The New Kid on the Block

(The Name is KJST)

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I. KIST, THE BEGINNINGS

The Project

The Kigali Institute of Science, Technology and Management (KIST) is one product of Rwanda’s latest civil war, 1990-1994, the genocide preceding it and consequential national reconstruction. Shocked by the extent of the infrastructural damage and human losses estimated at one million, suddenly, there was donor goodwill for restoring Rwanda to some level of normalcy. There was now also appreciation all around that investment in technological higher education which the country never had before was a good starting point, at least for physical reconstruction. It was thus international donor funding, managed by the German Agency for Technical Cooperation (GTZ), was made available to start KIST in 1997 as a limited donor funded project \(^1\).

The initial curriculum was for the training, mainly, of craftsmen and technicians in the short term. Requiring only additional courses, the curriculum also allowed for the training of engineers. The uniqueness of a curriculum providing incrementally for all phases of technological training, from artisans through technicians to engineers was a source of tremendous satisfaction to KIST, but not for long. Educational Consultants of India Ltd (Ed CIL Ltd) hired by the African Development Bank (ADB) to undertake a labour market survey of the country’s requirements of technologically trained came in 2001 to advise that training sub-professionals and professionals on the same curriculum had the drawback of not emphasizing theory enough for the engineer while exposing the sub-professional to too much theory at the expense of the more critical hands-on practical experience. Consequent to that intervention\(^2\), KIST has since 2001 adopted a new curriculum which admits two streams of students, one to a three year diploma for technicians, the other to a four year Bachelor’s programme for engineers, both programs preceded by a Foundation Semester which includes a component for the beginner course in whichever of English or French proficiency lacks. KIST is keen to implement Government’s Bilingual Policy. Accordingly, instruction is available in both English and French.

Drawn mainly from the sub-region, the initial KIST Faculty included many who had been engaged in university level teaching who wanted to continue as university teachers rather than some other. In an exercise to identify KIST with higher education, the Faculty came up with an embryo strategic plan dubbed “ACTION PLAN FOR CONSOLIDATION, 2002 – 5\(^{th}\)”. The document adopted the academic calendar, the teaching load, staff–student ratios and various norms which complementing the curriculum advised by Ed CIL would make identification with higher education more obvious. The effort at strategic planning received a boost from funding provided by a donor partner to bring an expert whose contributions extended to identification also of space and the structural requirements appropriate to higher education and the costs thereto. Developments at KIST since have taken their bearings from the Institute’s composite STRATEGIC PLAN, 2001 - 2006\(^4\) which incorporates ACTION PLAN 2002 - 2005 which preceded it. Instead of 2002 for commencement of plan implementation as provided by the Action Plan, the composite Strategic Plan goes a year back for immediate implementation of some objectives, the Foundation Semester, for instance.

On the ground, currently, KIST includes five Faculties of Technology, Management, Science, Languages and Continuing Education, each comprising a number of Departments and Divisions. For the management of the Institute, the Statute provides for a Governing Council with a lay majority and student representation, an appointed Rector, two Vice Rectors, also appointed, elected Deans and appointed Heads of Departments. The Statute provides also for a part elected Senate, a Management Committee, and Senate-instituted sub committees from which recommendations come to Senate or Management Committee.
II. THE IMPACT

Access

Like the rest of Sub-Saharan Africa, Rwanda’s higher education enrolment is less than 1% of the age-group of 18 - 24. Higher enrolment is only now in prospect, with the coming of KIST among new institutions established since 1997. Relative to males, female enrolment in Rwanda at large is 1:7. At KIST, 1:3.5 has been achieved already, because the Institute’s policy guarantees admission to all female who qualify. Females have priority also to hostel accommodation; and they are promised financial support so long as they maintain passing grades.

In each of 6 public and 6 private institutions, Rwanda’s curriculum of higher education is humanities-dominated. In 1997, when KIST first opened its doors, the number of registrable technologically educated in the country, counting professionals, sub-professionals and all, did not quite add up to 50. At its inaugural graduation on July 27, 2002, KIST graduated 30 in Computer Engineering and Information Technology, which, by any account, is a substantial contribution. In addition, 32 graduated in Management while 401 received diplomas in Technology and Management. At the next graduation in November 2003, degrees and diplomas will be awarded in 3 out of 7 disciplines of Engineering to 90 students and in four disciplines of Management to 208 others. In sum, diversification of the curriculum to include technology is the peculiar contribution of KIST.

All 62 graduates in various disciplines of Engineering and Management who came out in 2002 are in gainful employment already. The curriculum to which they studied include 8 weeks of Industrial Attachment which exposes the student to the prospective employer before graduation. It has proved helpful in subsequent placement. In any case, where registrable technologically trained are so few, trained personnel can hope for employment.

In addition to Industrial Attachment, the KIST curriculum stipulates also Community Attachment of 4 weeks to precede the Student Project required for graduation. A project undertaken for its academic challenge has merit. At KIST, the project must also seek to address some pressing problem of local relevance. One such project report identified a way to replace a 40 meter bridge that had been washed away in a rural community, separating the population from vital services. Funding was on hand from the German Embassy in Kigali and students came also from Germany to join KIST students from the Department of Civil Engineering and Environmental Technology to replace the displaced facility with the country’s first suspended pedestrian bridge which can take at least 20 pedestrians at a time.

Through programs at the Center for Continuing Education (CCE), the worker population in Rwanda and other non-traditional students are now also able to participate in higher education. Currently, the total student population stands at 3500 of which one third are part-time students who attend after-work classes at CCE. The Center’s In-Service Training Programs provide tailor-made courses on demand by Government Ministries, parastatals, NGOs and individuals for skills upgrading, computer know-how, management or language training. Such staff can also hope for advancement in their work places where currently only 5% have qualification beyond secondary education. The Faculty of Technology’s Entrepreneurship Development Center also runs short courses to introduce both urban and rural population including regular students at KIST to various cottage industries such as jam-making, candle making, manufacture of nails, tissue paper, plastic bags and plastic pipes, among others.

Community Improvement

The variety of courses, short and long and the flexibility in delivery, full time, part time, regular hours or after-work, provide something for a wide section of Rwanda’s population. Nowhere is the Institute’s impact felt more than in the application of appropriate technology for community
improvement. Some donor agencies are never happier than supporting measures for such improvement:

**Solar Power** – The Institute’s curriculum includes courses on how to harness solar power for domestic lighting, operating telephones, radio, television and refrigeration as a result of which many communities and institutions enjoy these services, planned, installed and serviced by the Institute’s staff and students.

**Access to Water** – Satisfactory results have been achieved in adapting design of low cost pumps for accessing water for domestic use and irrigation. The Institute has assisted also with design and installation of systems for rainwater harvesting for some households that have no access to pipe-born water.

**Energy** - In 2001, the KIST - manufactured Energy Efficient Baking Oven won first prize in the Ashden Awards of the U.K. Many organizations and institutions in Rwanda have since had modifications of the design installed in their establishments. The Institute also produces community cook stoves now in use in many organizations and communities including the military, the prisons, hospitals and schools.

**Biogas** - The Journal of World Transaction on Engineering Technology Volume I of 2002 carries an article written from KIST introducing a biogas system design which, compared to other known designs, doubles the production of gas from waste product. Using this design, it is intended to install biogas plants in the country’s prisons which currently have some hundred thousand inmates awaiting trial for human rights abuses dating from the civil war and the preceding genocide. Feeding this large population usually involves a lot of wood cutting while the volume of waste generated begins to degrade the environment and pollute nearby water bodies. A pilot plant installed by KIST at the prison in Cyangugu now provides that establishment with 70% of its fuel requirement and the environment is also now cleaner. This is now being extended to other prisons, schools and hospitals.

### III. THE CHALLENGE

**Funding**

That KIST could begin at all was partly because of donor-funding. However, instead of the trade school or the polytechnic that some donors thought they were supporting, KIST has been established by law as a university. The duration of its courses goes beyond 1-2 years with attendant costs that also go beyond the initial projections in consequence of which donor enthusiasm has abated somewhat. Meanwhile, the Freshmen class at KIST comes from a very low base of science that makes remedial programmes necessary. At extra cost, KIST has as of September 2001 instituted a Foundation Semester for students to catch up on their mathematics or science or to be introduced to computer use or taught the other language of English or French in which proficiency lacks.

Student numbers fluctuate. It is steady where government sponsorship, a package of tuition and maintenance, is available, but that comes only to no more than half the annual intake. For others, the churches or other non-governmental organizations, must help or students must fend for themselves. All of the Institute’s part time students, constituting a third of the total enrolment, are fee-paying. Assistance from a Governmental Ministry or a parastatal is possible where a staff training programme is in place. There are other fees for which, sponsored or not, students must pay, usually out of their own pockets. These include the application fee, registration fee, caution fee and examination fee.

Given minimum daily wage of less than 1 USD, fees of any kind are burdensome. Ranging from USD 500 to USD 1308 for part -time and full time, fees are pretty steep. Government scholarships covering maintenance at FwR 25,000 (USD 45-50) provided to students monthly and tuition go to less than half of the Institute’s intake. Others must find other sponsors, from among parastatals, industry, the...
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churches and various NGOs. Discontinuity in sponsorship contributes to the fluctuation in numbers. Some who drop out of KIST do not drop out of school altogether, but only to transfer to other institutions charging the reduced fee. In line with one of the objectives of the KIST Strategic Plan to charge realistic fees reflecting the cost of operations, revision of fees currently leads to many desertions. Expatriate staff represent another dimension of costs that is not sufficiently appreciated. To attract the best, remuneration must be competitive while income transfers must be guaranteed. It adds up to a significant total in the Institute’s budget. Currently, at KIST, academic staff of 189 include only 27 PhDs of which there are only 6 Rwandans.

In response to these developments, at KIST, fees need not be paid all at once; payment by installments is allowed. Still, the records show a long list of debtors, unable to keep up with payments. Consultations have begun to set up a scholarship fund from which the better students may be provided relief. A percentage of earnings from income-generation is to be paid into the fund, to be fed also from other sources that are still under discussion. With expansion of the curriculum, the expatriate presence becomes more, not less, pervasive. The Institute’s Strategic Plan 2001 – 2006 has identified sponsorship of local staff for graduate studies abroad at 20 a year as the appropriate response.

Widely shared perception that higher education is a luxury or that Universal Primary Education is more urgent does not help fund mobilization. Reporting from a conference on educational costs in Uganda, “The New Vision” daily of as recent a date as April 10, 2003 quotes a Vice-Chancellor in Uganda as complaining that the cost of the university student at 5.6 million Uganda shillings per year could pay for 500 in primary school, teachers’ salaries and all. The daily is among the widest read in the sub-region to which Rwanda belongs, and coming from the head of a university in a country with a longer tradition of higher education, such views begin to impact negatively on policy on educational funding.

In Rwanda, the teacher population in primary school includes only 81.2 per cent trained. In secondary school, only 13.5 per cent of teachers have a Bachelor’s degree. 21.7 per cent others have a 2-year post-secondary diploma. Altogether, the percentage of teachers with qualifications beyond high school is 35.2 per cent strong or 64.8 per cent short. Granted that Universal Primary Education is the more urgent for being a human right as represented by various other commentators, the training of teachers, after all, belongs also to higher education, which makes investments in higher education at least as urgent. Happily for the country, the Kigali Institute of Education, established soon after KIST, is mandated to provide on a sustainable basis for the training of teachers as expeditiously as possible.

Already, basic education versus higher education finds resonance where educational funding is disbursed. At the current level, the unit cost per year for higher education does not discriminate between disciplines. It helps to have engaged in exercises of costing. Thanks to the build-up to its strategic plan, at KIST, there are alternative figures for negotiation with the Government Ministry of Education. While adjustment is yet to be made, KIST’s budget provided at USD 700 per Government sponsored student falls short by USD 608, as per the KIST calculation for engineering and USD 150 for management. The budget is not enough to pay staff salaries, services and maintenance. Buildings and equipment come on a separate budget.

Infrastructure

Space poses a challenge of its own. Though generous, the Ministry of Defence’s donation of the former Military Academy for KIST to begin is not enough. On the other hand, Rwanda is hardly the place to look for unoccupied land for expansion. Thinking is beginning to crystallize that the Institute need not be confined to one contiguous campus. Already, there is Remera Campus, some five kilometers from the main campus, where the Institute operates from a set of buildings donated by another Government Ministry.
Given the Institute’s involvement with community improvement, providing at site the learning facilities for waste management or the various biogas technologies might be the appropriate response to space requirement. Certainly, cottage industries belong more to rural rather than suburban Rwanda and for the better impact some of the Institute’s teaching facilities had better be where the action is. Discussion with the Post Office and other national institutions is in progress to use space in their buildings countrywide to do some of the things KIST has to do.

Coordination of a multi-site Institute is the other dimension to a challenge yet to be fully confronted. Meanwhile, with every new intake, the problem of space becomes acute at KIST. In consequence, the academic calendar runs differently for the different year groups as succeeding intakes are able to make use of classrooms only when others are on vacation.

Still more important is the matter of equipment. Strategic Plan 2001 – 2006 identifies the equipment needed at KIST for its various programs. But assembling the Institute’s requirements while donor funding is no longer readily forthcoming is another challenge. From the onset, the National University of Rwanda, 150 kilometers away, has permitted use of its laboratories during vacation. KIST also uses laboratories in institutions as far away as Uganda and Kenya. Obtaining at least 10,000 for a student population of 3500, the volume of books at the KIST Library which, as per the UNESCO Norms, should obtain at 20:1, is far from adequate. But books that are unavailable on the shelves may still be reached through the Internet or the Digital Library. Such indeed is the keenness demonstrated for Distance Learning that the Institute’s African Virtual University (AVU) complex is now one of five recognized centers in sub Saharan Africa where in collaboration with Australia’s Royal Melbourne Institute of Technology programs in computer science may be pursued to graduation.

Quality Assurance

The certificate of the Rwanda National Examinations Board which admits to the Institute provides an overall assessment ranging from Aggregate 11 downwards to 2 for passing. Students on the upper reaches of the aggregate ladder do not only have first claim to university places but may also register first for the more competitive disciplines. Often, however, an impressive overall score covers up for the weak subjects, which may be mathematics, physics and chemistry, the more critical for Engineering.

The Institute’s Foundation Semester is not able to remedy all defects at once. For ensuring that students receive adequate attention, the Institute has adopted various higher education norms respecting class size or staff-student ratios and staff work-load to keep teachers fresh for their duties. Still, overburdening of the teacher occurs for non-adherence to the time table which suddenly becomes overcrowded. It is noted also that where salaries are low, enthusiasm for extra-teaching in both regular and part-time programs is easily fuelled by hope of overtime payment.

For quality performance, students must also apply themselves during the entire period of study. Evaluation at KIST is on a continuous basis to provide an Interim Assessment which counts for 50 % of overall grading prior to the Final Examination which counts for the other 50 %. External Examiners’ reports provide to the Institute an assessment of how well quality assurance mechanisms in place are working. External Assessors are again in use when staff are to be appointed or promoted to the higher positions on the academic or management ladder. For a new institution in search of recognition to facilitate placement of graduates in employment or in graduate schools abroad for further studies, quality delivery must be the most critical challenge. The Institute now includes a Quality Assurance Directorate responsible for researching mechanisms for monitoring effective delivery of the Institute’s mandate.

Troubling Public Perception
But KIST is not without worries, not least perception that it is not urgently needed. Besides it is unfamiliar, not quite like the National University of Rwanda (NUR) which, coming after Le Grand Séminaire dating from 1936, is the better known institution. Established in 1963 and now including Faculties of Science, Arts and Social Studies, Law, Education and Medicine, with 5000 in enrolment, NUR is regarded by some to be adequate for the country’s purposes. In any case, for being called an Institute rather than a university, degree programmes were said to be inappropriate for KIST.

Status and the level at which programmes may be delivered at KIST have been resolved by Statute\(^9\) which mandates KIST to offer not only undergraduate but also postgraduate programmes, the first of which, a postgraduate diploma in demography and statistics has been approved to begin soon. A Master’s degree in Business Administration will be next. Still, students wonder whether awarded by an Institute rather than a university, their degrees would be recognized abroad. Assurances that for being designated an Institute, KIST is in the happy company of the Massachusetts Institute of Technology (MIT) and other famous institutions which are similarly designated make little impression on students and the public at large. For being so famous and well-marketed already, MIT probably does not agonize over its name. But KIST is not in that league yet, and may never get there if its designation begins to hurt. A new institution should be able to change its designation if the original does not reflect any more a mandate which has become broader, surely? Accordingly, the Governing Council has lately petitioned Government for a change of name to include “university”.

Others in Rwanda still want to see things done in familiar ways. Staff recruitment and promotions, even designations, must conform. Yet taking its bearings from a different model of higher education, the traditions must be different also at NUR, and they are not necessarily a useful guide to a new institution. Rather than conform for the sake of conformity, KIST is active in an effort to establish a conference of heads of institutions of higher education which meeting regularly will, hopefully, identify the better institutional practices for general guidance.

The arguments against new institutions coming up are the familiar ones of costs. The arguments refer also to the absence of jobs to be had by graduates if there are too many. To restate the justification, training for the better society remains true for all levels of education. Keeping on leash energies that otherwise might find harmful outlets is the further justification. There is not reminder enough that eventually having to build and manage rehabilitation centers for reclaiming idle hands from drugs and other harmful youthful habits can be the more costly. Still, not to provide opportunity for mischief where funding is disbursed, exploring opportunities for gainful employment for the school leaver remains a challenge.

In Rwanda, KIST is a keen participant at the President’s Economic Council which includes the Parastatals and the Private Sector on Graduate Utilization and others. Besides self-employment to be facilitated by the technology park, ideas canvassed include a period of compulsory National Service to assign the freshly graduated where they are needed. The military and the prisons where graduates are not known may now discover the difference that university-trained personnel could make. Industries, Government Ministries and Local Government employ graduates but not enough. The most exciting prospect is that of adding a module of pedagogy to all university programs to enable graduates to teach while waiting to be engaged in careers appropriate to their disciplines. There are vacancies enough in secondary schools to absorb all graduates in the foreseeable future. Remuneration pegged only a little higher than the value of the student bursary, National Service should enable the national business to be done at little cost.

IV. CORPORATE KIST

Government of Rwanda
KIST is a partnership, incorporated by Law passed since December 2001 and published in February 2002. The senior partner is, of course, the Government of Rwanda. None more than Government appreciates the country’s fragile economic condition. Of 26,338 square kilometers (10,169 square miles) and of very sharply dissected mountain area shared by a population of over 8 million, Rwanda has the highest population density ever. It is landlocked and without natural resources. The socio-economic profile shows also exports totaling USD 70 million, mainly of tea and coffee; lately also cobalt. Imports, mainly consumables, total USD 240 million. Per capita income of USD 230 is below the Sub-Saharan average of USD 350 while the daily minimum wage is less than USD 1.00.

On the other hand, it is noted that countries like Japan and Singapore, whose circumstances are not much different, more than survive. Their success is a source of comfort and hope. In those countries that Rwanda looks up to, adult literacy is close to 100% while enrolments in higher education are in double digits. There also, science, in particular, technology is prominent in the school curriculum. It is the ambition of the Government of Rwanda to make Rwanda one more knowledge-based society in the hope of all the advantages that come to countries like Japan and Singapore.

Regarded as the vehicle needed to travel the technological highway KIST is at the receiving end of much Government attention. The Government provided to the Institute premises vacated by the Ministry of Defence for the Institute to begin. Other infrastructural facilities have been added, mostly from Government budgets. From the start, the recurrent budget, including local salaries, has been provided by Government, which continues to pick up other items of expenditure for which donor-funding is no longer available. Expatriate salaries is the latest addition to a growing list.

Other Partners

As senior partner and majority share-holder, the Government of Rwanda retains the power to constitute the Governing Council of KIST by appointing the Chairman, the Rector and two Vice-Rectors, and bringing on board others representing other national interests such as Industry, the Private Sector, the Secondary Schools and technical schools.

Partnership with Industry does not end at representation on the Governing Council. The curriculum at KIST provides for Industrial Attachment to enable students to have experience with the handling of machinery at the shop floor. It helps eventual placement after graduation, if the employer knows the potential of the student. Initially, the Private Sector felt threatened by manufactured items like nails, candles and tissue paper which coming from the Institute’s Unit of Cottage Industry employs student labour as opposed to paid labour, and therefore could be priced below market price. Internet providers were concerned that their competitor, namely KIST, has computers donated to them from time to time or are assembled from parts also donated, who therefore can afford low charges. To allay such fears, KIST does not intend to put things in the market except in partnership with the Private Sector. Already, KIST is able to meet 35% of its budget from income-generation which also allow the occasional top-up to staff salaries. Joint ventures with the Private Sector should make for greater financial security to KIST.

Others in the partnership represented on the Governing Council include elected staff, academic and non-academic, and students. Student representation is relatively new to Rwanda’s higher education, and the KIST experience in particular is most refreshing. It is everybody’s prayer that it stays that way.

But KIST incorporated has other useful partners who might have been represented on the Governing Council. It is usual for councils elsewhere to have extra-territorial representation to bring the external perspective. While this does not happen in Rwanda, KIST still seeks cooperation from abroad. Through various memoranda of understanding, KIST has established linkages with many institutions to considerable advantage. The Institute’s initial curriculum was concluded under a memorandum of understanding with Jomo Kenyatta University of Agriculture and Technology, Kenya (JKUAT).
While the laboratories at KIST are yet to be fully equipped, there are other agreements reached with institutions in Kenya and Uganda to receive students from KIST to be taken through practicals. External Examiners are recruited from universities in and beyond the sub-region. Thanks to these connections, KIST is now fairly well known.

V. OBSERVATIONS

What is New?

KIST is “the new kid on the block” for being technological rather than a liberal arts institution. Starting without a Statute to define precise role does not happen every day. In the case of KIST this defect worked to its advantage. Possibilities respecting range of disciplines within Technology and levels of delivery could be explored without inhibition. Reflecting the Institute’s own vision and its reading of what ought to come first in national priorities, the Department of Information and Communication Technology had students to graduate before a statute became available in 2002, and it is not secret that the statute passed for KIST could not ignore what was on the ground already: established Faculties with Departments; functioning committees; and a donor-assisted strategic plan pointing to future directions.

Initially thought to be training only technicians or diplomates, the Institute could take advantage of the processes of strategic planning to set measurable goals in the short to medium term to identify KIST also with a degree-granting institutions sooner than later. Engaged by the African Development Bank (ADB) to undertake a labour market survey, the Educational Consultants of India (Ed CIL Ltd) has confirmed since August 2001 that every country needs also engineers in addition to technicians and craftsmen relative to its population. In the case of Rwanda, a total stock of 1500 engineers, 4,600 technicians and 14,000 craftsmen is required for its 8 million population. The total stock is to be augmented yearly by 8–10 per cent or 140 engineers, 400 technicians and 1300 craftsmen.

Without precedent in Rwanda, KIST has in enrolment the mature student and other non-typical student including the worker student who studying part-time takes longer to complete their studies. There is a spill over of the programs to the countryside where the rural population is learning simple technologies to manage the environment better and to enhance their economic status. The female to male student ratio is better than anywhere else in the country while uniquely at KIST, instruction is available in both French and English. Devices for monitoring for quality include External Assessors for staff appointments and External Examiners for student assessment. KIST begins to cost the public more.

Sustainability

No doubt, sympathy donations in the wake of the tragic events of 1990-94 have their place in the history of KIST. Beyond that, retaining the confidence of other sources of funding has proved important for sustainability. To retain their appeal, relevance capacity-building, graduate employability, poverty alleviation and community improvement can be shown to be no mere buzz words. No doubt, on account of its good showing so far, KIST enjoys the confidence of Government which now pays expatriate salaries, initially donor-funded.

At 23 times what obtains for local staff, expatriate salaries are indeed a heavy burden on Government. Easily also, salary disparities generate undue tensions in staff relations. Replacement of expatriates by trained Rwandans at 20 annually as per the KIST Strategic Plan is recognized by Government to be the best course of action for dissipating such tensions. But, from Government sources, there is never funding enough for higher education. Happily, through its Consultancy Services, Part time training programmes, In Service training courses, AVU and Distance Education and Technology Transfer, various programmes in Entrepreneurial Development, Cottage Industries,
waste matter treatment and Internet Connectivity, the Institute has tangible products for sale to add to income.

The relevant curriculum also sells. Besides computer literacy, the Institute is able through technology to access current global developments in curriculum for the benefit of its students. It speaks to the relevance of the Institute’s programme that part-time students are willing to pay for tuition. The training of teachers in Rwanda is the mandate of the Kigali Institute of Education, but proposals to provide pedagogic modules to enable students of other institutions to teach while teachers are in short supply is a KIST initiative which is appreciated by Government.

By Government policy, students at KIST must be able to work in two languages, English and French. Considering that the population in Rwanda is now part anglophone and part francophone, the policy is in the right direction. Among other advantages, employability is easily enhanced by proficiency in more than one language. Identified in the strategic plan, setting up a language laboratory easily attracts funding.

Not there yet, KIST recognizes the attractive campus and the vibrant extra-curricula to make the congenial environment for productive work. New buildings are coming up faster at KIST than anywhere else in the country. There is provision made in the designs for common rooms for staff and students. Meanwhile, paid for from income generated by the Institute, some of the discussions on the Strategic Plan were held one week-end at a lake-side resort where staff could relax. Policy is in place also to reward staff who go the extra mile such as contributing to consultancies. For a new institution, committed leadership is critical. It helps also to have the ears of decision-makers. KIST has the unique advantage. In enrolment in the part time programmes are wives of Parliamentarians and Government Ministers who are as good and extension of the Institute’s Public Relations machinery as could be had.

Involving mass participation, the ever-expanding curriculum requiring different modes of delivery to suit a varied clientele in the face of shrinking funding from traditions sources, higher education is now far more complex than can be effectively run part time by academic professors. At KIST, the position of Rector and two Vice-Rectors for Academic Affairs and Administration is full time. Happily also, at the continental level, the Association of African Universities runs periodic workshops for the benefit of academics who find themselves in management. The International Association of University Presidents and the World Bank are among other international bodies that also provide platforms for discussing new developments. A new institution stands to gain from taking full advantage of those opportunities.

Higher education must be recognizable. Having to explain at every turn the pointlessly novel can be time-wasting. A beginner institute which does not have the stature of an MIT is easily misunderstood as to its mission or the status of its programs because of its designation. Swimming against the tide in sub-regional practices can also be unrewarding. Where the pass mark is more familiarly expressed by letter grade, anything different which then has to be explained to the prospective employer puts job applicants to a disadvantage against others whose transcripts do not require explanations. In terms, therefore, of terminologies, what goes into the academic calendar or its length, design of programmes or their duration, admission or graduation requirements, an institution is served well by identification with the norms of higher education. But innovativeness within conventional boundaries is still possible. The Project or Long Essay is common to most Bachelor’s degree programmes. At KIST, the Project is preceded by a period of Community Attachment to identify the problem to be addressed to make a difference to the community. Because of the policy of community involvement, KIST enjoys the community’s goodwill.

Finally, as investment in higher education is easily discredited by the reality or mere perception of graduate unemployment, putting graduates to work must have the final word. The scheme of National Service proposed for Rwanda is probably more elaborate than any going anywhere. The other
component for graduate employment include a Guidance and Counseling Services which will match individual graduate skills to going formal positions in the Public or Private Sector. There is also a Technology Park which will bring together budding graduate entrepreneurs and the Institute’s faculty to translate entrepreneurial visions to reality. Following screening by Guidance and Counseling Services graduates who cannot be immediately placed in the formal sector will be channeled to an Entrepreneurship Development Centre to undergo a 6-month training to see what they can do for themselves, beginning with learning to formulate business proposals for review and possible funding from a soft Loan Scheme, requiring no collateral. Loan recipients and their business proposals will next be admitted to a Technology Park to be under supervision for up to 3 years for a successful business to emerge from incubation, hopefully. The idea of a Technology Park is one of an interface of entrepreneurial promise, academic skills, mentoring, supervision and facilitation of various kinds under one roof. Thus, besides placement in the formal sector, the Technology Park also holds promise to serve as incubator for budding businesses. KIST leads the discussion in the forums that seek to confront graduate employment by such practical measures.

VI. CONCLUSION

For pioneering technological higher education, KIST is new to Rwanda. It has introduced the country to new skills, some of which, computer-based. It has provided access to higher education to the non-typical student. It has achieved a more favourable female to male balance in higher education. It is appreciated by the community. It has embraced the Private Sector and Industry as partners in providing instruction to students and in income-generating ventures. The Government of Rwanda is largely to be thanked for conceiving the idea of an Institute to promote technological higher education and for assuming increasing responsibility for funding while donor-funding is in decline. Between Government and Institute, there is mutual respect and confidence which the Institute works hard to retain, least perception of graduate employment begins to affect investments in graduate production. KIST remains in the forefront in exploring job-creation as much as job-placement. Exuding the pioneering spirit, staff, both local and expatriate, have been very supportive. There is committed leadership which encourages management training not least for itself. Above all, the Institute insists on remaining recognizable as an institution of higher education, committed to highest of its ideals of research, teaching and community service in that order.

The Author

Silas Lwakabamba. The author is founding-Rector of the Kigali Institute of Science, Technology and Management since its establishment in 1997. He has held various positions in academia beginning with lecturership in 1975 at the University of Dar-es-Salaam. He was promoted to professorship in 1981, and appointed Dean of the Faculty of Engineering in 1982. Other professional experiences include appointment to the UN-Sponsored African Regional Centre for Engineering Design and Manufacturing as founding Director of Training and Extension Services, 1985 – 97. Dr. Lwakabamba has served as member of various Boards of Directors since 1975 at national and international level including UNESCO, the African Virtual University (AVU), and the International Association of University Presidents (IAUP - African Chapter). He has authored 40 publications, holds a BSc degree in Engineering, and obtained his PhD from Leeds University in the United Kingdom.

Endnotes

2. STUDY OF TECHNICAL AND VOCATIONAL TRAINING NEEDS FOR RWANDA’S RECONSTRUCTION AND THE ROLE OF KIST, August 2001 executed by Educational Consultants Ltd. (Ed CIL) Noida, UP, India.

3. ACTION PLAN FOR CONSOLIDATION (APC) 2002-5, September 2002, a KIST Internal Initiative for bringing the Institute into alignment with the Norms of Higher Education.

4. “KIST STRATEGIC PLAN 2001–2006” incorporating APC 2002-5 was facilitated by DFID funding that also made available to KIST an expert from CHEMS, UK.


6. Fees: Engineering: FwR 532,000 (Full Time), FwR 319,000 (Part Time)
   Management: FwR 432,000 (Full Time), FwR 262,000 (Part Time)
   (FwR 536 = USD 1.00)

7. The quote is attributed to Professor S. Kajubi, Vice-Chancellor, Nkumba University, Uganda.


10. Ibid.

11. Ibid.

Other Readings
