35% in Technikons. The consequence of this high rate of prevalence in institutions of higher learning is that these institutions must train and graduate more students in order to cope with losses due to HIV/AIDS.

46. In summary, experts agreed that the challenges in HE reform and the use of IT include: the low quality of data, difficulty of managing organizational culture changes, ensuring open structures, lack of skilled personnel, and the lack of competent software contractors.

Session 7: Innovations in African higher education

Chair: Tolly Mbvette

47. This session discussed innovations in African Higher Education institutions. These innovations are in the areas of the application and employment of IT in general and to improve higher education delivery in particular. Also considered were innovation in funding/financing and the Virtual University.

48. In a paper on “IT Use in African Higher Education”, Mr. Lishan Adam of the Economic Commission for Africa (ECA) examined regional efforts in providing IT infrastructure in higher education in Africa and the role that ECA has played in these efforts. The Commission played a leading role in the setting up of the African Information Society Initiative (AISII), which resulted in the development of various National Information and Communication Infrastructure (NICI). Although compared to other countries connectivity in African countries is not that impressive, it has improved. Awareness of IT on the part of governments is increasing. Although there is noticeable progress in the application of IT in African higher education, IT IS not an integral part of many reform programs. Inter-university and inter-African connectivity is problematic. There are, nonetheless, innovations and initiatives in areas such AS improving teaching and learning, research and analyses and vocational training, and access to job markets that are beginning to bear fruit. However, more initiatives and innovations are needed, especially, in the development of regional frameworks, university connectivity, knowledge exchange, programming for schools and content development. Finally, the paper argued that the

challenge for IT development in Africa is more political than infra-structural and financial although the problem of poor contingent infra-structure such as electricity and telecommunication was recognized.

49. In discussing the paper, experts agreed that very important and fundamental issues in IT and Higher Education have been raised. Participants in particular expressed the view that African higher education should be mindful of exaggerated claims about the possibilities that IT present. Experts further emphasized that IT leaders in Africa should discuss and explore modalities for sharing resources, for collaboration, and for coordinating their programmes. They agreed that the crisis in many African HEIs is a consequence of a number of factors: political instability and associated brain-drain and abroad, student unrest; poor policies; out-dated curricula; inadequate resources; and general lack of focus and interest on Higher Education by international and bilateral funding agencies.

50. The paper by Steven Adei on “Using IT to Improve Higher Education Output and Deliverables in Ghana” examined the role IT can and has played in the accelerated expansion of higher education outputs in Ghana especially against a background of limited resources in the 1970s and 1980s when physical expansion of HEIs was an impossibility. The University of Ghana, Legon and Ghana Institute of Management and Public Administration represent identifiable cases of progress in the use of IT to provide higher education in the country.

51. Higher education funding and finance was taken up in a paper on “Reforming Higher Education through a New Financing Mechanism: The Case of Mozambique” by Arlindo Chilundo. This paper focused on Mozambique’s World Bank–cum-donor funded higher education reform experience and the processes that led to it. Within the context of the reform, Mozambique has revised extant laws and enacted new ones in a drive to improve efficiency, management and administration.

52. Experts raised a number of issues in the discussion that followed. They called for increased funding, attention to infrastructure requirements and national IT and higher education policy framework. They also expressed the need for private sector participation and for greater collaboration within and outside the institutions. In particular, experts emphasized the need for African ownership of the on-going African Virtual University (AVU) project.

53. There were two sessions on the third day of the meeting. The first session, chaired by Mr. Adom Jack was on “New Governance Competencies” while the second, which was chaired by Amb. M. Mekan was focused on “Reform Strategies”. A paper was presented at each of the sessions. Following the presentations, experts broke into groups to deliberate on recommendations and later reassembled in plenary to discuss and accept the recommendations.

Session 8: New governance competencies in higher education

Chair: Adom Jack

54. In a paper entitled “New Governance Competencies in Higher Education” Mr. Themba Mhambi argued that African HE must develop new governance competencies if it

is to respond successfully to the challenges posed by the explosion of IT. By governance, he meant the role of government and institutional managements. Governments formulate macro policies, regulate and monitor the HE sector while institutions are the formulators of micro policies as well as act as implementing agencies. Both governments and institutions must develop competencies in the use and management of IT facilities to advance HE.

55. Governments are involved in the management of HE because it is the most expensive sub-sector of the Education sector. The fiduciary obligation of the state is counterbalanced by the need for academic freedom. This raises a governance challenge – how to manage the relationship between the state as financier of HE and the freedom of HEIs. Evidence from across the continent testifies to the adverse consequences of direct government involvement in the governance of HEIs. The presenter thus felt that state involvement should be minimal. The involvement should be transformational and innovative. However, HEIs need to understand their obligations to the public and to recognize that freedom is not absolute.

56. Good governance competencies will be seen in greater financial support for HEP's, creation of appropriate facilitative structures such as Councils of Higher Education institutions, councils on student needs etc. Government should be understood by HEP's as playing a crucial role at the national level. MIS are crucial in the taking of sound management decisions based on available quality information. HEP's need to review programmes to ensure that public funds are used to provide only relevant programmes, need proper cohort studies with good tracer mechanisms to quantify graduation rates. IT can be used for this. IT systems can be used to trace the use of funds in HEP's. IT programmes that can track and check consonance of research relevance are required to enable proper decision-making. IT governance is a global activity and there are unique challenges in local situations.

57. In the discussion that followed, experts expressed the view that governments have a responsibility to ensure equitable access to HE for all citizens. Quality of education is one aspect of access. Therefore, appropriate structures for ensuring quality need to be set up. This will require the strengthening of staff development and continuing education programmes and the setting up of evaluation procedures. HEIs also need to be granted operational autonomy with regard to financing and revenue policies to encourage efficiency and development of self-sustainability programmes.

58. Experts further pointed out that IT could be used to manage student records, analyze student graduation rates and carry out detailed cohort studies. Experts also pointed to the need to develop competencies in the management of trade unions. It was pointed out that trade unions are especially strong in many parts of the region. Recognizing that MIS can be expensive and ineffective, experts agreed that HEIs may be given either grants/loans to acquire them and that HEIs can probably can set up their own software development units.

59. Experts also were of the view that autonomy and accountability need to be discussed and that there is a need to look at what resources are spent on: student welfare, academic matters. Autonomy, the experts agreed, must be viewed in country context and should take account of national needs. In particular, HEP's must recognize that they are accountable to the public through/via government and to the students as well.

Session 9: Reform strategies

Chair: Amb. M. Makan

60. The second paper of the third day focused on Reform Strategies. Prof. Mohsen Elmahdy Said of Egypt presented a paper that discussed the on-going reforms of the Egyptian Higher Education Sector. Egypt has identified three different time frames: a short run (5 years) span, a medium run span (10 years) and a long run span (15 years). IT is considered a national priority along with education and health in Egypt. The country has started manufacturing/assembling cheap computers locally through government-owned firms and through license agreement with Korea. The computers are made available to the entire population, to governmental organizations, and particularly to students, and whose cost can be repaid over a longer period of time. To reduce IT costs even further, special agreements have been made with major software companies to supply software and certified programmes at considerably reduced rates.

61. IT is of such strategic importance that a new Ministry, the Ministry for Information and Communication Technology, was created in 2000 to oversee the development of the sector. Information Technology Institutes have been established and ICT specializations have been introduced in Universities, Higher and Middle Technical Institutes to train teaching and technical staff to supply the country with the ICT expertise required. The creation of centres of excellence at universities has been encouraged as the country has realized that HEIs can create significant resources by offering, for example, consultancy and other services on a for-profit basis to industry and to the community at large. In fact, an extra 25% of the total government H.E. funding is currently raised through such services by universities in Egypt. Thus, it becomes clear that one of the means leading to the success of the reform process in Egypt is that the government considers ICT a strategic tool. Links with the private sector have been established and are continuously being developed, and funds are being mobilized to improve efficiency.

62. Discussing the paper, experts noted with interest the lessons of Egypt's on-going experience. Concern was nonetheless expressed about the fact that the very fact of education being free in Egypt may hinder the development of the sector: Costs are high and rising due to rising enrolment rates. Another concern expressed by experts is the country's reliance on donor funds. This may have implications for the sustainability of the reforms and may affect the national program that provides free Internet access to the entire Egyptian population.

B. Breakout sessions

63. Following the presentations, participants broke up into three groups - Best Practices in the Use of IT in Higher Education, Challenges to Higher Education Reform in Africa, Innovation in African higher education - to examine the issues raised in the various presentations and to come up with policies recommendations and other next steps.

C. Wrap-up Session

Chair: Nuru Yakubu

64. During the wrap-up session, recommendations were presented and the meeting was formally declared over by the organizers.

D. Recommendations drawn from the meeting

Chair: Nuru Yakubu

65. Recommendations were made under three broad categories: Best Practices in the use of IT in Higher Education, Challenges to Higher Education Reform in Africa, Innovation in African higher education. The recommendations are presented in that order below.

66. *Best Practices in the use of IT in Higher Education*

- IT has been used in African HEIs as a complement to traditional methods of delivering higher education, not as a standalone. This may not be optimal as it limits the impact of IT in higher education. Leadership commitment and support both at the national and institutional levels as in Egypt and South Africa are essential for the optimal development of IT in member states and for their HEIs. In this context, IT should be treated as an important national strategic variable and efforts should therefore be made to introduce it into all areas of higher education—management, teaching and learning, research.
- Much of the focus on IT use in Africa is on education. However, IT should be considered within a broader national development framework of which HE is only a part. This will enable the integration of IT into a broader national development agenda. The UK model provides a useful example in this regard.
- In view of the poor resource picture of most African countries, a regional approach to IT use and development may offer substantial benefits. By pooling resources together, African countries will be able to exploit economies of scale and scope in the application and production of hardware, software, platforms and other documents. Through regional collaboration, an African IT market may be created. The UNDP Regional Office in Cairo provides some lessons on regional approach to the introduction of IT across countries.
- Leadership both at the national and institutional levels as in Egypt is essential for the optimal development of IT in the countries and HEIs.
- There is need to develop a monitoring and auditing systems of IT use in African HEIs

Challenges to Higher Education Reform in Africa

67. Participants identified several challenges to reforming higher education in Africa. The following recommendations were made in this area:

- (a) In the areas of a) Leadership and management of the reform, (b) political will and commitment (c) Institution building and vision, participants called for the strengthening of leadership through management training as well as capacity building in management information systems relevant to higher education delivery and management.
- (b) On funding and financing of education, participants recommended the diversification of funding sources and financing mechanisms. Merit and need-based scholarships need to be introduced. There is a need for increased private financing and provision of higher education. Higher education institutions should explore means of promoting revenue-generating activities through industry-sponsored research and development activities, the establishment of research parks, and assisting faculty and students to – through the provision of seed capital - commercialize their inventions/innovations.
- (c) Experts, having noted that inadequate and poor quality data were fetters on informed decision-making in higher education, recommended that countries and higher education institutions themselves should improve on data collection and analysis. Data are useful if they are available when needed. It was therefore recommended that efforts be made to ensure that data are delivered on time. Countries were encouraged to establish a higher education statistical agency, along the lines of the UK's Higher Education Statistical Agency (HESA).
- (d) On research and development (R&D), experts noted the possibilities offered by information technology with respect to access to resources outside Africa and recommended that countries, African researchers, and African HEIs take full advantage of these opportunities.
- (e) Experts also recommended that governments encourage and strengthen cooperation, collaboration, coordination and networking amongst institutions and organizations.
- (f) Experts further noted that reforms in higher education can succeed only if there is a constituency for it in member states. They therefore recommended that governments create an awareness for the need for and acceptance of reforms in higher education.
- (g) On the relevance of curricula, participants, recognizing the need to link education much more closely with the labour market recommended that member states restructure and reform the curricula of their HEIs to make them more relevant and responsive to labour – domestic and international - market needs.
- (h) On university, industry and private sector partnerships, it was recommended that governments consider the feasibility of these partnerships and to create an environment conducive for their emergence and growth.
- (i) Experts also recommended the strengthening of human resources development and capacity building using IT.
- (j) Recognizing the need to improve access, equity, and quality, experts strongly recommended that member states take advantage of the opportunities that IT offers in this area.
- (k) Finally, experts recommended that a constituency for higher education reforms and IT be built among the political leadership in order to ensure that government policies are responsive to the sector's needs.

Innovations in African higher education

At the institutional level:

- Institutions should design strategic plans that incorporate the use of IT. Lessons from countries in South Africa, Egypt in strategic planning, the AVU, AUF should guide institutional efforts.
- ECA and UNESCO should develop guidelines for the development of institutional strategic plans.
- Institutions should develop joint curriculum, teaching and research work among themselves through the use of regional hubs.

At National Level:

- National awareness campaign, [awareness campaign,] legislation, infrastructure and human resource development should be a priority in the design and implementation strategies in higher education in Africa for understanding the importance of the education ie primary and secondary education.

At Regional Level:

- Within the framework of the forum presented by the joint Secretariat comprising of the OAU, ECA and ADB, the three organizations should harmonize the regional and Sub-regional protocols, infrastructures and human resource development on the use of IT in higher education in Africa. In this context, they should spearhead the political awareness and will and resource mobilization for IT development and use.

VI. Closing session

Chair: Nuru Yakubu

68. Dr. M. Juma gave a vote of thanks. She thanked the organizers for choosing Nairobi, the home of AVU, to host the meeting and expressed the hope that the effort of calling and focusing attention on the state of higher education in Africa must be sustained.

69. Mr. Juma Shabani thanked participants on behalf of UNESCO-BREDA and assured them that UNESCO will seriously consider the recommendations made. Mr. Nwuke thanked participants on behalf of the ECA for their very active engagement with the issues. He also addressed some of the issues raised such as follow up meetings and activities and assured participants that ECA will follow up on their recommendations, the hope being to create a constituency for Higher Education on the continent. A learning group on higher education may be created to provide a forum for experts and policy makers to dialogue and exchange experiences.

70. Participants expressed the need to keep in touch and to collaborate, through the Internet, on issues pertaining to higher education and the use of IT as a toll to increase productivity.

Annex 1:

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Anexe 2:

List of materials presented

1. Aide-Memoire and Programmeme of Work
2. Nwuke, K. "Issues in Higher Education, Economic Growth, and Information Technology in Africa."
3. Workie, M. and Paddisson, O. "An Empirical Analysis of Higher Education and Growth in Africa."
4. Nwokeabia, H. "A Survey of the State of Higher Education in Africa."
5. Daly, J. "The Implications of U.S. Experience in Information and Communication Technologies and Higher Education for Africa."
6. Adei, S. "Using Information Technology to Improve Higher Education Output and Deliverables in Ghana."
7. Gauci, A. "Lessons from Higher Education Reforms in Africa."
8. Kelly, J. "The Response of Information Technology to the Challenge of HIV/AIDS in Higher Education Institutions in Africa."
9. Mbwette, T. "IT-Based Data for Decision Making in Higher Education Reforms: Needs and Challenges."
10. Beebe, M. "E-Quality: New Policies and Practices in Higher Education Networks."
11. Chilundo, A. "Mozambique: Reforming Higher Education Through a New Financing Mechanism – An Informative Paper."
12. Ukeje, N. "Data Management for Decision Making in Higher Education."
13. Butcher, N. "Information and Communication Technologies and South African Higher Education."
14. Said, M.E. "Higher Education in Egypt."
15. Juma, M.N. "African Virtual University (AVU): Challenges and Prospects".
16. Shabani, J. "Reforms in Higher Education in Africa and the Use of Information Technology in Africa: Achievements of the UNESCO Regional Office for Education in Africa (BREDA)."
17. Mhambi, T. "New Governance Competencies in African Higher Education."
18. Apitta, L.O. "The Rationale for New ESIP Funding and Labour Skills."

Other documents

19. Gauci, A. and Paddisson, O. "Towards a Knowledge-based Economy: The Relevance of Curricula in Africa – Science, Education and Technology."
20. Gauci, A. "A Typology of Higher Education Institutions in Africa."
21. Cho, S. "Successes and Challenges of Higher Education in Asia: Key Lessons for Africa's Reforms."
22. Eshete, A. "The UNESCO International Institute for Capacity Building in Africa (IICBA) Approach to Strengthening Capacities in Teacher Education."
23. Abdellah, G.A. "Open Distance Learning in the Arab Republic of Egypt."

November 17 – 18

ARRIVAL

November 19, 2001

08:30 – 09:30	Registration of Participants
09:30 – 09:45	- Opening Session Chair: Secretary, Commission for Higher Education, Kenya. - Adoption of Programme of Work
09:45 – 10:00	Short Statement by USAID Representative
10:00 – 10:10	Short Statement by UNESCO Rep. <i>Prof. J. Shabani</i>
10:10 – 10:20	Opening address by ECA
10:20 – 10:40	Welcome address by Minister of Education Republic of Kenya
10:40 – 11:00	Coffee Break
11:00 – 11:30	TOPIC: “ <i>Issues in Higher Education, I/T and Economic Growth</i> ” Chair: <i>Prof. Neil Butcher</i> - South Africa Presenter: <i>Kasirim Nwuke</i> , ECA Discussant: <i>George Namakando</i> , ADB – Addis Ababa Rapporteur: <i>Hilary Nwokeabia</i> , ECA
11:30 – 12:00	Discussion
12:00 – 12:30	TOPIC: “ <i>An Empirical Analysis of the Link Between Higher Education and Economic Growth in Africa.</i> ” Presenter: <i>Oliver Paddison</i> – ECA Chair: <i>Prof. Neil Butcher</i> - South Africa Discussant: <i>Prof. Kwabena Gyimah-Brempong</i> , USF & UNDP Rapporteur: <i>Adrian Gauci</i> , ECA
12:30 – 13:00	Discussion
13:00 – 15:00	Lunch Break
15:00 – 15:30	TOPIC: “ <i>Higher Education in the Information Age</i> ”. Presenter: <i>Prof. Juma Shabani</i> , UNESCO Chair: <i>Prof. Ajaga Nji</i> - Cameroun Discussant: <i>Mr. Theodore Azubuike</i> , NUC-Nigeria Rapporteur: <i>Richard Onyancha</i> , UNESCO
15:30 – 16:00	Discussion
16:00 – 16:15	Coffee Break
16:15 – 16:45	TOPIC: <i>The Paper from Uganda</i> – TBA Presenter: <i>Mr. Lamara Apitta</i> – Uganda
16:45 – 17:15	Discussion
17:15 – 17:30	Closing
18:00	Reception

November 20, 2001

- 09:00 – 10:15 Theme: **Best Practices in the Use of IT in Higher Education**
Chair: Ms. Agatha Gaisie-Nketsiah
Discussants: Mr. Yao Assigbley, Mahmadou Keita, T. Azubuike and Tonye Emmanuel
Rapporteur:
- “Survey of the State of Higher Education in Africa” Hilary Nwokeabia - ECA
 - “Successes and Challenges of Higher Education in Asia” Sam Cho and Adrian Gauci - ECA
 - “The Implications of US Experience in ICTs in Higher Education for Africa” John Daly -USAID
 - “Long Distance Education to deliver Higher Education in Africa: Lessons from South Africa.” Prof. Neil Butcher -UNESCO
- 10:15 – 10:30 Coffee break
- 10:30 – 12:30 Theme: **Challenges to Higher Education Reform in Africa**
Chair: Professor Adebayo Olukoshi, **CODESRIA**
Discussants: Prof. Dormirien Nizigiyimana, Dr. Anthony Mawaya, Prof. Festus Kaberia, M. Papa Gueye
Rapporteur: Dr. Meoli Kashborda, UNESCO
- “Data for Decision in Higher Education”
 - Prof. Tolly Mbwette – UNESCO
 - “Higher Education Statistics and Policy making in Nigeria” John Ukeje -UNDP
 - “The Response of I/T to the Challenge of HIV/AIDS in African Higher Education Institutions” Michael Kelly - University of Zambia.
 - “e-Quality: New policies and practices in Higher Education Networks” Dr. Maria Beebe - USAID
- 12:30 – 14:30 Lunch Break
- 14:30 – 16:30 Discussion of Challenges to Higher Education Reform in Africa
- 16:30 – 17:30 Theme:
Chair: Prof. Tolly Mbwette – UNESCO
Discussants: Prof. Almaz Eshette (IICBA), Pius Ekireghwo, Ms. Nicola Ndemera, Mbambi Themba
Rapporteur: Hilary Nwokeabia, - ECA
- “IT Use in African HE” Lishan Adams - ECA
 - “Ghana: Using I/T to improve Higher Education Output and Deliverables” – Dr. Stephen Adei – GIMPA, Ghana
 - “African Virtual University” - Challenges and Prospects – “ Dr. M. Juma - UNESCO
- Funding / Financing Prof. Arlindo Chilundo (Mozambique):

November 21, 2001

- 09:00 – 10:00 Theme: *IT and New Governance Competencies*
Chair: *Mr. Adom Jack* - Cote d'Ivoire
Discussant: *Mr. Omara Apitta* – Uganda
Rapporteur: *Dr. J.M. Gitbeke*, UNESCO
- *New Governance competencies in African HE” - Mr. Mhambi Themba, South Africa*
- 10:00 – 11:00 Theme: *Reform Strategies*
Chair: Amb. M. Moussa Makan, O.I de Francophonie
Discussant: *Dr. Tesbome Yizengaw*, Ethiopia
Rapporteur: *Oliver Paddison*, ECA
- *“Reform of Higher Education in Egypt” Dr. Mohsen Said - Egypt*
- 11:00 – 11:30 Coffee break
11:30 – 13:00 Recommendations (Break-out sessions to work on recommendations which will later be presented and discussed in plenary)
- 13:00 – 15:00 Lunch break
15:00 – 16:30 Plenary - Discussion of Recommendations
Chair: *Nuru Yakubu* Nigeria
Rapporteurs: *Prof. Kwabena Gyimah-Brempong*, UNDP, USF
Kasirim Nwuke, ECA, Oliver Paddison, ECA
- 16:30 – 16:45 Adoption of Recommendations:
Chair: *Mr. Nuru Yakubu*, Nigeria
16:45 – 17:00 Closing – *ECA, UNESCO-Dakar*

November 22 – 23

DEPARTURE