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Collaboration with HEIs: a key capacity building block for the Uganda water and sanitation public sector

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Abstract: *The capacity of public service staff in developing countries is crucial for achieving the Millennium Development Goals. Literature from developed countries shows that, working with higher education institutions (HEIs), industries have improved their human resource capacity through continuing professional development. This paper reports on research carried out in Uganda to examine the drivers of and barriers to collaboration between the water/sanitation public sector and HEIs. The results show that, whereas stakeholders from both sides consider collaboration to be important for achieving their corporate goals, there is a need to overcome organizational constraints and strengthen existing collaborations, which are largely perceived as weak and/or informal.*

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Low human resource capacity – a barrier to achieving MDGs

The world we live in is full of contradictions. While in some places people live in comfort and sometimes in extreme luxury, in other areas people live in abject poverty. For instance, at the beginning of the millennium it was estimated that 1.1 billion and 2.4 billion people, the majority of whom lived in developing countries, lacked access to safe drinking water and basic sanitation facilities, respectively (WHO and UNICEF, 2000). In response to the high prevalence of poverty in many parts of the world, 189 member states of the United Nations met in September 2000 and agreed to eight time-bound and measurable Millennium

Development Goals (MDGs). The MDGs aim to reduce poverty, hunger, disease, illiteracy, environmental degradation and discrimination against women by 2015.

One of the overarching targets of the MDGs is to reduce by half the number of people without access to safe water supply and sanitation facilities by 2015. Huge investments are required to achieve this target. In addition to budget provisions by the developing countries concerned, it is estimated that in the recent past the overseas development assistance (ODA) allocation to the water/sanitation sector in developing countries has averaged about US$3 billion a year (Fonseca *et al*, 2004). In spite of these huge sums of money, the most recent WHO/UNICEF Joint Monitoring Programme estimated that between 1990

and 2004 the number of people lacking adequate service levels of water and sanitation decreased by only 118 and 98 million, respectively (WHO and UNICEF, 2006). If this trend continues, it is projected that the MDG water and sanitation targets will be missed by 125 and 585 million people, respectively (WHO and UNICEF, 2006). One of the key barriers to achievement of the Goals in developing countries is the lack of adequate human resources in terms of numbers, attitude, focus, knowledge and skills.

Furthermore, the working environment for public-sector professionals in developing countries is changing for various reasons, such as dwindling natural resources, climate change and rising consumer expectations. Increasingly, professionals can no longer expect to rely on their initial education to propel them through their working life – there is a need for continuous learning and continuing professional development (Franks, 1999). Public service sector staff should therefore not only have adequate knowledge and skills at the time of joining the establishment, but should continuously upgrade their capacities in response to these changes, through regular attendance of well-designed continuing professional development (CPD) courses. Experience in developed countries has shown that, through collaboration with industry, higher education institutions (HEIs) have designed and delivered relevant CPD courses that produce the required behavioural changes in participants (van Raaij and Weimer, 2003). This paper reports on a case study conducted in Uganda on the drivers of and barriers to collaboration between HEIs and water/sanitation public sector professionals. The next section provides background information on the case study.

Background to the research problem

Uganda is a sub-Saharan country with a population of 27.8 million in 2004 (WHO and UNICEF, 2006). It is a low-income country, with a per capita GDP of US$1,390 per year and with an estimated 38% of the population surviving on an expenditure of less than 1US$ per capita per day (UNDP, 2004). At the end of 2004 only an estimated 43% and 60% of the population had access to safe sanitation and water supply facilities, respectively (WHO and UNICEF, 2006).

Uganda's national economic policies geared towards poverty alleviation have, since 1987, been rooted in the Poverty Eradication Action Plan (PEAP), Uganda's version of the World Bank sponsored Poverty Reduction Strategy Paper (PRSP), whose overarching goal is to reduce headline poverty to not more than 10% by 2017. Since its inception, the policies, strategies and plans of key sectors have been designed as offshoots of

the PEAP, which has been kept current through regular revisions. The water/sanitation sector is a priority area which contributes to two of the four pillars of PEAP: actions that directly increase the ability of the poor to raise their incomes and actions that directly improve their quality of life (Government of Uganda, 2004a).

The Ugandan water/sanitation sector comprises four key organizations:

- the Directorate of Water Development, the leading policy-making agency and mainly responsible for rural water supply and water resources management;
- the National Water and Sewerage Corporation, a semi-autonomous government-owned company that provides water supply and sewerage services in the larger towns;
- the Environmental Health Division of the Ministry of Health, which oversees household sanitation; and
- a small section in the Ministry of Education responsible for managing school sanitation.

In the past, different organizations in the sector have made individual strategic plans, budgets and action plans with hardly any coordination with other organizations. Since 2001 policy makers in the sector have recognized the need not only for inter-organizational collaboration, but also for working with other key stakeholders outside the public sector. Since then, a sector-wide approach (SWAp) to policy making, planning and budgeting has been adopted, whereby representatives from all the water/sanitation sector's organizations, from the private sector, from water-based NGOs and from international donor organizations meet regularly as a Water and Sanitation Sector Working Group, the highest policy making body in the sector.

These sector-wide approaches have made commendable progress in various areas, such as strategic planning for achievement of the MDGs, investment planning, budget allocations and performance measurement. However, such approaches have not been used to establish a strategic direction for human resource development, despite the fact that the capacity of the human resource is a key factor for the achievement of the sector's goals and targets. Improvements in knowledge and skills need to be geared towards the sector's goals. A study carried out on capacity development in the Uganda water/sanitation sector in 2004 produced the following key findings (Reed *et al*, 2006):

- there is no comprehensive sector-wide approach for identifying the competencies that are now required of different cadres and stakeholders;
- there is a lack of sector-wide approaches and a sector-wide strategy for short-term and long-term

human resource development planning, forecasting and budgeting; and

- there is minimal networking between HEIs and the water/sanitation sector service organizations in relation to CPD and education and training.

As is the case in many other developing countries, the water/sanitation sector in Uganda is undergoing institutional reform so that it can respond adequately to the enormous task of achieving the MDGs. Increased activities in the sector have led to a proliferation of organizations and the expansion of a workforce with diverse professional backgrounds. Decentralization has given more responsibility and autonomy to local governments in the districts. There are more and more public–private partnerships, which bring in the private sector as a major service provider. Additionally, NGOs are now more involved in the sector's activities, ranging from advocacy to service delivery. Professionals who have been trained primarily in service delivery are increasingly finding themselves taking on the simultaneous roles of planners, contract managers, regulators and facilitators (Reed *et al*, 2006).

Policy makers in the Uganda water/sanitation sector have recognized the importance of training and capacity building in making the sector's professionals responsive to the changing needs, and so budgets for capacity building have been on an upward trend in the past few years. For instance, in 2003 over 17% of the total budget for the Directorate of Water Development was allocated for training/capacity building (Government of Uganda, 2004b). However, concerns have been raised about the way training and capacity building are being managed. It has been alleged that a substantial proportion of the training and capacity building budget is spent on workshops and seminars – for which allowances, food and conference facilities account for the bulk of the costs (Reed *et al*, 2006). It is anticipated that sector-wide planning and collaboration between HEIs and professionals would result in coordinated and better-quality training and CPD for the sector's staff. Similarly, HEIs would benefit from the collaboration in various ways – for example, in gaining financially through the provision of CPD to the sector, in making their curricula more demand-responsive, and in carrying out collaborative research with industry.

The next section presents key points from the relevant international literature on collaboration between HEIs and industry.

Literature review

Collaboration is a core strategy for inter-organizational relationships, and is variously described by terms such as 'partnership' or 'networking'. In its simplest form, collaboration implies '. . . individuals in one organization working together with other individuals in another organization in order to achieve some form of mutual benefit' (Tett *et al*, 2003, p 39). Collaboration is considered good practice because it (a) counters individualism and the costly repetition of tasks, (b) adds value through the sharing of resources, (c) broadens the scale and scope of intervention, (d) tackles complex social issues, and (e) eases the process of research and policy development (Griffiths, 2000; Tett *et al*, 2003).

In many countries HEIs and industry have a long history of collaboration, mutually beneficial to both parties (Prigge, 2005; Turk-Bicakci and Brint, 2005). In the USA, for instance, national legislation passed over twenty years ago entrenched the central role of university–industry collaboration in university research agendas (Turk-Bicakci and Brint, 2005). Similarly, collaboration between HEIs and industry in the UK has been encouraged since the late 1990s by Labour Government policies which emphasize the concept of partnership in the aftermath of the Conservative era of deregulation and privatization which, it is argued, militated against social cohesion (Foskett, 2005; Tasker and Packham, 1993).

Although both industry and HEIs have had to adapt some of their value positions in response to the demands of collaboration (Tasker and Packham, 1993), it can be argued that these collaborations have been broadly positive (Slack, 2004). Examples of benefits to universities include financial support from industry for their educational, research and service missions, expanding the experience of students and lecturers, the identification of significant and relevant practical problems, the enhancement of regional economic development, and an increase in employment opportunities for students (Prigge, 2005).

Governments in many developed countries have obliged HEIs to strengthen links with industry, and this in turn has resulted in higher income flows to HEIs (Tasker and Packham, 1993). Collaboration has also led to the increased influence of industry on academic research and curriculum design. In some extreme cases, courses have been planned, directed, taught, assessed, equipped and financed jointly by industry and HEIs (Tasker and Packham, 1993).

Furthermore, through collaboration HEIs have gone a step further to provide CPD for industry in the form of company-specific courses designed to produce behavioural changes in participants (van Raaij and Weimer, 2003). Many HEIs have responded to the challenge of providing work-based learning and have devised their own practices and accreditation procedures to incorporate credits from work-based learning into

their faculty evaluation systems (Boyd *et al*, 2003). Hence, if HEIs respond positively to the changing needs of the society within which they operate, education–work and academic–vocational distinctions become less significant (Boyd *et al*, 2003).

There are numerous case studies in the literature of successful collaboration between HEIs and industry. Notable examples are the Adapt–University for Industry project, which has successfully provided guidance on work-based learning opportunities for Scottish SMEs (Boyd *et al*, 2003); the successful collaboration between the city and the university of Dortmund in Germany in shaping economic policy (Gerszewski and Krieger, 2002); the collaboration in world-class knowledge transfer between Hewlett-Packard and Stanford University in the USA (Johnson, 2003); and the partnership involving the Puerto Rican government, the University of Puerto Rico and local biotechnology industries which is shaping Puerto Rico's biotechnology cluster development (Saliceti-Piazza *et al*, 2003).

Challenges and difficulties have also been highlighted in the literature. Tasker and Packham (1993) emphasize the fundamental differences in the value positions of HEIs and industry which may be in conflict in a collaborative project. While the overarching objective of industry is to maximize growth and profits, academic values are embedded in intellectual integrity and freedom of expression in teaching and research. It is important to recognize and respect such fundamental differences from the beginning if conflict is to be minimized (Tasker and Packham, 1993).

Research design

The previous sections indicate that collaboration could be beneficial to the current capacity development initiatives in the Uganda water/sanitation public sector. This study is part of a wider action research programme in Uganda on capacity building for water/sanitation sector, sponsored by the UK Department for International Development and facilitated by Loughborough University. The study was conducted in early 2006 as part of an MSc degree in Development Management (Kayaga, 2006). The objective was to identify the key factors influencing collaboration between HEIs and the Uganda water/sanitation sector. The research questions were:

(1) What current collaborations are there?
(2) How important is collaboration perceived by the respective parties?
(3) What/who are the motivators of HEI–industry collaboration?
(4) What/who are obstacles to improved HEI–industry collaboration?

A case study methodology was adopted to answer these questions. Data were collected mainly through a review of grey literature, observations and semi-structured interviews. The units of analysis were the HEIs and water/sanitation sector organizations with the potential for collaboration. Interviews were conducted with thirteen senior professionals from ten departments and organizations in the sector, as well as with twelve senior lecturers and professors from various departments in four HEIs. An interview guide was developed and piloted with respondents in the Uganda Directorate of Water Development headquarters. It was subsequently refined and a day's training was conducted for two experienced research assistants who were urged to probe their respondents and note down all comments made. The interviews, which took place in January and February 2006, lasted for approximately one hour. The main issues covered are shown in Table 1.

The research assistants were instructed to transcribe the data in Microsoft Word. For unclear statements, the transcripts were cross-checked for accuracy via follow-up telephone interviews with the respondents. Data analysis was done with Microsoft Office tools, as

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Table 1. Main issues covered in semi-structured interviews with key stakeholders.

HEIs	**Water/sanitation sector organizations**
Core values, core competences; mission, vision and objectives.	Core values, core competences; mission, vision and objectives.
Type and strengths of collaboration with water/sanitation sector organizations.	Type and strengths of collaboration with HEIs.
How much CPD have you provided to water/sanitation sector organizations? If any, how much did the sector professional participate in the design, delivery and evaluation?	How much CPD have HEIs provided to your organization? If any, how much did you participate in the design, delivery and evaluation?
How important do you perceive collaboration with water/sanitation sector organizations to be?	How important do you perceive collaboration with HEIs to be?
What do you perceive to be the drivers of and barriers to collaboration?	What do you perceive to be the drivers of and barriers to collaboration?

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proposed by La Pelle (2004). The following steps were followed:

(1) The Microsoft Office Table functions were used to: format the transcripts into table structures for analysis; modify the tables for coding purposes by adding rows and additional sort key columns; merge the tables of data for different informants; search, using the 'Find' function for keywords or codes; sort in a variety of ways (for example, by theme code, utterance number, organization type, question number, etc) using the Table Sorting function; and edit the tables using the standard editing functions or the 'Replace' function for global changes.
(2) Descriptive codes were developed which helped to '. . . *assemble* chunks of words that go together, and *reduce* the bulk into readable analyzable units' (Miles and Huberman, 1984, p 56). These codes were developed based on the research questions.
(3) The descriptive codes were matched with the text in the data, ensuring that all relevant data were allocated with codes.
(4) The next step was to group together the descriptive codes into smaller numbers of broad themes, called 'pattern' codes.
(5) Finally, the pattern codes were used to analyse the data further and to draw plausible conclusions.

Findings and discussion

The strategic objectives of all stakeholder organizations and HEIs were geared towards improving the welfare of society, and highlighted the importance of human resource capacity in achieving this mission. However, only three water/sanitation sector organizations and two HEIs mentioned the importance of collaboration in the fulfilment of their goals. The fact that the creation of partnerships is not embedded in the organizational norms and values may have implications for the readiness, commitment and ability of stakeholders to work with people in other organizations. Furthermore, institutional-level recognition of the need to collaborate is a pointer as to whether or not resources are likely be put aside for the development of inter-organizational collaborative arrangements.

Existing collaborations

The existing collaborative activity was typically industrial training and/or applied research undertaken by students in the water/sanitation sector organizations. Most collaborations were informal and had been initiated by individual students. In the case of many industrial training attachments, there is no exchange of information between professionals in the sector and

academics, apart from a generic letter of introduction from the HEI to the participating organization. No meetings are arranged. Many such linkages are *ad hoc* and often cease when the student has successfully completed his or her course. Two instances were mentioned of HEIs offering CPD to water/sanitation sector organizations, and in these cases sector professionals had participated in the formulation, delivery and assessment of the training modules. These collaborative activities were initiated through international donor-funded projects and ceased as soon as the project ended.

Many of the respondents indicated that existing collaborations were weak and informal. Stakeholders pointed out that linkages were usually initiated by individuals, and normally remained active merely on a personal basis. It is debatable whether such linkages, usually initiated by individual students or HEI staff, could really be categorized as inter-organizational collaboration, since they are hardly formalized and do not survive when the individual ceases to participate. Some exceptions were, however, reported – some tripartite collaborations (involving a water sector organization, a national HEI and an overseas HEI) had been initiated by external HEIs and facilitated through international donor-funded projects. But such partnerships have not stood the test of time and have typically become inactive soon after the donor funding has ended.

Perceived importance of collaboration

All the interviewees reiterated the importance of industry–HEI collaboration, citing various reasons. A summary of their responses is shown in Table 2. It is clear from these that the respondents appreciated how collaboration could benefit both the public service sector and the HEIs: stakeholders from each category highlighted the advantages that would arise from the partnership. Many of the cited benefits contribute, in one way or another to the common strategic objective of improving the welfare of society. Stakeholders from both categories highlighted how collaboration could improve the quality of the sector professionals at the time of absorption and during employment (in the form of CPD). In addition, some HEI representatives noted the importance of working closely with industry for the growth and financial sustainability of their institution.

Perceived drivers and barriers

The respondents had different views as to what constituted the drivers of industry–HEI collaboration. Table 3 summarizes the responses. These can be categorized into (a) what needs to be done by industry and (b) what needs to be done by HEIs. The respondents clearly thought that the proactive academics coupled

Table 2. Perceived importance of industry–HEI collaboration.

Main responses	Frequency	
	Industry	HEIs
To enable water sector professionals to contribute to the curriculum and make university products more responsive to sector needs.	4	1
To improve the quality of CPD in the water sector.	2	–
For the university to move away from 'ivory tower' status and get closer to society.	–	2
To enable university departments to provide services to the sector on a commercial basis.	–	2
To understand the challenges faced by sector professionals, and design learning and teaching accordingly.	–	2
Collaboration is crucial for the growth and sustainability of the HEIs.	–	3

Table 3. Perceived drivers of collaboration.

Main responses	Frequency	
	Industry	HEIs
Expressed need by managers and policy makers in the sector to obtain better quality training.	4	–
The need for improved service delivery in the water/sanitation public sector.	2	–
Creation of business opportunities for HEIs in the water/sanitation sector.	–	2
The proactive nature of HEIs: that is, they look for business opportunities and successfully market themselves.	3	1
Self-motivated staff of HEIs.	–	2
Good visionary leadership on the part of HEIs.	–	3

Table 4. Perceived barriers to collaboration.

Main responses	Frequency	
	Industry	HEIs
Unresponsive managers in the sector due to organizational constraints.	3	1
Unresponsive managers in the sector due to corrupt tendencies.	3	1
The institutional set-up and organizational orientation of HEIs does not render them sufficiently competitive to win training/capacity building jobs in the sector.	3	4
Working conditions in HEIs do not favour strong industry–HEI collaboration.	–	5

with good visionary leadership in HEIs were important drivers – but collaboration is a two-way process and so policy makers and managers in the water/sanitation sector need to be responsive to collaborative approaches from HEIs. Among the major obstacles cited were the rigid procurement procedures that made it difficult for HEIs to bid successfully to provide training services for the sector.

Respondents also highlighted a number of other obstacles to improved industry–HEI collaboration (see Table 4). Several organizational constraints in the water/sanitation sector were cited, including, apart from rigid procurement procedures, the lack of a sector-wide training strategy, the lack of priority accorded to staff training and capacity building, and inadequate training budgets. Unresponsiveness among the sector's professionals to improved collaboration with HEI academics was also attributed to deliberate resistance by

some sector managers who, for reasons of self-aggrandisement, preferred working with 'briefcase consultants' than with institutions. Respondents also reported that there were attitudinal problems, such as 'the mindset that international HEIs offer better quality training'.

HEIs too were said to suffer from organizational and institutional constraints. Examples include: the bureaucratic nature of university systems, which does not make them attractive prospects in competitive bidding; the fact that university departments do not have the autonomy to make strategic decisions; and the conservative nature of university dons, who emphasize traditional supply-driven classroom teaching at the expense of demand-driven CPD. Other obstacles cited fell into the overall category of the unfavourable working environment in HEIs and include: inadequate numbers of staff for the high student enrolment

numbers; the high level of staff turnover; poor staff remuneration; poor facilities, such as laboratories and other teaching aids; and apathy among teaching staff.

Summary and conclusion

At the Millennium Summit held in September 2000, 189 member states of the UN agreed to eight time-bound and measurable Millennium Development Goals aimed at reducing the poverty prevalent in many parts of the developing world. Besides the huge sums of money required, another key necessity for the achievement of these goals is the capacity of the staff working at policy, managerial and operational levels in the public service sectors of developing countries. There is a need for these sectors not only to employ staff with adequate knowledge and skills, but also to ensure that their capacity is continuously upgraded. A review of the relevant literature indicates that strong partnerships between HEIs and industry in developed countries have been instrumental in creating customer-responsive behavioural change in the workforce, mainly through collaborative research and the provision of CPD. Clearly, collaboration with HEIs is a key capacity building block for professionals.

This case study, conducted in the water/sanitation and higher education sectors in Uganda, has shown that most existing collaborations were initiated by individuals, and that they were informal, weak and *ad hoc*. The few formalized collaborations that were identified had been made possible through the intervention of a third party in the form of a donor-funded project or an external HEI. Yet all the stakeholders interviewed perceived industry–HEI collaboration as an important factor in the attainment of their long-term objectives. This study has identified institutional and attitudinal obstacles to the development of effective collaboration. In order to strengthen collaboration between HEIs and the water/sanitation sector in Uganda, both sides need to recognize the importance of collaboration in the context of their overarching goal – to enhance the welfare of society. Policy makers from both sides of the partnership need to create conducive and enabling environments for collaboration. Similarly, stakeholders in both the water/sanitation sector and HEIs need to re-examine their attitudes and work towards greater industry–HEI collaboration. On the basis of the evidence from developed countries, well-managed collaboration will bring great rewards.

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