

COVER



Mathieu Hagnery

STRENGTHENING OUR CORE BUSINESS

Progress Report 1997-2003

Contents

PART ONE

Rwanda In a Nutshell	3
Foreword	5
Our Vision	6
Our Mission	6
KIST at a Glance	7
Speedy Evolution, Solid Gains	9
Milestones in Education in Rwanda	11

PART TWO

KIST Today – Six Creative Years	13
A Donors League, 1997-2003	14
Academic Developments	16
KIST Legal Statute	20
Activities and Services	21

PART THREE

Why KIST is a Winner	28
The Address of H E Paul Kagame, President of The Republic of Rwanda	30
Pivotal Role of United Nations Development Program	32
The African Development Bank Steps In	33
Links with National and International Institutions	34
In Profile: an "A-Team" at KIST	36
Housing – Low Cost, High Quality	40
Perspectives and Challenges	41
Financial Summary	45
One for the Road... by Ms Consolee Rusagara	46
Abbreviations	47

Text Osei G Kofi, Media Consultant; Venuste Rusharaza, KIST
Design and print Pirozzi Productions and Handmade Brand Care, Johannesburg, South Africa
Photography As bylined

Sources *Rwanda Anew*, UNDP, Rwanda
Support to KIST, End of Project Evaluation, 2001, UNDP
Mission Report, John Farrant, Universitas Higher Education Management Consultants
Technical and Vocational Training Needs for Rwanda Reconstruction and Role of KIST, ADB–EdCIL India

Report production funded by UNDP, Rwanda
 © KIST
 October 2003

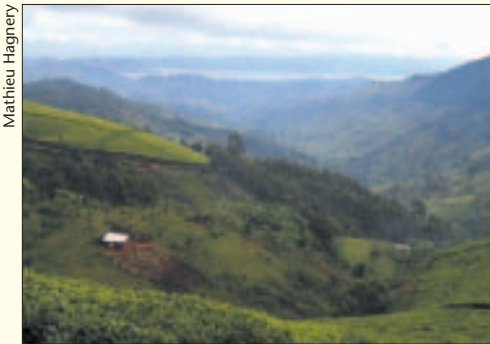
Kigali Institute of Science, Technology and Management
 Avenue de L' Armée,
 B. P. 3900, Kigali, Rwanda
 Tel: +250 – 574696/574698/751927/571929
 Fax: +250 – 571925/571924
 Email: info@kist.ac.rw
 Website: www.kist.ac.rw



PART ONE

Rwanda In a Nutshell

Mathieu Hagnery



Thousand Hills

Most of Rwanda, one of Africa's smallest and most densely populated countries, lies 1,500 meters above sea level, giving it a cooler climate than would have been the norm for the tropics. The topography, which inspired the country's sobriquet, "Land of a Thousand Hills", is a succession of rolling green hills inter-spaced by gorges, valleys, fast flowing rivers, springs, several mountain peaks and volcanic cones, marshlands and natural parks.

Premium Land

Rwanda came 162nd of 173 countries in the 2002 UN Human Development Index and 158th of 175 countries in 2003 – a significant improvement, as the 2001 position was 152nd of 162 countries. The GDP per capita of \$250 (2003) is sustained principally by the cultivation and export of coffee and tea, the mainstay of the economy so far. The total land area of 26,338 km² is home for 8.1 million people, giving a density of about 305 persons per km². No country in Africa has a higher density and only a few others in the world are comparable. Population growth is 2.9% a year, again, one of the highest in the world, although the fertility rate has fallen considerably in recent years, from 8.5% in 1983 to 6.5% in 1996. While 60% of the landmass is arable, it is the source of livelihood for a little over 90% of the population, mostly subsistence farmers. This translates into a density of 9 persons per hectare of arable land, quite crowded indeed and the source of degradation of the environment.

Uncommon Challenges, But Progress

Starting in 1959 Rwanda was wracked by ethnic massacres that culminated in the genocide of 1994 when more than 800,000 were killed in 100 days. The holocaust, a dramatic and traumatic blight for Africa and humanity in general, has been the subject of a growing number of books and studies. Rwanda's society will be dealing with the consequences of this trauma for decades to come as the nation comes to terms with itself and moves forward. A new all-inclusive constitution and presidential and parliamentary elections have brought to a close the post-1994 political transition.

As much as a third of Rwanda's population was displaced in the 1994 maelstrom and a large number of the housing stock was destroyed. Access to adequate shelter and land remains one of Rwanda's most critical challenges. Some 34% of households are headed by widows. About 13% of households are headed by children. About 26% of the under-14 age group are orphans. HIV/AIDS prevalence is about 12% in the 15-49 year age group. The sub-Saharan average is 8.7%.

Among the devastating consequences of the genocide is a dearth of skills in the professions, particularly in the applied sciences, technology and management. Half of the 19,000 teachers in Rwanda were killed and a number of university professors were eliminated. Of the 800 magistrates, 40 remained in the country after the war. Excluding the architects of the genocide arraigned before the International Tribunal for Rwanda at Arusha, Tanzania, there were more than 100,000 genocide suspects in detention by the close of 2002, among them many professionals, compounding the lack of skills the country faces.

The Government of National Unity, set up in 1994 under the terms of the Arusha Peace Accord, made national unity and reconciliation, poverty alleviation, good governance and human resource development benchmarks of the reconstruction program. The commitment to rapid growth was total and the international community gave a generous helping hand. Civil service reform, decentralization, empowerment and participation at the grass roots and modernizing the management structures of the economy were all pursued vigorously.

In 2001 the government adopted a novel, home grown approach to criminal justice and launched *Gacaca*, or "sitting on the grass", a community participatory procedure adapted from local tradition whereby tens of thousands of the detainees are sent to their home region for their culpability or innocence to be established by their peers.

Mathieu Hagnery



Looking to a brighter future

Debt, Hopeful Relief

Real GDP declined by about 60% in the wake of conflict in 1994. The flow of generous emergency aid helped boost GDP to pre-1994 levels in the first five years of recovery and in 2002 the GDP amounted to some \$1.7 billion. Growth rates since 1999 have averaged 6% (+9% in 2002). However, with a \$1.3 billion foreign debt the servicing obligation is crippling – about \$10 million every year – averaging between 15% and 30% of Rwanda's total export earnings of some \$80 million (2002). In 2002 about 70% of the \$325 million imports came from Kenya, Tanzania and Uganda, the principal trading partners.

Milestones In Rwanda's Annals

1959	Generalized massacres and flight of hundreds of thousands into exile.
1962	Independence from Belgium.
1973	Coup d'etat by General Juvenal Habyarimana. Beginning of one-party dictatorship.
1990	Rwandan exiles, under the banner of the Rwanda Patriotic Front (RPF) attack from Uganda. Civil war and military standoff.
1991	Ruling MRND enacts new constitution abolishing one-party rule and legalizing opposition parties.
1993	Government and RPF sign OAU brokered Arusha Peace Accord, agreeing to share power in interim phase in preparation for multiparty elections.
1994	Genocide. 1,000,000 Rwandans killed in 100 days.
1994	RPF wins war. Stops genocide. Begins pacification of the country. Government of national unity headed by President Pasteur Bizimungu formed under the provisions of Arusha Accord of 1993. Era of reconstruction and all-inclusive national identity begins.
1996	Genocide trials begin in Rwanda – distinct from the UN Tribunal in Arusha.
1999	First local government elections.
2002	Launch of <i>Gacaca</i> – traditional participatory justice process for more than 100,000 genocide detainees in Rwanda.
2003 (May)	Adoption of new Constitution.
2003 (Aug)	Presidential elections. President Paul Kagame in landslide win of the vote.
2003 (Sept)	Parliamentary and Senate elections. End of post-genocide political transition. Consolidation of new era. Unprecedented prospects for a brighter future.

In December 2000 Rwanda applied for relief under the Enhanced Highly Indebted Poor Countries (E-HIPC) initiative. Backed by the World Bank and IMF under the "Cologne Terms", Rwanda's foreign creditors pledged to shave off some \$850 million of the \$1.3 billion debt. But the government is not counting its chickens until the eggs are hatched.

Foreword

A Centre of Excellence in the Making

By Alfred G Kalisa, Chairperson, ai, KIST Council



KIST was a timely response to an unprecedented situation of acute shortage of qualified personnel in the Land of a Thousand Hills in the aftermath of the 1994 national tragedy, a veritable latter-day holocaust. When the clouds from the unspeakable evil finally cleared and the noxious dusts dissipated and we buried our dead, the loss in human capital and subsequent needs cut across all sectors of life and socio-economic activity – shelter, road construction, water, power supply, town planning, computer services, business management, banking – you name it.

The KIST Project

The government of national unity's seminal policy issued in 1998 to guide Rwanda's reconstruction and development, popularly called "Vision 2020", spelled out succinctly the needs and what had to happen to ensure

rapid development. The KIST founding "project" was one of the many initiatives that had to be undertaken to boost national reconstruction. Strategies in the Ministry of Education policies in the Poverty Reduction Program (PRP) included one that emphasized training in vocational and technological skills.

From November 1997 to November 2003, just six years in existence, KIST is fast establishing itself as a true center of excellence. The initial challenges were daunting indeed but with the government's dedicated support and the attentiveness of the donor community and all other partners and stakeholders, our growth, especially in program content, enrollment levels and infrastructure, has been tremendous.

Features of Growth, 1997-2003

- Students: 209 to 3,304.
- Staff: 29 to 490.
- Academic disciplines: 2 departments to 3 faculties with 17 departments, 1 school with 2 departments, and 1 full and 3 subsidiary centres.
- Capital Structures: 1 block and 2 rows of barracks to 4 blocks.
- Graduated first batch: 28 in computer engineering and ICT (2002), 34 in management (2002), 90 in Technology (2003) and 138 in management (2003).
- In partnership with a growing number of institutions of higher learning at home and abroad.

"Strengthening Our Core Business – Progress Report 1997-2003" is an account of where we have come from, how we utilized the resources and support accorded to us by the government, donors, partners and all other stakeholders. The journey is still long and we continue to count on the government, our partners and stakeholders as we move towards a bright future.

"The severe shortage of technicians and professional personnel constitutes an obstacle to meaningful development of all sectors. Lack of technical professionals in the fields of agriculture and animal husbandry hampers modernization of this sector. Lack of technologists, middle level technicians, and competent managers severely constrains the expansion of the secondary and tertiary sectors. The level of illiteracy is high in both urban and rural population. Obviously this hinders effective dissemination of information necessary for socio-economic transformation."

Vision 2020, Policy for National Development

Our Vision

Committed to advancing Rwanda's development by graduating highly skilled people for the country's economy and by providing technical and technological assistance and services to all sections of the community, KIST aspires to become a centre of excellence in science, technology and management education comparable in standard to the very best in the world.

Our Mission

- To equip students with advanced skills with a view to increasing manpower and capacity for national development.
- To promote research based on the disciplines offered at KIST.
- To disseminate the results of research through teaching, seminars, conferences, public lectures, publications and other appropriate means.
- To provide consultancy services to government, industry, the private sector and the community at large.
- To promote academic and non-academic information technology-related programmes and to extend the same to rural-based institutions, organizations, even individuals.
- To engage in income-generating activities with a view to creating awareness in lucrative investment.
- To collaborate with other academic, professional, technical and research institutions in and outside Rwanda for educational and technological development.
- To engage in technological innovations and establish mechanisms for transfer of the same.
- To develop and promote close collaboration with the private sector and the community so as to enrich relevance to KIST's programs.
- To make provisions for the advancement, transmission and preservation of knowledge and sustain intellectual life in Rwanda.
- To contribute to the cultural, civic and moral training of its members and to participate actively in the economic and socio-cultural development of the country.



Once a military academy, now an institution of higher learning

KIST at a Glance



Main campus – former military academy prior to construction of 3 additional blocks

The birth of Kist in November 1997 was a labor of love for a group of partners and stakeholders led by the Ministry of Education, UNDP (project executor) and GTZ (implementing agency). Seed funding came via the UNDP Trust Fund and the Japanese and Dutch overseas development aid, mainly. Promulgation of KIST status as a university came under national legal instrument No. 48/2001 of December 26th, 2001, which also provided for a governing council. On July 27th, 2002 the first graduates, of 62 degree holders and 403 diploma holders, passed out through KIST gates into the wide world.

Kist Structure

A governing Council, a Rectory and two subsidiary offices oversee and manage the work of three faculties, a school and centers that constitute the Kigali Institute of Science, Technology and Management. KIST offers courses leading to the award of certificates, diplomas and degrees. So far, post-graduate work is done in the Faculty of Management only.

Faculty of Technology

Has six academic and two service departments, leading to a diploma (3 years full-time and 4 years part time) and a degree (4 years full-time).

- Department of Electronics and Telecommunication Engineering
- Department of Electrical Engineering
- Department of Mechanical Engineering
- Department of Electronics and Communications Engineering
- Department of Civil Engineering and Environmental Technology
- Department of Food Science and Technology
- Department of Training Workshops/Service
- The Department of Cottage Industries Technology Unit/Service

Faculty of Science

- Department of Chemistry
- Department of Physics
- Department of Mathematics.

The faculty offers a foundation and remedial courses in its Bachelors program in Technology and Management. A Bachelors degree in Science with concentration in Geology, Meteorology and Mathematics is contemplated.

Faculty of Management

- Department of Accounting
- Department of Finance
- Department of Human Resource Management
- Department of Marketing
- Department of Hospitality and Tourism Management
- Department of Entrepreneurship Development

School of Language Studies (SOLAS)

- Department of English
- Department of French
- Department of African Languages

Centre for Continuing Education

The center focuses on evening classes.

- Division of Part-Time Studies
- Division of In-Service Training
- Division of Distance Education

The others are:

- Center For Gender Studies, and Women In Development (CGSWD)
- Center For Technology And Business Incubation (CTBI)
- Information and Communication Technology Service Center (ICT)



Photo courtesy of KIST

Speedy Evolution, Solid Gains

By Prof Silas Lwakabamba, Rector

New Kid on the Block

In November 2003 KIST turned six. The infant that so many people of goodwill in Rwanda and abroad helped to nurture is walking, taking tentative but determined steps into the big, wide world yonder.

The first graduands – 465 of them – left the gates of our institution on July 27th, 2002, armed with beautifully embossed pieces of paper that testified to the arduous months and years they had spent in this modest campus, equipping themselves with the skills, and hopefully attitudes, that would allow them to be of greater productive service to their community, country and the world at large. I reckon it would be in order to join hands and say to them: Bravo!

One would have wished the very idea to establish an institute of higher learning in the mold of a KIST had been born outside the unprecedented imperatives posed by the aftermath of war and genocide. However, the tremendous loss in human capital from the tragic events of 1994 had created an imperative: the need for a rapid, extra-conventional, practical, result-oriented structure in knowledge and skill acquisition in the sciences and technology such as civil, mechanical and electrical engineering. I am sure you will agree: KIST, in a mere six years, has responded quite well to the challenge.

The beginnings, quite modest, were indeed a learning curve for all. A handful of friendly governments and organizations, notably Japan and the Netherlands, directly or through a Trust Fund managed by UNDP helped get KIST started, on a small piece of prime estate in Kigali's Kiyovu suburb that had been the military academy of the Ministry of Defense. "Beating sword into ploughshare" couldn't have rung more true! We welcomed the first student intake of 209 and a teaching and ancillary staff of 32 in November 1997 ahead of a formal legal instrument defining KIST's full framework. The KIST Statute, Law No. 48/2001 of 26/12/2001 was gazetted on February 1st, 2002. For the first three years the donors covered all the recurrent costs including salaries. KIST held its inaugural graduation ceremony on July 27th, 2002.

A journey of a thousand miles begins with a first step –
an old Chinese proverb

Gathering of Expertise

Our initial curriculum was novel and ground-breaking, designed to train craftsmen in a year-long certificate course and incrementally make technicians of them in a two-year diploma and a three-year advanced diploma. We were assisted by experts from the German Agency for Technical Cooperation (GTZ), EdCIL and the Jomo Kenyatta University of Agriculture and Technology, Kenya, whose staff also served as external examiners. The institute cherishes very much its links through various Memoranda of Understanding with institutions in Australia, Burundi, France, Germany, Ghana, India, Kenya, Netherlands, South Africa, Tanzania, Uganda, the United Kingdom and the United States, as well as with the institutions at home here in Rwanda, notably, the National University of Rwanda.

Today, there are three faculties, a school and a full-fledged center and subsidiaries. The Faculty of Technology has seven departments, the Faculty of Science, three and the Faculty of Management, six, including one housing the Tourism and Hotel Management program. The School of Languages has three departments. The Center for Continuing Education has the programs of Part-Time Studies, In-Service Training, and African Virtual University (AVU) and Distance Learning.

(left) Practical training in one of the workshops



Mathieu Hagnery

For direction we sought advice from many. We had consultants come in. We ran consultative seminars and workshops. We devised a strategic plan.

To fully align itself to the demands of an institution of higher learning as per the 2001 university statute, KIST began to iron out the loose ends. In collaboration with staff and other stakeholders, including the private sector, civil society and international donors, KIST developed two key strategic overviews – Strategic Plan, 2001-2006 and Revised Strategic Plan, 2003-2008 – to guide its development. The Revised Strategic Plan contains 32 objectives, all endorsed by the GoR.

Doing Business

The Government's Decentralization Policy requires trained personnel to shape and implement various development plans, at the district and provincial levels. KIST is fully embedded in this task. Through our Outreach and Community Attachment programs, in agriculture, water supply, energy supply, appropriate sanitation and hygiene technology, low cost housing, feeder roads and bridge construction, KIST students have been appreciably relevant to the development challenge. From the onset, the private sector was invited to be partners with KIST in the training of students. Through our compulsory Industrial Attachment Program, students gain hands-on practical experience.

As a strategy of ensuring the sustainability of our activities, KIST started a number of income-generating activities as well as the commercialization of its research and development products and part-time teaching programs. The market ventures have enabled the institute to supplement by as much as 20% the gross budget covered by the government and other partners.

Before the first graduands left the gates of KIST, we told them that a number of them, hopefully not many, might not find work. They shouldn't sit at home and sulk – as if the world owed them a living. We urged them to pose the question "what can I do on my own?" or to colleagues "what can we do together?" If they had an entrepreneurial idea that needed a push, well, KIST was there to help out. Jointly, we would knock the idea into a viable shape. If it required going to the bank or to a particular government ministry, we would go with them and help knock on doors. In spite of the global economic recession, these are still promising times for the computer literate and the technologically trained person who has imagination and creative drive.

Word of Thanks

Acknowledgements are accorded to the government for the concerted effort from the beginning to today, i.e. leading the search for donors' aid in higher education, sup-

porting the refurbishment of the campus and facilities, head hunting qualified personnel and support staff and underwriting their passage and remuneration. Most of KIST's staff have origins in the countries in the Great Lakes region and beyond, namely Tanzania, Kenya, Uganda, India and the UK.

Our thanks go to UNDP and its successive Resident Representatives, and in particular, the incumbent, Mr Macharia Kamau. He has been a dynamic, ever attentive partner and a true friend of KIST. Thanks go to the governments of the Netherlands, Japan and the UK. Thanks to the ADB, GTZ, USAID and the World Bank, especially its former Country Director, Mr Edward Brown. We also acknowledge the many unnamed others who along the years responded generously to the "KIST Project". They all have our infinite recognition.

Nationally, no less deserving of thanks are Col Dr Joseph Karemera, who was at the helm of the Ministry of Education at KIST's inception, as well as Mr Emmanuel Mudidi and the Hon Professor Romain Murenzi. Thanks are also due to the Hon Dr Jean Damascène Ntawukulilyayo who was Minister of State for Higher Education during the initial years. Ever attentive to our needs and calls is the Minister of Finance and Economic Planning, Dr Donald Kaberuka. Thank you, Sir! Our gratitude and admiration go to the leaders at the Ministry of Defense who took the "beating swords into ploughshares" decision to vacate the compound of their military academy and offer it to KIST. Thanks also go to BEAR Architects and Fair Construction Company for putting up our new buildings without ever asking to see our bank balance!

Profound gratitude goes to KIST governing Council. The members had their inaugural sitting on July 22nd, 2002. That day they worked from 9 am till 6 pm – setting the tone of their commitment to their business. Right from the start we knew our Council was not going to be a rubber stamp outfit. We, staff and students, will endeavor to rise to the high standards the Council has set.

Finally, our heartfelt thanks go to His Excellency President Paul Kagame, for his vision and for his policy emphasis on science and technology in development, and especially, on the importance of information, communication technology in development. His decision to establish KIST to supplement the good work of the National University of Rwanda was bold and innovative. His Excellency's personal and constant interest and support is underscored by the many visits, formal and informal, that he has made to our campus to see us at work. He has been a source of great motivation, indeed. Yes, Sir!

Thus today, because of all the above and more, we can confidently declare: KIST is marching "towards a brighter future" for the betterment of Rwanda and Africa. We thank you all, our solid partners, our faithful stakeholders.

Milestones in Education in Rwanda

1936	First institute of higher education, "Grand Seminaire" opens.
1963	National University of Rwanda opens.
June 1996	Donors Round Table on Rwanda, Geneva. Consultations on gaps and unmet needs in education development.
1997-1998	New Public Institutions of higher education: KHI, KIST, KIE.
Mid 1997	Feasibility study by German experts (GTZ) for a higher institute of education in the mold of a KIST.
Nov 1997	KIST opens its doors: 209 students and 32 staff.
April 30 th , 1998	Inauguration of KIST.
June-Aug 2001	ADB-sponsored KIST review by Education Consultants, India (EdCIL). Publication of EdCIL findings.
Sept 2001	Planning Workshop, resulting in Action Consolidated Plan, (ACP) 2002-2005.
Oct 2001	DFID/UK-sponsored Evaluation Mission.
Feb 2002	KIST's University Statute is gazetted.
April 2002	32-Objective Strategic Plan 2001-2006 is published.
June 2002	Government endorses ADB-sponsored report by EdCIL.
July 2002	First sitting of KIST's Council.
July 2002	First graduation.
Dec 2002	Endorsement of the Consolidated Action Plan.
July 2003	KIST grows to 3,304 students and 490 staff.

Some of the government's policy documents with direct implications for KIST:

- *Strategy for National Development for the Year 2020 (January 1999) or "Vision 2020"*
- *Education Sector Policy (May 1998)*
- *Higher Education Sub-Sector Policy (June 2000)*
- *An Integrated ICT-led Socio-economic Development Policy and Plan for Rwanda (2001-2005)*
- *Proposal for the Establishment of Human Resource Development Agency (April 2001)*
- *An Approach to the Poverty Reduction Action Plan for Rwanda – The Interim PRSP (November 2000)*
- *Action Programme for the Development of Rwanda 2001-2010 (April 2001)*
- *Plan de Formation des Cadres Supérieurs Rwandais de 1996 à l'an 2005 (October 1996)*
- *Nouvelle Politique Industrielle-Republique Rwandaise Rapport Final (UNIDO 2001)*

"I consider KIST to be the axis of our Human Resource Development Strategy. I am encouraged by the progress made over such a short time, the realistic yet ambitious plans for the future. The Finance and Planning team will do everything in its power to support this vital institution. Best wishes."

Dr Donald Kaberuka, Minister for Finance and Economic Planning, Rwanda (May 6th, 1998)

PART TWO

KIST Today – Six Creative Years



David Mwara

Evolution 1997-2003

Established in November 1997, the growth KIST has achieved in the short span of six years can be described as “tremendous” – in terms of the shaping of appropriate technologies, academic curricula and the variety of academic and extra-mural development activities. KIST opened its doors with 209 students and 29 members of staff. By 2003, the student population had grown to 3,304, of whom 2,413 were full-time and 891 part-time. The staff complement had grown to 490.

Operations began with seed money offered by UNDP, and later, via the Trust Fund it set up and to which Japan and the Netherlands were the major contributors. The initial funding by UNDP (\$2.7 million), Japan (\$4.7 million)

and the Netherlands (\$2.4 million) went into the conversion and refurbishment of the barracks-like buildings of the Military Academy of the Ministry of Defense, now the KIST main campus. The funds were also used to buy equipment, recruit lecturers and cover the modest stipends paid to students, without which most would not have been able to afford higher education.

The UK’s Department for International Development (DFID) provided £1.7 million to support KIST’s development. This covered the provision of equipment and technical training, the establishment of the Center for Innovation and Technology Transfer (CITT) as well as the elaboration of the KIST Strategic Plan 2003-2006. The German government committed DM 3 million to support technical teachers’ training and the training of business advisers.

The World Bank through the Human Resource Development Project (HRDP) implemented by the Ministry of Education, Science, Technology and Scientific Research (MINEDUC) allocated \$1.4 million to support staff development, including the recruitment of expatriate lecturers and procurement of equipment.

The Japanese government, in addition to the contribution to the seed funding of 1997, financed the completion of the construction of KIST II, a 4-storey block. It also covered the cost of refurbishment and the purchase of equipment of some \$2.5 million. The KIST II block houses the library, the conference hall, four lecture theatres and some staff offices.

The African Development Bank (ADB) gave \$6.2 million for the purchase of equipment, books and in support of construction activities.

Key activities in the academic program, staffing, equipment procurement, infrastructure development and Outreach Services, as outlined in the KIST Strategic Plan 2003-2008, have already been accomplished. Others are at different stages of implementation. Achievements were made possible with the assistance of experts from Germany together with institutions of higher learning in the sub region and beyond. These include the Jomo Kenyatta University of Agriculture and Technology, Delft University of Technology, the University of Dar es Salaam and Makerere University Business School (Management), while the current curriculum has been developed with the assistance of EdCIL in 2001 with financial support from ADB.

(left) The wood fuel efficient oven that won the Ashden Foundation Prize for Renewable Energy (2002)

A Donors League, 1997-2003

DONOR	ACTIVITY	AMOUNT
UNDP Fund	Refurbishment of the former military academy. Purchase of equipment. Payment of staff salaries, students stipend.	US\$2,700,000
Government of Japan	Refurbishment of the former military academy compound given to KIST by the government. Purchase of equipment. Staff salaries. Students stipend. Completion of the construction of KIST II block.	US\$4,700,000
Government of the Netherlands	As above.	US\$2,400,000
Government of Germany	Training technical teachers and business advisers.	DM3,000,000
World Bank	Staff development and recruitment of expatriate staff and equipment. VSAT for KIST African Virtual University (AVU).	US\$1,400,000 US\$72,000
ADB	Equipment, books and construction of laboratory.	US\$6,220,000
DFID	Technology transfer project – CITT. ICT technical training project.	£1,700,00
USAID	VSAT donation, enabling KIST to be ISP provider.	US\$85,000



H E Joaquim Alberto Chissano, President of the Republic of Mozambique, during his visit to KIST (October 27th, 2002)

Organizational Structure

The structure provides for a rector and two vice rectors, one responsible for academic affairs and the other for administration and finance. A proposal for a third vice rector, who would be responsible for research and technology transfer, as well as for external relations, has been accepted by the Council awaiting government endorsement.

Office of Rector:

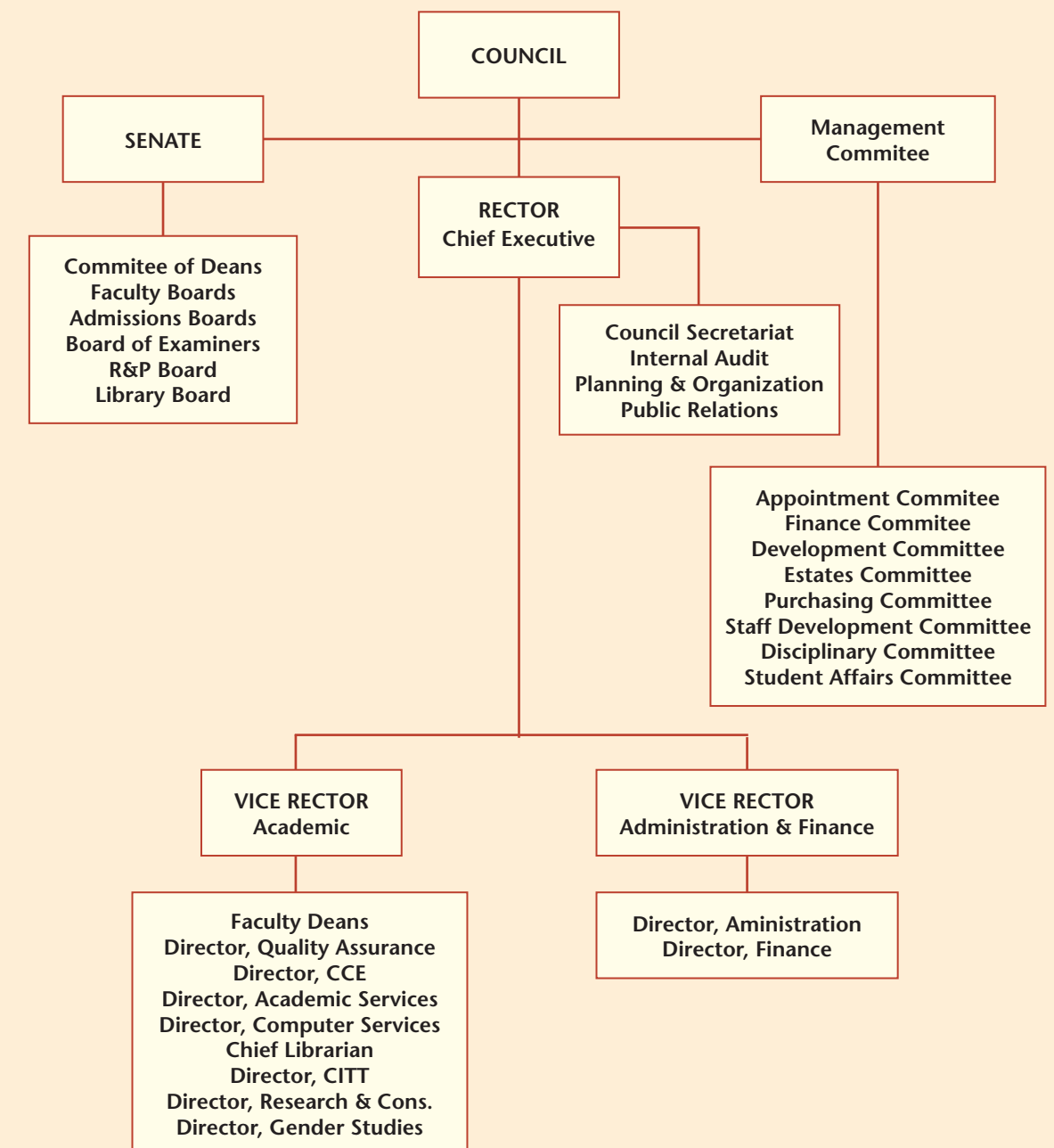
The chief administrative, academic and disciplinary officer. Responsible for the Council Secretariat, Internal Audit, Planning, logistics, public relations and international affairs.

Office of Vice Rector (Academic):

Is responsible for formulation of broad academic policy and overseeing its execution. The Vice Rector (Academic) oversees Research and Publication, Quality Assurance, student records and academic services.

Office of Vice Rector (Administration and Finance):

Is responsible for management support for the delivery of the institute's programs. The Vice Rector oversees General Administration, Personnel, Finance, procurement, stores and municipal services.



Academic Developments

David Mwarira



KIST first opened its doors with three departments (Engineering, Business Administration and Management and Languages) plus the Center for Continuing Education and the School of Language Studies. By 2000, the academic structure comprised:

- Faculty of Technology
- Faculty of Management
- Faculty of Science
- School of Language Studies (SOLAS), and
- Center for Continuing Education (CCE)

In addition, the Computer Center, the Center for Innovations and Technology Transfer (CITT), the Center for Research and Publications and the office of Quality Assurance were established. The most important academic

tasks that were undertaken during the period include shaping the new curricula, preparing for the proposed Center for Development Studies, restructuring new part-time programs in the Faculty of Management, introducing of diploma and degree programs in additional disciplines as well as reinforcing collaboration with other institutions of higher education, in and outside Rwanda.

The Foundation Semester: A compulsory semester of 15 weeks for full-time and 15 weeks for part-time students was introduced in 2001. This helps compensate for insufficient preparation backgrounds of some of the students. The Faculty of Technology requires foundation work in English-French, Physics, Chemistry, Mathematics, Basics of Technical Drawing, Computer Application and Library work. The Faculty of Management requires English-French, Business Mathematics, Computer Applications, Economics and Library work.

Regular Semester Schedule: Fifteen contact weeks for full-time and 15 contact weeks for part-time students.

Students, full-time and part-time, follow the same curricula, but the full-time program offers day and the part-time evening classes. Full-time students are in the majority. Candidates are admitted directly after Senior Six or the Advanced School Level. A good number of candidates are admitted without formal school qualifications. These are mostly mature students. The part-time study program was established mainly to cater for civil servants or private sector workers and the business community.

Faculty of Technology

ENTRY REQUIREMENTS

Engineering courses: A-level passes in Physics, Mathematics and Chemistry or equivalent.

Food Science and Technology: A-level passes in Chemistry and Biology or equivalent.

PROGRAMS

Diploma Programs: 3 years for full-time students and 4 years for part-time students.

Degree Programs: 4 years for full-time students.

The Faculty has six academic and two service departments.

(i) **Department of Computer Engineering and Information Technology** offers:

- Diploma in Computer Technology
- Bachelor of Science Degree in Computer Engineering
- Bachelor of Science Degree in Information Technology

(ii) **Department of Electrical Engineering** offers:

- Bachelor of Science Degree in Electrical Engineering

(iii) **Department of Mechanical Engineering** offers:

- Diploma in Automotive Technology
- Diploma in Electromechanical Technology
- Bachelor of Science Degree in Mechanical Engineering

(iv) **Department of Electronics and Telecommunication Engineering** offers:

- Diploma in Electronics Technology
- Bachelor of Science Degree in Electronics and Telecommunication Engineering

(v) **Department of Civil Engineering and Environmental Technology** offers:

- Diploma in Civil Engineering and Environmental Technology
- Bachelor of Science Degree in Civil Engineering and Environmental Technology

(vi) **Department of Food Science and Technology** offers:

- Diploma in Food Technology
- Bachelor of Science Degree in Food Science and Technology

(vii) **Department of Training Workshops (Service)**

complements the other departments in:

- Appropriate Technologies
- Carpentry
- Electrical (Domestic and Industrial)
- Welding
- Masonry

All first year engineering students undergo 15 days of practicals in each of the five workshops. Second year Civil Engineering students do four weeks of practicals in each workshop.

(viii) **Department of Cottage Industries Technology**

provides:

- Life-skills to students and the public inculcating in them the positive attitude of being job-creators instead job seekers.

Faculty of Management

DIPLOMA

BUSINESS ADMINISTRATION

Post Graduate: In Demography and Statistics (Population Studies): a two-year program comprising 4 semesters of 15 weeks each leading to the Post Graduate Diploma in Demography and Statistics/Population Studies.

Professional Program: Association of Chartered Certified Accountants (ACCA), Parts 1 to 3.

ENTRY REQUIREMENTS

Any two principal passes in Economics, Geography, Mathematics, Accounting and Commerce or equivalents.

PROGRAMS

Diploma: 3 years full-time, 4 years part-time

Degree: 4 years full-time, 5 years part-time

(i) **Department of Accounting**

(ii) **Department of Finance**

(iii) **Department of Human Resource Management**

(iv) **Department of Marketing**

(v) **Department of Hospitality and Tourism Management**

(vi) **Department of Entrepreneurship Development BACHELOR OF BUSINESS ADMINISTRATION (BBA)**

- Accounting option

- Finance option
- Hospitality and Tourism option
- Human Resource Management option
- Marketing option

POST-GRADUATE DIPLOMA

- Demography and Statistics/Population Studies.

PROFESSIONAL PROGRAMS

Association of Chartered Certified Accountants (ACCA).

Parts 1 to 3:

The Faculty plans to offer a Master of Business Administration (MBA) program in 2003.

Faculty of Science

Full time programs based on a four-year degree (BSc): Applied Mathematics, Applied Chemistry, Applied Physics, Statistics, Geology, Meteorology. The faculty also offers first year remedial courses in Chemistry, Physics, and Mathematics. These do not lead to any specific award. The Faculty of Science offers foundation courses in Chemistry, Mathematics and Physics. The programs do not lead to any specific award except for course grades for graduation in the Faculties of Technology and Management.

(i) **Department of Chemistry**

(ii) **Department of Mathematics**

(iii) **Department of Physics**

School of Language Studies (SOLAS)

ENTRY REQUIREMENTS AND POLICY

Entry into SOLAS is open to all students to promote implementation of the national bilingual policy. The school is tasked to nurture language skills, English-French and vice versa, among the students. The SOLAS Entrance Placement Test is given to entrants to determine levels of proficiency at admission. Bilingualism helps students to be competitive in the increasingly globalized job market. SOLAS awards Certificates in Language Proficiency. The idea of offering language classes concurrently with mainstream programs (which are conducted in either language according to the lecturer's preference) is to provide added opportunities for students to benefit from the language of instruction as well as students being able to build technical vocabulary from their specific mainstream disciplines.

(i) **Department of English**

(ii) **Department of French**

(iii) **Department of African Languages** (yet to debut: Kiswahili and Kinyarwanda)

KIST language program involves training, development and delivery of courses in English or French spread over three academic years. This ranges from general basic skills to training for competence in the level of the selected language needed for academic or other purposes. Vocabulary, grammar, and pronunciation are explored at all levels, with different degrees of emphasis, in the context of academic reading, writing, listening and speaking.

KIST lacks a language laboratory, a situation that makes practical work more onerous for the learners. The full-time

bilingual program is intensive, combining teaching, academic work, individual study and practice, analytical and critical thinking skills to prepare students to achieve an appreciable level of proficiency by the end of their study period at KIST. The course program takes three years, each of two semesters of 15 weeks or a total of 345 contact hours.

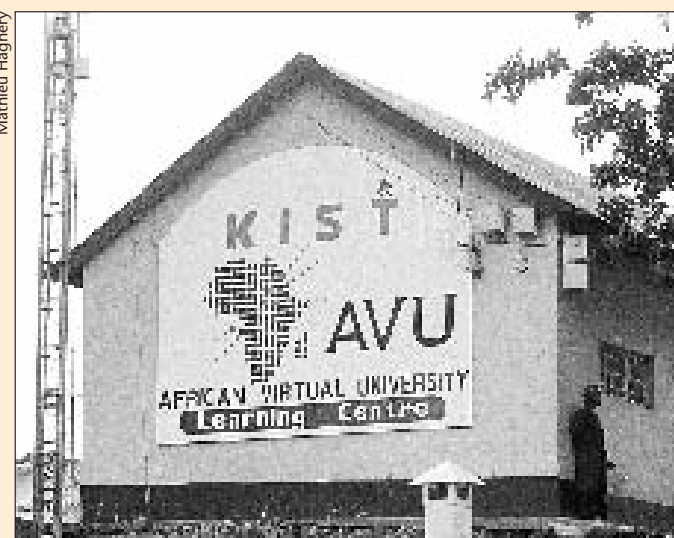
Center for Continuing Education (CCE)

The CCE was started in 1998 as part of what was then the Department of Business Administration and Adult Education. The components are:

- Division of Part-Time Studies
- Division of In-Service Training
- Division of Distance Education and African Visual University (AVU)

The CCE also offers the highly popular, and at competitive fee rates, courses: (i) Computer Applications (ii) Languages (iii) Management and (iv) Technology.

The department of Part-Time Studies and the division of In-Service Training offer tailor-made courses and seminars upon demand and has conducted training for the United Nations High Commission for Refugees (UNHCR), National Information Office (ORINFOR), Norwegian Peoples' Aid (NPA), United States Agency for International Development (USAID) and World Food Program (WFP), among others. The Distance Education project, including the African Virtual University (AVU) was set up with World Bank support in March 1999 and in January 2003 the AVU site joined the select number of African institutions of higher learning offering Degree and Diploma Computer Science Programs.



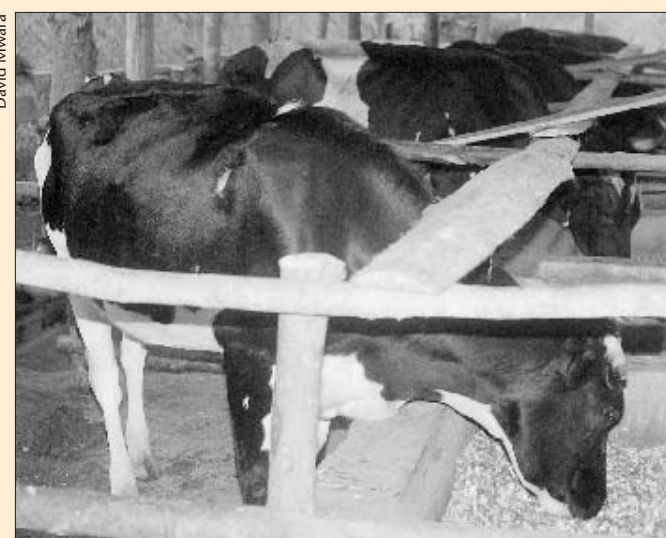
The AVU block on Kiyovu campus

Center for Innovations and Technology Transfer (CITT)

An invaluable dimension of the KIST program is the prominence of applied research leading to environmentally friendly appropriate technology innovations and subsequent transfer to the market place, particularly among the peri-urban and rural communities.

Technologies already being propagated include solar power for water heating, lighting and crop drying. They also include fuel saving bread ovens; waste water management installations and biogas production for cooking and lighting. The campus to community engagements also involve improvement of a rural feeder road, a low-cost housing project, post-harvest and crop storage and rain water harvest and conservation.

Through its Entrepreneurship Development, which includes the Cottage Industry and Production Unit, the CITT trains students in life skills development, particularly in poverty alleviation. CITT serves as a demonstration unit particularly for students in the Departments of Food Science and Technology and of Environmental Technology.

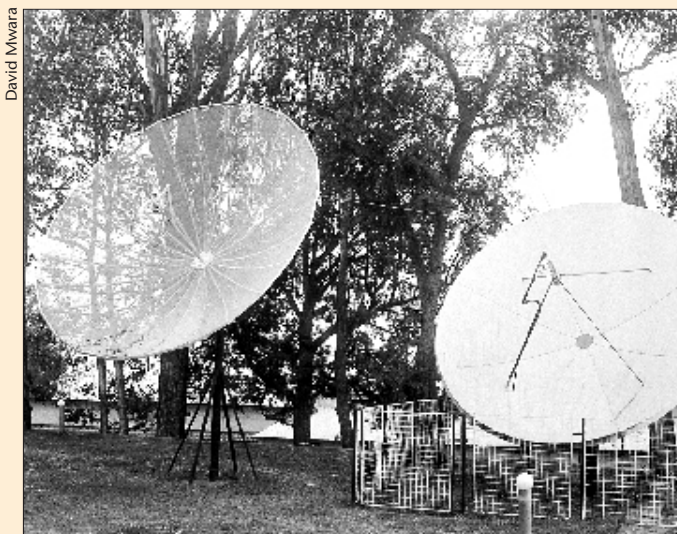


With a few animals (cows, pigs etc.), the household gets biogas for cooking and lighting

Center for Technology and Business Incubation (CTBI)

In the pursuit of technology transfer KIST has developed a mechanism to facilitate campus-market place linkage. The Center for Technology and Business Incubation (CTBI), still in its infancy, seeks to lead and manage activities that would bring together the campus/outgoing graduates with potential partners entrepreneurship in the market place. These partners would include demobilized soldiers, unemployed youth and rural communities seeking to initiate development projects as well as urban and rural women in income generating activities.

The center will be a multi-tenants facility, with shared services between the partners and stakeholders, namely, KIST, the government, the private sector and donors. It will seek to link talent, technology innovation, capital and know-how to leverage entrepreneurial talent for the development of new technologies and their commercialization. The center will look into accessibility of credit through the Entrepreneurial Revolving Fund (ERF). The CTBI has acquired a piece of land and has submitted the project to the government and the donor community for funding support to boost project implementation. In a nutshell, The CTBI seeks to bring together a variety of skills in science, technology and management to leverage entrepreneurial talent to accelerate economic development in Rwanda and region-wide.



With the installation of VSAT at KIST, accessibility to the Internet at the campus and for clients is assured

Information and Communication Technology Service Center (ICT)

The government's "Vision 2020" national development policy emphasizes the use of ICT as a vital component, particularly in the bid to position Rwanda as regional tele-service center. Today, KIST is a major Internet Service Provider (ISP) in the country (since 1999), following the installation of a "Very Small Aperture Terminal (VSAT)" donated by USAID.

KIST's ICT service center provides practical training and demonstrations to students of Computer Engineering and Information Technology. KIST provides computing services and consultancies in web page design and hosting, networking, development of software packages, e-mail and internet access, secretarial services, etc., to Kigali residents and the goal is to expand the services to other towns and, eventually, nationwide.

In collaboration with the DFID/UK, KIST has launched an intensive training program for ICT technicians drawn from the private and the public sectors for a rapid increase of the

pool of Rwandan technicians in hard and software repair and maintenance. KIST has in addition introduced CISCO Network Academy Program and Microsoft Certification Program on campus for both regular students and the private sector. KIST in collaboration with the Royal Melbourne Institute of Technology (RMIT) offers high quality distance learning using internet services via the AVU at affordable fees.

The Center for Gender Studies, and Women in Development (CGSWD)

The promotion of gender equality and equity is a fundamental plank in Rwanda's development framework. The strategies incorporate mechanisms to facilitate gender mainstreaming in the development process.

These include the Beijing Secretariat, which is following up on the Beijing Platform of Action, the Forum for Women Parliamentarians, Women Councils and provisions in the national constitution for the elimination all forms of discrimination including gender discrimination and promoting women's social and economic empowerment in general.

The Center for Gender Studies and Women in Development (CGSWD) promotes human resource development by targeting women as key change agents in the transformation of society, specifically, in the transfer of skills and appropriate technology to rural communities.

- The CGSWD has three departments:
- Department of Gender and Technology
 - Department of Media
 - Academic programs



Jam and fruit juice making in the Cottage Industries Unit

KIST Legal Statute

Promulgation of KIST status as a university was formalized under Legal Instrument No. 48/2001 of December 26th, 2001. It provided for these organs and responsibilities:

- **The Council**
- **The Senate**
- **The Management Committee**
- **Faculty, School and Center boards**

The **Council** is supreme and makes final decisions in all domains. It meets every quarter. It is comprised of the following:

- Chairperson and Deputy
- Rectors
- Representatives from government i.e. Ministry of Finance and Education
- Representatives from the private sector
- Representatives from the students' body (both sexes)
- Representatives of heads of secondary schools which students who join KIST come from

The **Senate** has supreme and ultimate academic and research authority. It prepares and designs the academic policy of KIST. It sits once every two months. The members are:

- Chairperson (being the Rector)
- Vice Rector (in charge of academic affairs)
- Directors of centers and heads of departments
- Chief librarian
- Representatives of the Faculty's Centers and Departments
- Two representatives from the students' body.

The **Management Committee** monitors and reviews all duties allocated to each organ i.e. academic, administrative and managerial activities. It is comprised of:

- Rector and Vice Rectors
- Faculty deans
- Directors of centers
- Heads of departments
- Director for finance
- Chief librarian
- Head of general administration of deans of students

Faculty, School and Center Boards – The Council on recommendation of the Senate determines the structure of the Faculties. The Senate establishes a board for each faculty or center that co-ordinates all academic activities at all levels.



Photo courtesy of KIST

A line-up of dons from various institutions at the KIST inaugural graduation

Activities and Services

David Mwarira



Community Attachment

Curriculum for most courses at KIST includes a four-week community attachment. Students stay in village communities to get a better grasp of the problems therein. From their feedback, KIST then collaborates with the local development bodies to design a training component of the degree course that would also ensure optimal acquisition of life skills to benefit the rural and other disadvantaged communities.

Students' Projects

A team of KIST civil engineering students in collaboration with visiting German students from the FachHochschule, Muenster, constructed the first suspended foot bridge in Rwanda. The five-month community support project was funded by the German Embassy. Today the bridge has helped break the isolation of the far-flung communities around Mbirurume, along an axis connecting three provinces – Kibuye, Gitarama and Gikongoro.

KIST students run several outreach services to propagate appropriate technologies either developed at the institute or acquired from other centers of learning and countries and tested under Rwandan conditions. These outreach services are undertaken at different training centers or demonstration units around the country.

Other Important Facilities and Services

Career Guidance and Counseling Center • Library (occupying two floors in the KIST II Block) • English Reading Room with furniture purchased by the British Embassy in Kigali • Internet Café • Consultancy Bureau • Translation Unit • Sports facilities for Basketball, Volleyball, Football, Martial Arts and Handball • Staff and Students Canteen • Two Large Conference Halls.

Membership and International Co-operation

KIST is a member of or is affiliated to several universities, colleges and other educational institutions and associations, national and international. These include:

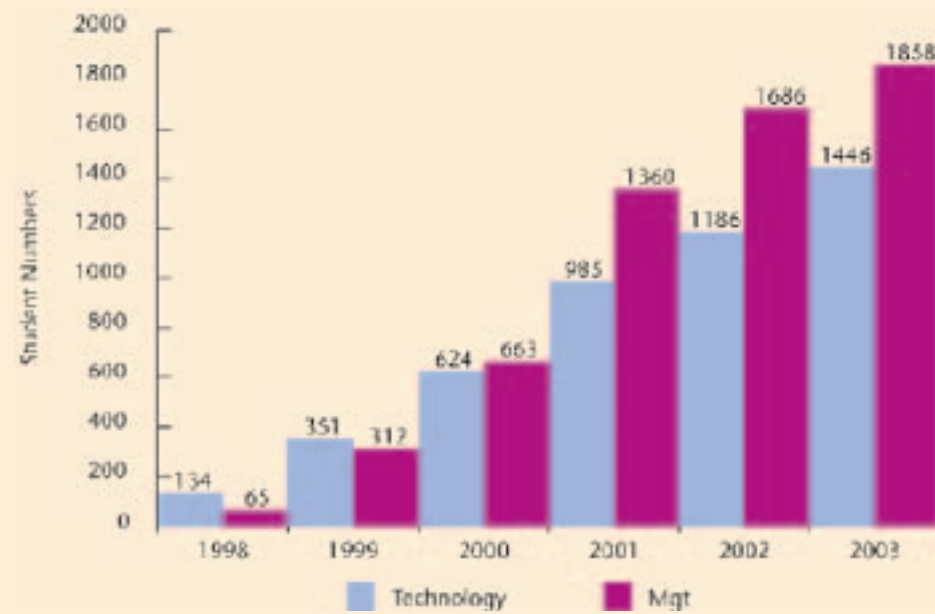
- Association of African Universities (AAU)
- Association of Francophone Universities
- International Association of Universities
- UNESCO Center for Engineering Education in Africa
- UNESCO-based African Network for Scientific and Technological Institutions (ANSTI)
- The Royal Melbourne Institute of Technology (RMIT), which supports KIST in running distance computer courses (diploma and degree).

KIST, in partnership with Harvard Business School (HBS) will be running tailor-made executive programs targeting senior level managers from Rwanda and the region. In October 12th to 19th, 2003, the first executive course "Making Markets Work" was conducted.

Student Numbers

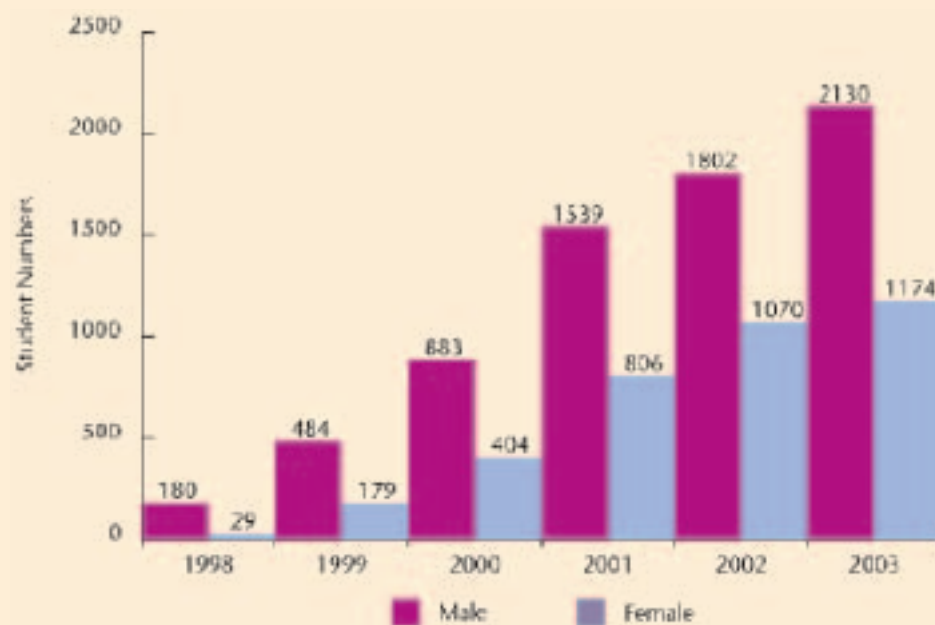
The student population grew from 209 in 1998 to 3,304 in 2003 – an increase that went in tandem with the increase in the number of faculties and departments. Full-time students constitute 73% of the student population. More than 90% of part-time students are enrolled in the Faculty of Management. The rapid increase in the part-timers (over 700%, 1999-2003), called for extra staffing and/or academic staff time, but had the advantage that the same facilities (lecture theaters, chairs, books etc.) were used by both streams. The corporate target is to be able to absorb an annual full-time intake of 600 students from 2002 onward: 360 in the Faculty of Technology and 240 in the Faculty of Management.

STUDENT NUMBERS BY FACULTIES, 1998-2003



The number of female students increased from 29 or about 14% of the total student population in 1998/9 to 1,174 or equivalent to 36% in the 2003/4 academic year. KIST is doing its best to promote gender balance in student intakes. The overall percentage of female students at KIST has been maintained to about 30% beginning from 1999/2000 to the current academic year. According to KIST target of increasing the percentage of female students to 35% by 2006, taking 2001 as the reference year, the target is achievable.

STUDENTS BY GENDER, 1998-2003

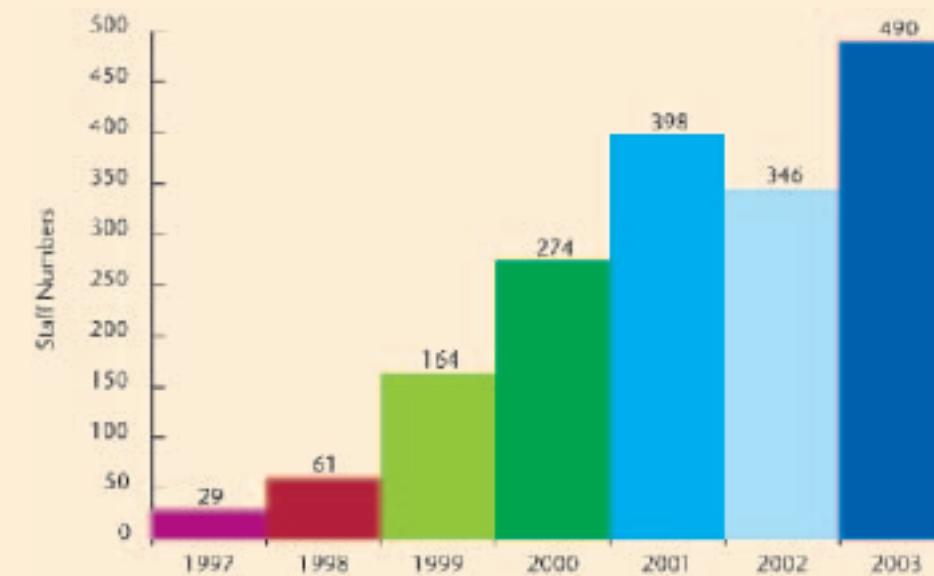


KIST Staff

KIST staff are in three categories (a) Academic (b) Administrative, and (c) Support staff. There has been a steady increase in the staff numbers over the six years, though the rate of increase is relatively higher for the support and academic staff categories than that of administrative staff.

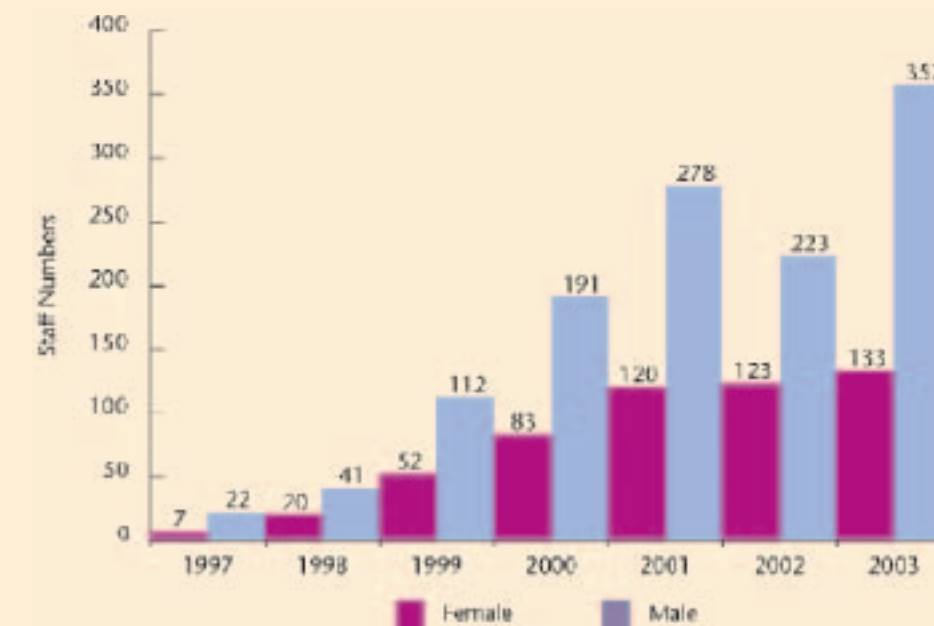
The number of staff has increased from 29 in 1997 to 490 by July 2003. The increase reflects the expansion in activities, academic and non-academic. The academic, administrative and technical staff categories form 34% and 17% of the overall staff strength, respectively, whereas, the remaining 49% are the support staff including secretaries, drivers and watchmen. The number of technicians has increased over the years as a result of increased tasks in the workshops.

STAFF INCREASE, 1997-2003



Females make up 27% of total KIST staff, however, the majority of them are in the support staff category. The female percentage among the academic staff is even lower – 15%.

STAFF BY GENDER, 1997-2003



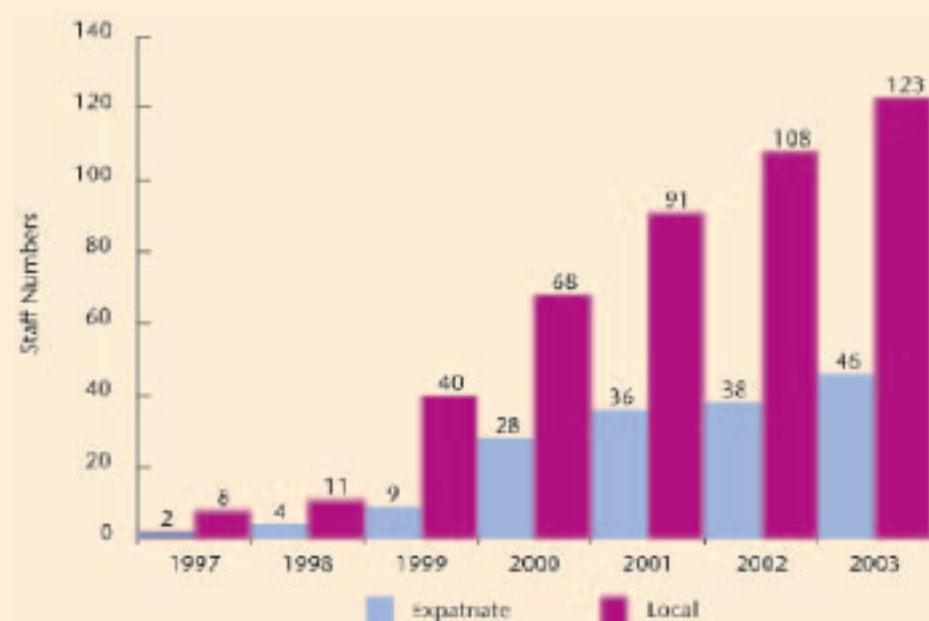
Academic Staff

The number of academic staff rose from 10 to 169 between 1998 and 2003. The number of expatriate staff has fallen to 27% from 29% in 2000 – one of the outcomes of an aggressive effort to recruit and train local talent. Thus so far, of the 169 academic staff more than 70% are Rwandans. The others hail from the sub-region, Asia, Europe and the US. A majority of the academic staff hold Bachelor's degrees (57%), followed by Masters' (28%) and 15%, PhDs.

Staff Development

For sustainable growth, the need for a vibrant training program for local staff, the majority of whom are holders of Bachelors' degree is urgent. More than 70% of these are working towards a Masters degree, and 19% are in PhD programs in different areas of specialization. Some 50% of these are studying in India, at the Velore Institute of Technology.

ACADEMIC STAFF (EXPATRIATE AND LOCAL), 1997-2003



STAFF STUDYING ABROAD, 2003

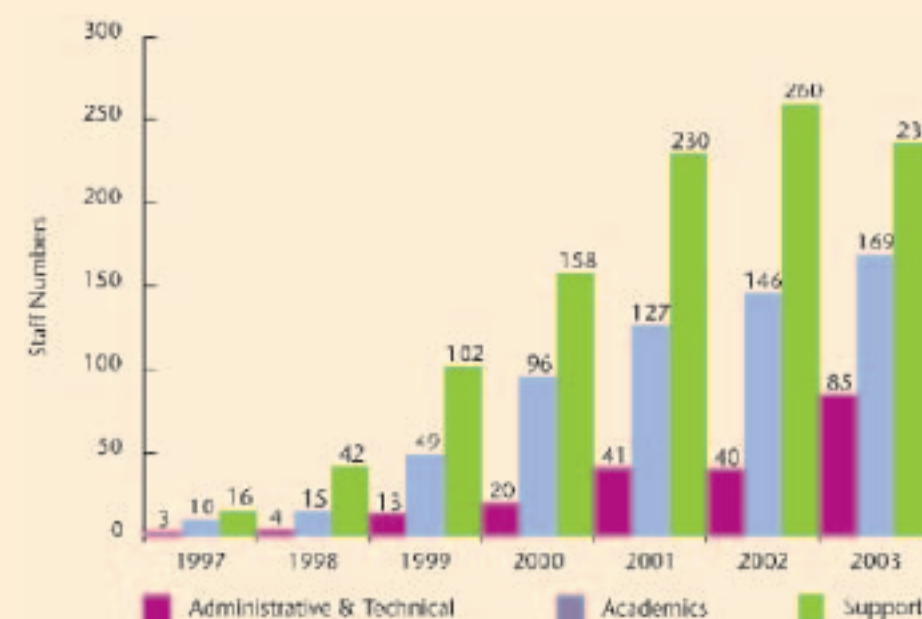
	PHD	MASTERS DEGREE	POST-GRAD DIPLOMA	TOTAL
France	2	–	–	2
Germany	1	–	3	4
United Kingdom	1	1	–	2
USA	–	5	–	5
Hong Kong	–	1	–	1
India	5	20	–	25
Kenya	–	1	–	1
Scotland	1	–	–	1
South Africa	–	8	–	8
Uganda	–	3	1	4
TOTAL	10	39	4	53

In 2002, about 5% of mostly technical support staff attended short courses ranging from 1 to 9 months, abroad. Over 60% of them went to ESKOM, South Africa, for courses in the electrical, electronics, welding, mechanical, hydraulic engineering etc. Others have been to Egypt for welding and sheet materials courses, France (human resources management), Glasgow (ICT), Brussels (information management) etc. It is also important to note that during the 2001-2002, a total of 22 KIST staff rejoined KIST after completion of their study programs abroad, including 12 with Masters' degree and 10 from ESKOM. According to the program, about 40 members of KIST staff are expected to complete post-graduate studies abroad, 75% of whom will be Masters' degrees, 13% PhD and the rest other certificates/awards.

Administrative/Technical and Support Staff

These two categories of staff combined make up more than 65% of total staff, whereas the support staff alone form 48% of the total staff strength. These include secretaries, office clerks, watchmen, drivers, messengers, nurses, cleaners, cooks etc. who are vital for the smooth running of the institute's administrative and welfare activities as presented on the figure below.

ADMINISTRATIVE AND TECHNICAL, ACADEMIC AND SUPPORT STAFF, 1997-2003



The administrative staff, on the other hand, includes the highest qualified administrative cadres of KIST's central administration, the Rector, and the Vice Rectors (Academic Affairs, Administration and Finance) together with all staff assisting them in accomplishing their of day-to-day responsibilities.

Infrastructure Development

KIST opened in buildings in Kigali's Kiyovu suburb acquired from the Ministry of Defense and which were previously in use as a Military Academy. The barrack-like structures were remodeled into administrative offices, computer laboratories and workshops. Other acquired buildings were the former "La Colombiere Primary School" at Remera, the other side of town, which now houses science laboratories and the Center for Innovation and Technology Transfer (CITT). The Kiyovu campus has been expanded with three new buildings, two four-storey multi-purpose blocks, KIST I and II. The third, KIST III, is six-storied and is yet to be completed.

In exchange of the prime property acquired from the Ministry of Defense that became the KIST campus, the institute undertook to construct medium to low cost residential units for members of the Rwanda Defense Force. This grew into the "Low-Cost Housing Initiative" under which 10 one to three bedroom units are being constructed at Camp Kigali, close to the International Airport. They will house about 40 families when completed.

The housing initiative has brought KIST to experiment with the use of new appropriate construction materials, sourced from the local market.

Equipment

KIST has through the years acquired various teaching and demonstration equipment from different donations with-in projects carried out over the years. Most of the workshop equipment was procured in Nairobi, Kenya, and the rest, locally. GTZ donated about \$300,000 in equipment, which included: (i) drilling, sheet metal shearing, guillotines and rolling machines. Others were AC Welding Transformer and accessories and various hand tools (ii) Drilling machines, circular saws machine, band saw machine, wood lathe combination wood workshop machine, cross cutting machine (Carpentry Workshop); (iii) Electrical Installation – main switch board, drilling machines, bench motors, etc; (iv) brick making machines, concrete vibrators, demolishing hammer, concrete mixers etc. (Masonry Workshop); (v) AC Welding transformers, DC Welding machines, Oxygen/acetylene equipment etc (Welding and Fabrication). In addition, KIST has a substantial stock of laboratory equipment acquired through various donations and procurement.

KIST has 346 computers, of which 246 are for students (1 computer per 20 students) and the remainder (100) for staff.

Estates Department

The Estates Department was created in 2000 to provide and sustain a physical environment conducive to a center of academic excellence. The department oversees building and ground maintenance, allocation of space, security, etc, at the Kiyovu and the Remera campus.

The department has 99 staff handling different responsibilities.

GLOBAL Services Ltd. was subcontracted to provide cleaning service and daily garbage collection. The institute operates a central switchboard with 32 extensions. Upgrading work to 116 lines is in progress. The institute has also established several direct lines that operate on the prepaid system.

Students Affairs

Under the Dean of Students, the department oversees student residences, games and sports, worship, counseling, guidance, and placement. Disciplinary matters are also handled under this department. It runs four hostels: These are Claude Dusaidi, Kicukiro, Remera, and Red Cross hostels. The new system of cost sharing introduced by the Ministry of Education, resulted in privatization of the cafeteria services, where students now pay for their meals.

Sports, Games, Exchanges and Cultural Activities

KIST is represented on the National Federation of Rwandan Universities Games. In June 2002 Inter-class competitions in volleyball, basketball and soccer were organized. Indoor sports such as pool, chess and karate have been introduced.

Some achievements in sports in 2002

KIST Rugby club won the trophy of the National league in 2002 • Mens basketball team won a Silver medal (NUR, gold) in the Rwandan Inter-University games • Mens Volleyball team won the first trophy in the Eastern Africa Inter-University games held in Dar es Salaam, Tanzania, in 2002 • Ladies basketball team emerged first winner in the same competition • Handball team won the first trophy in the National Heroes Day competition.

David Mvura



BEFORE...



AFTER...

First suspended footbridge in Rwanda, constructed by KIST students and visiting German students and funded by the German embassy

International activities

February 2002 – REGLA, an African Great Lakes student's network was created • July 27th, 2002 – KIST hosted the 4th ordinary session of REGLA, attended by university students from Burundi, DRC, Uganda, and Tanzania • Two students from University of Muenster, Germany, worked with KIST students to construct a foot bridge in the province of Kibuye • July 1st to 12th, 2002 – female students attended the International Institute of Women in Engineering Conference in Paris, France.

Medical Services

KIST has two medical clinics – at Kiyovu and the other at Remera campus, providing basic medical care to the community since 1998. The increase in the number of cases attended at both clinics has been significant.

HIV/AIDS & Others: Acute Respiratory Tract Infections (ARI) rank highest among the top ten most diagnosed infec-

tions, followed by malaria. This reflects the trend reported in other health facilities in Rwanda. The number of patients with herpes zoster and sexually transmitted infections is also remarkable. In February 2002, a project to encourage behavior change among students was launched by the KIST AIDS control Club la Lumière. It involves training of peer educators on HIV/AIDS. Some 32 peer educators from six institutions of higher learning, including KIST were trained. The project also involved production of sensitization materials and demonstration of proper condom use. KIST plans to establish a counseling center to deal specifically with HIV/AIDS. UNESCO supported the participation of one staff member in an international conference on Guidance Counseling and Youth Development, held in Nairobi, Kenya, from April 22nd to 26th, 2002. ACTION-AID pledged to provide testing equipment, a computer and furniture for the HIV/AIDS counseling center.

CLINIC ATTENDANCE OVER THE PAST FIVE YEARS

CASES/YEAR	1998	1999	2000	2001	2002
New cases	523	677	897	900	1,197
Return cases	1693	2779	5362	8139	9,962
Referral cases	42	83	179	133	359
TOTAL NO. OF CASES	2258	3539	6438	9039	10,925

Income Generating Activities (IGA)

Within the mandate to teach and carry out research and development (R&D), the concept of close and effective community linkage has been accorded due emphasis at the institute with the primary objective of transferring technological capacities to the wider Rwandan community.

Secondly, there is a constant need to generate income required to bridge the finance gap.

For 2003 KIST expects to generate \$537,673 net from its IGAs. See the breakdown below.

REVENUES FROM KIST ACTIVITIES

FIGURES IN US\$

SN ^o	ACTIVITY	1998	1999	2000	2001	2002	2003
1	Production Unit (firewood and charcoal cooking stoves, fuel efficient firewood ovens, biogas and bio-latrines, bakery utensils, telephone and photocopying, etc.)	26,837	118,805	208,950	100,625	304,339	292,194
2	Cottage Industry	–	–	8,301	1,725	1,230	–
3	ICT	–	–	–	132,690	18,388	(20,870)
4	AVU	–	–	8,347	6,070	6,630	1,860
5	In-Service Training	–	16,266	–	–	15,632	13,582
6	Part time / Regular Students	–	68,929	806,103	709,488	344,185	250,907
7	Consultancy Services	–	–	–	4,059	9,156	–
	TOTAL	26,837	204,001	1,031,702	954,657	699,560	537,673

PART THREE

Why KIST is a Winner

- Eschews the "Ivory Tower" way of doing things
- Offers space for non-formal school candidates, workers or mature students to come in, catch up and realize their potential
- Promotes classroom-community linkages
- Seeks immediate service to the community
- Values practical, hands-on approaches
- Adept at problem solving
- Result oriented
- Modest outlay for R&D, yet quick, proven, tangible results
- Promotes ICT, propagates computer literacy and runs Internet café service in the community.

The impetus for KIST to weave practical results into academic work (production and consumer goods and services with immediate benefits to the community) was provided by H.E. President Paul Kagame. Thus from the onset faculty and students put some resources, however modest, into building an aggressive R&D culture. This very quickly led to the establishment of the Center for Technology Transfer – CITT – the umbrella for the simple, useful, low cost products showcased here.

CONSUMER GOODS AND SERVICES KIST HAS COMMERCIALIZED ON THE LOCAL MARKET



David Mwarira
A digester under construction

Biogas Digesters: KIST has been in the forefront in the propagation of biogas technology in Rwanda and beyond. The need to stem the destruction of the forests for firewood and protect the environment through the treatment of human wastes for biogas production has been one of the objectives of this KIST activity. KIST has introduced biogas technology to schools, hospitals, health centers, the prisons and military barracks. A 60m³ digester installed at a school or health center cost about \$27,000.

In 2000 and 2003, KIST installed two major human waste management and biogas generation systems at Cyangugu prison (6,500 inmates) commissioned by the government in collaboration with the Dutch government. The project, Phase I and II, (550,000-litre digester system) brought \$130,000 into KIST's kitty. However, the real impact is the saving of the forests around the prison. A by-product of the digester

is biogas, which is now used in the prison kitchen. Thus firewood consumption from the dwindling forest around the prison, has been cut by 75% as a result of the KIST project.

Firewood supplies to all of Rwanda prisons cost the government some \$1 million annually. KIST is supervising the construction of another unit of the anaerobic treatment of human waste and biogas by-product in Nyanza, southern Rwanda. It will treat the excrement of 10,000 inmates. The unit will be the biggest of its kind in Sub-Saharan Africa.

KIST is also installing 1,000m³ digesters at Mpanga prison, Kabagari District, for \$220,000. It is also installing smaller household biogas units, using cow dung, at Kicukiro, Masaka and Kabuga. A household biogas plant of about 16 m³ cost \$1,000, the medium, \$1,500, and the large, \$2,500.

Fuel-efficient Oven: It is designed to burn wood, charcoal, briquettes or biogas and is suitable for medium to large establishments, especially where access to electricity is a problem. The "KIST Oven" won the 2001 Ashden Foundation International Award for Renewable Energy, held in London, and brought home the \$40,000 prize cheque presented by HR Princess Anne. The KIST Oven is extremely economical, using about a quarter of the wood normally needed by other wood fired ovens. Two sizes are on offer: the medium at \$800 and the large at \$1,600. The chefs at the students



Photo courtesy of KIST
Fuel-efficient oven

restaurant on campus and at the canteen in the barracks of the Presidential Guard Corps are among the satisfied owners of the KIST Oven.

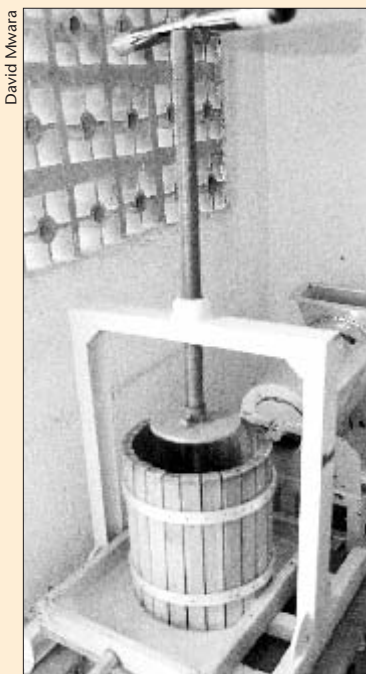
Fuel-efficient Cooking Stoves: They use less wood, charcoal, briquettes or biogas. They have been installed in schools, prisons, hospitals, health centers and military barracks. They come in varying sizes and prices, from the 50-litre (\$800) to 500-litre (\$4,000) versions. So far KIST has marketed to individuals or corporations more than 200 units of these stoves and generated over \$650,000 during 2002-2003.

Grain Storage Bins: The facility is used to store all types of food grains that cut out the use of chemical preservatives. The KIST storage bins are able to block most household pests, including rodents. A standard bin can store up to 1 metric ton of grain and costs about \$180.

Kerosene Stoves: There are two models: the pressure pump type – suitable for fast cooking, with higher temperatures and easy to operate; and the gravity type which does not require pumping, hence no danger of explosion. The pressure pump type costs about \$27, and the gravity type, \$45.

Solar Water Heating Systems: KIST is at the forefront of the development agents promoting the solar energy technology in Rwanda. It has so far installed solar water heating systems in several institutions including the Gikonko Health Center in Butare, Shyira Hospital in Ruhengeri, and Nyagatare prison in Umutara. A standard system of 2m x1m and 100 l waste tank costs \$900, including cost of installation.

Cottage Industries: KIST's cottage industries ventures have put on the local market consumer items such as toilet rolls, tissue papers, napkins, plastic sachets, PVC conduit pipes, nails, candles, etc. The principal objective is not merely to make money but to impart knowledge and skills to students, empowering them to go out and be entrepreneurs and job creators in their communities.



David Mwarira
Fruit juice maker

Mini-Magic Volcano Shower: Simple instant water heater designed to take only three minutes to boil water, consuming half of the kerosene/fuel that would normally be used.

Other Technologies: Solar crop dryers, maize shellers, rice and sorghum threshers, winnows, water pumps, push carts, ox carts, tile moulds, oil expeller, soap-making equipment, incinerators.



Mathieu Hagner
Solar energy cook stove



Mathieu Hagner
Fuel efficient community cook stoves



David Mwarira
Biogas demonstration plant

The Address of H E Paul Kagame, President of The Republic of Rwanda, at the 1st Graduation Ceremony, July 27th, 2002

An Abridged Version

Distinguished Guests,

This graduation ceremony is an endorsement of the effort, commitment and determination of the students, academic staff as well as the administrative and other ancillary staff, who, together, have attained this important milestone.

What makes today's celebration particularly unique is that for the first time in our recent history, we are witnessing the conferment of diplomas and degrees in Engineering, Management and Information Technology. All this would not have been possible without the support of all the friendly countries and organizations that have contributed financially or otherwise to the establishment and growth of KIST. I would like especially to mention here the governments of Japan and the Netherlands, UNDP, GTZ, ADB, DFID, the World Bank and USAID.

KIST has come a long way. Immediately after the 1994 genocide, we quickly realized that Rwanda was far from having the urgently needed human capacity – technicians and engineers – for the task of rehabilitating and restoring Rwanda's physical infrastructure. The few the country had, had been caught up in the tragedy either as victims or as perpetrators. Also, there was also a need to take into account the aspirations of those among our youth with the inclination for technological studies as well as those wishing to pursue higher education, given that in the past, only less than 1% was able to do so.

It is no accident that countries that have made the greatest investments in education at all levels are also the ones that are socially and economically more secure. It is in the light of this that I invite KIST and our other institutions of higher learning to devise a multipurpose programme to accomplish the following: • Provide education that is tailored to the needs of our country • accommodate as many of our youths as possible • meet global educational norms so that local students are able to take advantage of facilities elsewhere whenever possible • embark on the road to economic development and prosperity.

I take this occasion to call upon the private sector and other stakeholders to play an active role in the development of our human resource. Our schools and institutions of higher education must do more than aim for academic excellence. They should and must play a leading role in finding solutions to the major challenges that face our country. For instance students should participate in our quest for national unity and reconciliation. In fact, there could be no better place for this than in our schools. Organized workshops in the form of Ingando and fostering national reconciliation should be encouraged and supported.

Another challenge confronting us today is the HIV/AIDS. It is one of our most serious concerns. HIV/AIDS continues to claim the precious lives of our young men and women, the future of our nation. Our investment in human capacity will have been wasted if we do not halt the spread of the pandemic.

On the economic front, Rwanda, like most of sub-Saharan African countries, has a long history of a weak industrial base. For our country to change this trend and compete in the global economy, we need to foster science and technology. This can only

be sustained by applied and appropriate research and development. I would therefore like to congratulate KIST for its active involvement in spearheading the transfer of these technologies, especially in the rural communities. Through a spirit of innovation, KIST in a period of five years and amidst a host of constraints has succeeded in laying a solid foundation for scientific and technological training.

Finally, to you graduands: Your academic success is what Rwanda needs at this critical phase of its development. The country has heavily invested in you, and you are duly expected to play your part in its rebuilding process.

I thank you.



Photo courtesy of KIST

H E Paul Kagame (right, first row), with (left to right) Rector Prof Lwakabamba, Minister of Education Romain Murenzi and then Chairman of the KIST council, C Murigande, during the graduation procession

Some Achievements in Research and Consultancy (2002)

RESEARCH PROJECTS COMPLETED IN 2002

NAME OF RESEARCHERS	TITLE OF RESEARCH	REMARKS
Mr A Kimaro, Eng A Butare	Solar Crop Drier	Sponsored by KIST. Completed
Mr A Kimaro, Eng A Butare	Experimental Biogas Plant for Demonstration and Research	Sponsored by KIST. Completed
Dr S Nangu	Non Financial Services required by Small and Micro-Enterprises (SME's) in Rwanda	Completed. Results published

CONSULTANCY PROJECTS COMPLETED IN 2002

PROJECT LEADER	CLIENT	TITLE	GROSS VALUE
Dr S Nangu	City of Kigali	To identify strategies and areas where Kigali city can improve its economic development for its people and city infrastructure	FRW 99,000,000
Dr S Nangu	World Vision	World Vision Project Base-line Survey	USD 17,000
Dr S Nangu	World Vision	Evaluation of Rural Development Projects	USD 17,000
Eng A Butare	City of Kigali	Kigali Economic Development Strategy	USD 99,000
Eng A Butare, Mr A Kimaro	Ministry of Internal Affairs	Biogas Project at Cyangugu Prison Phase I	FRW 29,000,000
Eng A Butare, Mr A Kimaro	Kamonyi Secondary School	Bio-Latrines at Kamonyi secondary school	FRW 4,000,000
Eng A Butare, Mr A Kimaro	Norwegian Peoples Aid	Biogas plant feeding on toilet wastes at Nyagatare	FRW 7,000,000
Eng A Butare, Mr A Kimaro	Norwegian Peoples Aid	Solar water heater at Nyagatare	FRW 700,000
Eng A Butare, Mr A Kimaro	Gikonko Hospital	Solar water heater at Gikonko Hospital	FRW 720,000

PUBLISHED RESEARCH PAPERS AND BOOKS, 2002

AUTHOR (S)	TITLE	PUBLISHER
S Lwakabamba, A Sinha, K K Singh	Applied Differential Equations	ANSTI-UNESCO
S Nangu	An Introduction to Materials and Inventory Management-Theory and Practice with examples of Tanzania's experience	Under review
R Mungla	Principles of Financial Accounting	Under Review
A Sinha, A Butare, N R Patra	Optimization Techniques	Under Review
K R. Santhi, V K Srivastava	Low cost solution for Ad-Hoc wireless Networks	Proceedings of 5 th TASTED international Multi-conference on Computers and Advanced Technology-Education (CATE), May 20 th -22 th , 2002; Cancun, Mexico
K R Santhi, V K Srivastava	Education in Cyberspace	Proceedings of the 12 th National Power Systems conference, 27-29 December 2002, IIT Karagpur, India
K K Singh	Flow characteristics of a freely discharging through weirs	Proceedings of the International Conference on Advances in Civil Engineering at IIT, Karagpur, India, 2002
N R Patra, A K Mandal, P J Pise	Behaviour of Andror Piles in sand under oblique pulling loads	Indian Geotechnical Journal, 2002
N R Patra, P J Pise	Oblique Pull out tests on model pile groups	Indian Geotechnical Journal, 2002
A S Chawla	Functional Management Research	Deep and Deep Publication, New Delhi, 2002
A S Chawla	Activity Based Costing in Indian Corporate Sector.	Proceedings of the Asia Pacific conference on International Accounting issues, Los Angeles, USA, November 2002
C Museruka, F Habyarimana	Valuation d'un Modele d' Estimation de L'Irradiation Solarie par voie Photovolttrique	UNR, Etudes Rwandaise, ISSN 1014-4874; PP 20-39, Vol 5, September 2002, Butare, Rwanda
R Kandasamy	Technology Transfer through Education and Outreach program, KIST – a case study	Proceedings Energy and Development to conference, Flensburg University, Bangkok, September 2002
C Museruka	Research Project on Quantitative Precipitation Forecasting using Eta Model	Proceedings of the 9 th Nile Conference, October 2002, Nairobi, Kenya

Pivotal Role of United Nations Development Program

The involvement of UNDP with KIST dates from the early days of the institute's founding – the period even before the official opening of doors in November 1997. Among the multi-faceted role UNDP was called to play was the coordination of the preparatory activities. UNDP was the conduit, via the Ministry of Education, for the various donors contributions to KIST. It has been an enriching partnership and KIST salutes the successive UN Resident Representatives, particularly the current, Mr Macharia Kamau, for their guidance. A friend in need is a friend indeed – as the saying goes.

The KIST project started with a 3.5 months preliminary phase funded under the UNDP Preparatory Assistance Project RWA/97/B13 dated April 1997 amounting to \$428,629, followed by the RWA/97/013 main Project Document (November 24th 1997), bringing in an additional \$4,000,000. This project phase, with a duration of 24 months, was due to end by November 1999 but was extended to June 2001, with an additional funding of \$2,425,000 from the UNDP managed donors Trust Fund.

What Made KIST Attractive to Donors

The Institute was a new creation whose objectives met the perspectives of donors who sought to leverage their assistance in specific interventions with maximum impact in human resource development, especially in the sciences and technology. Many responded to KIST intention to join the Information Communication Technology (ICT) revolution and other post-war reconstruction undertakings consistent with KIST's own role and core functions. In academic curricula KIST offered students the possibility to exit at several levels after shorter periods of training. This "modular system" led to the training and awards at certificate, diploma and degree at every level of education, from craftsmen through technicians to engineers and managers.

In March 2000 the Project Status Report (by GTZ Consultants, B Barloy and HK Wiessman) concluded that: "The achievement so far is impressive and even exceeds the forecast". By September 2001 KIST was on a path to building a place of excellence, responding to vital needs in the country's development: an enrollment of full time students far in excess to the original projection; a full range of well attended short term courses in several subjects; a notable involvement in vocational training; an Internet Centre providing low cost access to students and outsiders as well as being a fund generating activity; a strong Technology Research and Dissemination activities such as energy saving cookers, energy saving ovens, biogas energy technologies – all which were already generating a significant amount of financial resources for the institute's survival and growth.

Resources versus Objectives and Outputs

When the KIST Project was signed in November 1997 it was anticipated that the donor funding over a five year period (1997-2002) could amount to some \$17,000,000 (excluding land and buildings). By October 2001 only about \$10,000,000 had been made available through the UNDP Trust Fund while total expenditure amounted to \$14,000,000, with the balance financed by other donors (World Bank, ADB), as well as from other government subsidies and the institute's own income generating activities.

Some Constraints

The Institute is facing some constraints which need to be addressed if the gains made are to be harnessed and sustained. Foremost among these is a shaky financial resource base. While the fund raising achievements in this short period have been commendable, KIST has been under tremendous and persistent financial strain, constantly weighing on its growth. The institute started under expectations of receiving up to \$17,000,000 from the UNDP linked donors over five years. In reality it received only about \$10,000,000 from this source and the other donors and government contributions did not compensate entirely for the difference. There is an urgent need for the major parties to shape a consistent financing modality for both operational and development budgets; the key organizations in this regard being the GoR (Ministry of Finance and the Ministry of Education), KIST and some of the development partners.

"The achievement so far is impressive, particularly when compared to most projects of similar size in the region. In two and half years... the number of hour-students already delivered is in the range of half a million, at a rate which is still increasing rapidly. Part of the courses resulted in an immediate improved efficiency – part-time classes of languages and computer science and information system and full time students joining the job-market after their first year. For the other part scores of students are already in their second and third year, specializing in various technologies or in business administration."

GTZ Report, March 2001

The African Development Bank Steps In

African Development Bank's cooperation with KIST has been admirably exemplary. Working visits to or courtesy calls on KIST by senior executives from the pan-African financial and development institution – notably of President Omar Kabbaj and Vice President (Operations) B. Ogunjobi – are pointers to this vital relationship.

In cash terms, through the Ministry of Education's Project Education III, ADB committed \$6.2 million to the first phase of the KIST-ADB cooperation, starting in September 1998 and covering the purchase of text books and supply of laboratory equipment, training of technical teachers and the sponsorship of a strategic review in curriculum reform, conducted by the Education Consultants of India Limited (EdCIL). This activity also included subsequent print and dissemination of the of the review findings. The second phase of the KIST-ADB cooperation, debuting in early 2003, is covering the provision of additional text books and laboratory equipment, as well as the completion of the KIST IV block that will house laboratories and workshops, among other uses.

From the onset the ADB support has been timely and unique for KIST – in three ways: Firstly, apart from the seed money from the UNDP core fund and the UNDP-managed donors Trust Fund, the ADB credit constituted the largest donor support in the institute's development during the first phase. Secondly, the biggest portion of the Phase II funding will be used to prepare and launch the Strategic Plan, without which the growth and sustainability of KIST could be seriously compromised. The third factor is that the ADB support emphasized the provision of vital infrastructure and immovable capital – an area in which oftentimes proves difficult to attract donor interest and support.

Every country needs engineers and technicians in proportion relative to its demographic profile. In a national labor market survey and the role of KIST/higher education commissioned by the African Development Bank in 2002, the findings showed that the required manpower stock in Rwanda was 1,500 at the engineer level, 4,600 at the technician level and the 14,000 at craftsman level. The stock would need to be augmented by 8 to 10 percent per year to achieve sustainable growth. This implied training and putting on the job market some 140 engineers, 400 technicians and 1,300 craftsmen each year. However, the total pool of technologically-trained personnel in Rwanda today is not to more than 100 engineers and technicians – less than the annual requirements.

EdCIL Report, 2000



Visiting ambassadors from Burundi (second from right) and Tanzania (fourth from right) are given a tour by Rector Professor Lwakabamba

Photo courtesy of KIST

Links with National and International Institutions

KIST collaborates with several institutions of learning or other corporations, at home and abroad. The cooperation, in instances, is backed by Memoranda of Understanding, involving, mainly, staff visits and technical exchanges. The links with the National University of Rwanda at Butare and the Rwanda Institute of Administration and Management (RIAM) in Gitarama and Kigali have been more advanced and sustained.

INSTITUTIONAL COOPERATION – SOME BACKED BY MOU

YEAR	INSTITUTION	COUNTRY
1998	University of Flensburg	Germany
1998	Hogeschool van Utrecht	Netherlands
1999	Ghana Regional Appropriate Technology Industrial Sciences (GRATIS) Project	Ghana
1999	National Small Industries Cooperation Ltd	India
1999	Technikon Pretoria	South Africa
1999	University of Ghana	Ghana
1999	Delft University of Technology	Netherlands
2000	Rwanda-SA Joint Commission	South Africa
2000	Dynamic Information Network (Pty) Ltd	South Africa
2000	Jomo Kenyatta University of Agriculture and Technology	Kenya
2000	ETO Muhima Ecole Technique	Rwanda
2000	Virginia Polytechnique Institute and State University	USA
2000	German Technical Cooperation	Germany
2000	FachHocshule Munster	Germany
2001	University of California – Berkeley	USA
2001	Vellore Institute of Technology	India
2001	Makerere University	Uganda
2001	California State University, San Bernardino	USA
2001	Cape Technicon	South Africa
2001	The Government of Nigeria	Nigeria
2002	UNESCO International Centre for Engineering Education	Australia
2002	University of Missouri, Columbia College of Engineering	USA
2002	Universite Lumiere du Burundi	Burundi
2002	National University of Rwanda	Rwanda
2002	University of Durban-Westville, School of Engineering	South Africa
2002	African Virtual University	Kenya
2002	Glasgow Caledonia University	United Kingdom
2002	Institut Universitaire des Science et Techniques d'Abeche	Chad
2002	Universite des Sciences et Technologie de Lille	France
2002	The Aachen University of Applied Sciences	Germany
2002	RegeNord	Canada
2002	Kigali Institute of Education	Rwanda
2002	USA Government	USA

Others are:

Uganda Industrial Research Institute, Uganda
 National Agricultural Research Organization, Uganda
 Institute of Food Science & Technology, Uganda
 University of Kyambogo, Uganda
 Michigan State University, USA
 Central Food Technological Research Institute, Mysore, India
 Association of Chartered Accountants, UK

VISITORS TO KIST – AMONG FRIENDS

WHO	WHEN	REMARKS
H E Paul Kagame, President of the Republic of Rwanda	04/05/1998 21/5/1999 14/12/2000, and more	"To KIST – We shall do all we can in our powers to help you in your mission which is extremely crucial for the development of our country and our people."
H E Bakuli Muluzi, President of the Republic of Malawi	10/5/2001	"This is a very welcome development in our education system. Let us all support education as a base for economic development. Congratulations."
H E Joaquim Chissano, President of the Republic of Mozambique	27/10/2002	"I congratulate you for this achievement which is an important component for poverty alleviation and for subsequent development of the country. I wish you further successes".
Clare Short, Secretary of State, Department for International Development (DFID)	10/5/2000	"Very impressive achievements."
Mark Malloch Brown, UNDP Administrator, New York, USA	13/11/2002	"What a remarkable place KIST is with an extraordinary range of technologies at work, and with innovation and application for so many of Rwanda's challenges. UNDP is proud to be a partner."
Mr Macharia Kamau, UNDP Resident Representative and UN Resident Co-ordinator, Kigali, Rwanda		"The national goals as shaped by the government can be summed up as a two-pronged strategy: firstly, to rehabilitate, reconstruct and reconcile, and secondly, to reduce poverty, promote economic growth and sustain development. KIST is embedded in this process through its strategic plan, and we will continue to support you so as to attain your mission."
Koichiro Matsuura, Director-General, UNESCO, Paris, France	06/12/2002	"I am quite impressed by what KIST is doing. All my best – for further success."
Mr Omar Kabaj, President, ADB, Abidjan, Ivory Coast	26/7/1998	
Mr Bernard Makuza, Prime Minister, Kigali, Rwanda	09/08/2000	"KIST will be supported in all possible ways."
Hon Dr Vincent Biruta, Speaker of the National Assembly of Rwanda	05/05/1998 31/1/2001	"KIST représente un grand espoir pour l'avenir de ce pays. Félicitations aux ceux promoteurs de ce projet et merci à ceux qui l'apprécient."
Dr Donald Kaberuka, Minister for Finance and Economic Planning, Rwanda	06/05/1998	"I consider KIST to be the axis of our human resource development strategy. I am encouraged by the progress made over such a short time, the realistic yet ambitious plans for the future. The Mistry of Finance and Economic Planning team will do everything in its power to support this vital institution. Best wishes."
Prof Romain Murenzi, Minister of Education, Science, Technology and Scientific Research, Rwanda	08/10/1999	"An institute of higher learning at the service of the community. Please keep it up with your vision."
Omar Bakhet, UNDP Resident Co-ordinator and UNDP Resident Representative, Rwanda	06/05/1998	"KIST is a beginning of a long march in making Rwanda a Center of Excellence in Africa. It is in investing in the youth that Africa will translate its dreams into reality. KIST is a window towards this new vision and reality. I am proud and honoured to have been associated with its establishment."
Bobby Sager, Philanthropist, Boston, USA	20/7/2001	"It is amazing how far you have come. The future of the country lies in the ability to develop economic opportunity. Congratulations on a great start with the most valuable resource Rwanda has. Its human resource."
Hon Libere Bararunyeretse, Speaker of the National Assembly of Burundi	09/4/2002	"Our visit at the institute has shown us wonderful things. No doubt that KIST will become a pillar for knowledge and development for our countries."
B Ogunjobi, Vice President-Operations, Central & West, African Development Bank	25/7/2002	"This is a very successful project which can contribute to poverty alleviation in the rural areas and provide employment and skills for the youth. We are impressed by the activities. We will continue to support your efforts."
Prof Michael E Porter, Harvard University, Cambridge, Boston	19/06/2003	"I am delighted to visit KIST for the first time. What you have created is remarkable. And will be a model for the efforts in other countries. It will be a pleasure to build a strong and enduring relationship with this fine institution."
Amelia FitzJohn Broderick, US Department of State, Washington DC	17/07/2003	"Excellent presentation of KIST's history and achievements. Look forward to further collaboration."
Doron M Grossman, Embassy of Israel	18/02/2003	"In the spirit of the friendship between our two countries, and in appreciation of the very interesting tour of the KIST, I wish you great success. Your success will guide your country to great achievements."
Hon Edward K Sekandi, Speaker of the Republic of Uganda and a delegation of 40 Members of Parliament	23/02/2003	"We have been very impressed with what we have seen here at this great institute KIST – which have just been in existence for five years. Well done."
Prof M J Mwandoshya, Minister of Communications and Transport, United Republic of Tanzania	19/3/2003	"Congratulations for a good job well done."
Mr Emmanuel Mbi, World Bank, Washington DC		

In Profile: an “A-Team” at KIST

Council

Osei Kofi



Alfred Gakuba Kalisa, Chairperson, ai

One of Rwanda’s high achievers and trailblazers with an impeccable pedigree in corporate finance, Mr Alfred G Kalisa, was born on July 23rd 1952 in Butare but grew up in exile in neighboring Burundi where his parents had sought refuge following the ethnic massacres of 1959. He and spouse Isabel have two boys and two girls: Kamazi, 20, Shema, 15, Mwiza, 13, and Shyaka, 11. Kalisa attended secondary school at the College du Saint Esprit, Bujumbura, (1965-1972) and earned a place at the University of Burundi where he graduated Magnum cum Laude, BA, Economics (1977).

He left Burundi on a Swiss government scholarship to the US and took a Masters in Economics (1981) at Boston University. The young post-graduate went into banking right away, after being head-hunted by the Chemical Bank, New York. He stayed with the bank for six years, rising to Regional Director for West and Central Africa, based in Abidjan, Cote d’Ivoire.

By 1988 Kalisa had notched directorship slots at the *Banque Internationale du Congo*, the United Bank for Africa (Nigeria) Ltd, and at the Bankers Trust International (Nigeria) Ltd, where he was the Managing Director. Also featuring in his impressive portfolio are oversight responsibilities at the *Banque de Commerce et de Developpement*, Kinshasa, DRC, and at the *Banco Mercantile e De Investimentos*, Maputo, Mozambique. By 1990 Kalisa had added to his professional and executive expertise a Vice Presidency seat at the Bankers Trust Co. New York.

Today, the tested and proven corporate leader is a member of the Council of Economic Advisers at the President’s Office, Chair of the Rwanda Bank of Commerce, Development and Industry as well as the Chair of the Rwanda Private Sector Federation. He is also the Executive Vice President of the Johannesburg-based African Business Round Table.

Council Members

- Callixte Kayisire
- Albert Mutesa
- Dr Sam Kanyarukiga
- Theobald Mugabo
- Dr Desire Karangwa
- Emmanuel Kanigwa
- Rev Sr Marie Speciose Donata
- Alexandre Karamaga
- Prof Silas Lwakabamba (Secretary)
- Albert Butare
- George Katureebe
- Two KIST Student Representatives

The Rectors – A Tireless Triumvirate

Osei Kofi



Prof Silas B Lwakabamba, Rector – BSc, PhD (Leeds)

Born on October 9th, 1947, in Bukoba, Tanzania, on the shores of Lake Victoria, Professor Stanislaus (Silas) Bernard Lwakabamba is a family man of the doting father kind. He and spouse, Mathilde, are the proud parents of Gloria, 24, Bernard, 22, Abia, 19, and Esther 11. Brilliant, jovial, down to earth and accessible, Prof Lwakabamba graduated from the University of Leeds, UK, in Mechanical Engineering (BSc, 1971, PhD, 1975). In 1975 he joined the Faculty of Engineering of the University of Dar es Salaam, Tanzania, which had just started. He was Head of Department in 1975, reached professorship in 1981, Associate Dean 1976 and, eventually, Dean, 1982.

In 1985 Prof Lwakabamba moved to the UN-sponsored African Regional Centre for Engineering Design and Manufacturing (ARCEDEM), Lagos, Nigeria, as founding Director of the Training and Extension Services unit, where he stayed for 12 years. As founding Rector of KIST in 1997, he is once again relishing a pioneering role, helping to steer the training of much-needed technicians and engineers in skills-starved post-genocide Rwanda. It has been no easy task, what with the kind of challenges confronting a country that is picking itself up from the rubble of a national collapse.

A Fulbright Scholar (Energy Analysis Program, Lawrence Berkeley Laboratory, University of California, Berkeley), Prof Lwakabamba sits on the boards of several national, regional and international bodies. He is particularly proud of his role in the setting up of the UNESCO-sponsored and renowned African Network of Scientific and Technological Institutions (ANSTI). A seasoned educator from a developing country conversant with worldwide trends in the applied sciences, Prof Lwakabamba was elected to the UNESCO Executive Board in 2002. He has participated in some 80 national, regional and international conferences, workshops and study tours in some 50 countries and published over 30 articles in international journals.

Other feathers in the Rector’s Cap: Member of the Executive Council – International Association of University Presidents (IAUP), African Regional Council (June 1999) • Chairman – Committee of Engineering Education in East Africa (1982-1985) • Member – Committee of Engineering Education in Middle Africa/CEEMA (1975-1977). • External Examiner – Department of Mechanical Engineering, School of Engineering, University of Zambia (1981-1984) • Participated in the setting up of the African Energy Programme (AEP) under the Commonwealth Science Council (CSC) and Member of its Biogas, Wind Energy and Solar Energy Research Groups (1979-1985) • Research Assistant – Department of Mechanical Engineering, University of Leeds, England (October 1971-May 1975) • Vocational Employment – Kingfisher (Lubrication) Ltd, Leeds, England (June-October 1969) and Dawson and Barlos (Mfg) Ltd, Leeds, England (June-October 1970).

Osei Kofi



Albert Butare, Vice Rector – Academic – BSc (Dar), MSc (Flensburg)

Albert Butare was born on May 25th, 1959, in Kibungo. He and spouse Anathalie have a boy, Norbert, 4, and an adopted girl, Rosemary, 17. Butare graduated in Industrial Engineering (BSc) from the University of Dar es Salaam, Tanzania, in 1983. He did his Masters in Environmental Engineering at the University of Flensburg, Germany, in 1996, specializing in appropriate technology. He has since done several refresher courses, his favorite being in biotechnology.

Highly talented and innovative, the affable Albert Butare is among the academic doers who helped build KIST from scratch, advancing it to what it is today. A “dirty-your-hands”, outdoor kind of a person, Butare combines his academic workload with directing KIST to research, develop and sustain a cutting edge capacity in appropriate technology. Understanding that development will forever be stumped in a country like Rwanda, if novel, practical measures were not taken to address the poor manufacturing and technological base, Butare is one of the principals propagating entrepreneurial and cottage industry initiatives under which basic consumer goods such as roofing sheets, nails, toilet

rolls, plastic water/waste conduit pipes, plastic bags, paper clips, candles, etc, are designed and manufactured by students and faculty. These are sold on the local market at competitive prices – a scheme that today funds as much as a third of the institute’s operational costs.

Butare heads a faculty and student team behind the acclaimed Center for Innovations and Technology Transfer (CITT) – KIST’s platform for popularizing appropriate technologies, such as rural/micro potable water systems, human waste management, post harvest and storage techniques, charcoal and wood energy appliances, rural-feeder road maintenance and bridge work techniques, materials for low cost housing, arts and crafts in income generation, etc. The Center also runs an entrepreneurship development practice that routes KIST’s mature and proven products and services for commercialization. Between November 2002 and April 2003, the CITT generated an income of about \$1.6 million for KIST.

Prior to coming to KIST I in 1997, Butare helped design a biogas-fired lamp, the first of its kind in Africa of which more than 1,500 units have been sold mainly to rural homes in the region. In 2000 he designed and manufactured an energy-saving wood-fired oven that baked 4,000 bread scones in three hours on a single piece of an average-size firewood. The oven and baking feat won KIST the Ashden Award for Sustainable Energy, or the “Green Oscars”, held annually in the UK. This win came with a \$40,000 prize cheque for KIST. The oven continues to perform splendidly, providing bread for students and staff at the institute. The technology is being adapted by other innovators in Rwanda in the sub-region.

In October 2002, Butare and the R&D team completed the construction and commissioning of a 550,000-litre digester system for anaerobic treatment of human waste at the Cyanguu Prison, housing 6,500 inmates, mostly genocide detainees. A by-product of the digester is biogas, piped to the prison kitchen, thus saving as much as 75% of firewood consumed by the prisoners and which was normally hacked from the surrounding forests. In addition to the environment degradation that firewood supply to Rwanda prisons pose, the government spends some \$1 million annually on cooking fuel for the prisons. Butare is supervising the construction of a second digester system in Nyanza prison for 10,000 inmates. It will be the biggest of its kind in Sub-Saharan Africa and the by-product biogas will also be the largest ever harvested.

Butare has provided consultancy services in Benin, Burundi, Kenya, Rwanda, Tanzania, Uganda and Zimbabwe and presented papers in Burundi, Cameroon, Ethiopia, Germany, India, Malaysia, Tanzania, Uganda, United Kingdom, United States and Zambia.



George Katureebe, Vice Rector – Administration and Finance – BA Hons (Makerere), MA (Leeds)

A stickler for detail, the youthful, stylish, serious and intense development studies practitioner Katureebe was born on June 16th, 1970 in Mbarara, in neighboring Uganda. He and his spouse, Hope Azeda, are the proud parents of bubbly 18-month old Manuela. Katureebe graduated B A Hons. (1994) from Makerere University, Kampala, and earned a Masters in Development Studies (2001) from the University of Leeds, UK. He specialized in Works Procurement, Goods and Services at the International Law Institute, Washington DC. He also studied at the ISADE, Dakar, Senegal, where he earned an Advanced Certificate in procurement of works. He has an Advanced Certificate in Project Planning and Management from Makerere.

After a brief stint as manager at KIST’s Consultancy Bureau, Katureebe was appointed Vice Rector in January 2002, responsible for supervising administrative structures, preparing budgetary proposals and monitoring utilization of funds and assets – duties that he combines with part-time lectures at the institute. Katureebe has developed considerable expertise in development studies, in particular, the dynamics of change in national and international contexts and has been involved in numerous projects in this domain. Katureebe has

consulted for various private and public sector organizations in Central and East Africa and is associated with COMESA, the common market for East and Southern Africa.

Other Laurels, 1995-2001: Marketing Officer for the MABECO Construction Company; Administrator, Ananda Marga Universal Relief Team – responsible for program formulation and management; Administrator, Food for the Hungry International (FHI) – responsible for Program and Personnel management, Assistant to the Executive Secretary of the National Tender Board (NTB) Rwanda – responsible for the transmission and monitoring of Public Procurement Policy to the other public authorities. Katureebe was also instrumental in the formulation of the law establishing Rwanda’s National Tender Board and was co-drafter of the code, standards and guidelines for bidding and procurement. He was Manager of the World Bank-GoR grant for the strengthening public procurement capacity at the NTB. Katureebe was committee member of the USAID-Rwanda food monetization program.

Published works: *Killing the Earth* – An analysis of the global environment crisis; *United Nations in search for Mr Right?* An analysis UN failure to avert crises; *The Feasibility of Regional Economic Integration in Africa* – The Case of the Common Market for Eastern and Southern Africa (COMESA).

The Rest of the A-Team

For his latest challenge at the helm of a nascent institute of higher learning, Prof Lwakabamba – actively backed by the KIST Council and the Ministry of Education, Science, Technology and Scientific Research – has assembled under the constantly expanding roofs of the institute, an impressive line-up of academics, technologists and technicians, as well as a highly motivated support staff, all drawn, largely, from Rwanda and other African countries and the Indian sub-continent. Individually and collectively, this “A-Team” is ensuring that KIST grows into, and maintains its place as, a center of excellence.

Heads of Faculties, Schools, Centres & Services

Faculty of Science	Dr Casimir Museruka, 46, Rwandan, <i>Doct</i> (Dakar)
Faculty of Technology	Prof James Grant Monney, 63, Ghanaian, PhD (Oklahoma)
Faculty of Management	Prof Arvinder Chawla, 46, Indian, PhD (Panj)
Centre for Continuing Education	Dr Nelson Lujara, 45, Tanzanian, DSc (RAU)
School of Languages	Ms Antonia Mutoro, 35, Rwandan, MEd (Leeds)
Director of Quality Assurance	Dr Jolly Mazimhaka, PhD (Saskatchewan, Canada)
Academic Services, Registrar	Prof Elifazi Bisanda, PhD, Material Science (Bath University, UK)
Administration, Director	Eugene Kandekwe, Rwandan, <i>Licence</i> (Burundi)
Finance, Director	Callistus Obiero, Kenyan, BCom (Nairobi), FCCA
Dean of Students	Thomas Kajuga, Rwandan, <i>Bachelier en Sacree Theologie, Universite Pontificale Urbanienne</i> (Vatican)
Library, Chief	Alphonse Ngabonzima, Rwandan, Post-Graduate Dipl-Documentation (Villeneuveil)
Director of Computing Center	Dr R Mmasi, Tanzanian, PhD (Swedish Royal Technical Institute for Karkov)
Co-ordinator, Part-time Studies	Mr D Ntaganzwa, Rwandan, MEd (Toronto)
Co-ordinator, In-service Training	Dr N Shilla, Tanzanian, PhD (Vienna)
Co-ordinator, AVU and Distance Learning	Ms KR Santhi, Indian, ME (Microwave and Optical Engineering, India) ME (Computer Science Engineering, India)
KIST Doctor	Dr Mary Kabanyana-Zigira, Rwandan, MDCh (Makere)
Estates Officer	Mr E Kanigwa, Rwandan, MSc (Real Estate, Hong Kong)

Housing – Low Cost, High Quality



HAMMERING IN...

On a hillside at the edge of a military camp not far from Kigali International Airport at Kanombe, KIST is proving that low-cost housing can depart from what much of the world has known so far – faceless, minute, rough and tumble structures without aesthetics – and instead, be solid, durable, architecturally modern and pleasing while the “turn-key” cost per unit remained just that – low and affordable.

KIST’s venture into housing construction began by accident. In 1997 the Ministry of Defense offered the modest compound of its military academy in central Kigali to KIST – a largesse that ensured that the nascent institute could actually have a physical presence. In exchange KIST management undertook to use their appropriate technology expertise to provide basic housing for 40 families among the non-officer class of the national army. KIST “Low-Cost Housing Scheme” was born.

Leading the pilot venture was a young architect, Ms Christine Asmah. In mid 2001 Asmah and a building team of 20 local artisans and casual workers set to work on the bushy, stony hillside overlooking other rolling hills. All they had were pick-axes, shovels, a borrowed tractor-grader used to level the site and two old kerosene-burning brick-making machines “liberated” from the Ministry of Education.

“I drew up a budget of some RF50 million (about \$80,000) but the cash came in dribs and drabs as KIST was generally short of funds and we had to make do with whatever portion it could make available from time to time. Meanwhile, the cost of cement, iron rods, plywood, roofing sheets, water pipes, even nails, soared. The delays translated into inflation in the price of building materials and the cost per unit of housing more than doubled”, Asmah lamented. The delays in construction time spilled over into two and half years instead of the year planned for.

Nonetheless, by October 2003, six 2-4 bedroom, units to house 24 families and two block-type units to house 16 families graced the previously stony, bushy hillside. The completed single-bedroom unit cost a little over \$3,000, instead of the \$1,200 envisaged. The two-bedroom unit cost \$6,400, instead of what should have been half that amount.

Even with a doubling in cost per unit the KIST houses remain extremely competitive. The same quality of houses offered on Kigali’s burgeoning real estate and housing market would cost between four and six times as much.

Asmah says the factors leading to the uncommon performance made at Kanombe include: simplicity of design and repetitive elements as cost saving measures; use of local materials and their optimization in modular co-ordination for speed of erection; effective project planning and management strategies; efficient materials utilization to avoid wastage; optimal or sufficient spatial provisions and organization with respect to user or target group needs – all the while ensuring that basic design standards and requirements such as ventilation, lighting, temperature control, moisture extrusion and structural stability were met.

“The Kanombe experience has generated vital information for teaching, and in particular has helped us establish a credible lowest possible unit cost consistent with reasonable comfort for shelter development. It is hoped that it will be replicated elsewhere and contribute to the search for decent but affordable housing for low-income earners in Rwanda”, Asmah concluded.



MS ASMAH WITH HER TEAM (ABOVE)



THE ALMOST COMPLETED UNITS AWAITING LANDSCAPING...

Perspectives and Challenges



The Early Days

Much of KIST’s initial output and performance came out of the inspiration and creativity of members of the founding team who had to resort to eclectic and, often ad-hoc, borrowings from other national, regional and international experiences. The dictates of the sheer volume of science and technology needs in a highly disadvantaged environment such as Rwanda also provided pointers. It was not until 2000-2001 that steps were taken to shape a more systemic structure that would respond coherently to short, medium and long term needs of a fast growing institution such as KIST.

The road from the first opening of doors to the inaugural graduation was bumpy, fraught with obstacles and the Council, Rector and

Administration relied heavily on the government, the public and faithful donors and stakeholders in walking that tightrope. As KIST continued to expand in leaps and bounds, the need for a strategic plan became pressing but little headway was made until a weekend retreat away from campus in late 2001. The outcome of the consultations led to an elaboration of a matrice of 18 follow-through actions, in particular, costing and financial projections, all set to specific deadlines. The input by DFID consultant John Farrant of Universitas Higher Education Management Consultants (October 2001) led to the elaboration of a 32-Objective Strategic Plan 2001-2006, finalized and published in April 2002.

Strategic Plan, 2003-2008

Fine tuning and updating of Strategic Plan 2001-2006 by EdCIL (consultants commissioned by the ADB) subsequently led to Strategic Plan 2003-2008 – the most current and comprehensive road map whose set of objectives are listed below.

- Objective 1 Regular review of existing curricula to keep abreast with national and global developments.
- Objective 2 Complete costed plans and establish a Center for Development Studies by December 2003.
- Objective 3 Introduce an MBA program by October 2003.
- Objective 4 Establish a fully-fledged Faculty of Science.
- Objective 5 Strengthen the Department of Tourism and Hotel Management by April 2004.
- Objective 6 Pursue planning with the Kigali Institute of Education (KIE) for a program to train teachers for technical schools.
- Objective 7 Devise and introduce systematic arrangements for quality assurance.
- Objective 8 Implement an annual full-time intake of 600, split approximately into 360 Technology and 240 Management, but closely monitor student demand, entry qualifications, and gender balance.
- Objective 9 Integrate part-time and full-time programs. Assign credit hours to courses to arrive at course-credit system. Set part-time fees at full average cost levels.
- Objective 10 Maintain and establish further links with higher education and other institutions in Rwanda, in the region and elsewhere, to identify opportunities for collaboration.
- Objective 11 Prepare a business plan for the Center for Continuing Education (CCE) by September 2003.
- Objective 12 Introduce in the KIST structure a division for Research, Development, and Technology Transfer.

- Objective 13 Promote active research on campus.
- Objective 14 Develop a strategy for entrepreneurship and graduate employment.
- Objective 15 Establish a Center for Entrepreneurship Development.
- Objective 16 Establish a fully-fledged Center for Technology and Business Incubation (Science Park), in conjunction with stakeholders.
- Objective 17 Audit KIST's capability to support ICT development in Rwanda in all its aspects and develop an action plan, by September 2003.
- Objective 18 Position KIST as a regional ICT center of excellence.
- Objective 19 Prepare an Action Plan for management development by December 2003, with special attention to planning, quality management and management information.
- Objective 20 Increase access to education through the establishment of distance learning.
- Objective 21 Increase the proportion of female full-time entrants from the present 30% to at least 45% by 2008, and seek means to reduce the higher attrition among female students.
- Objective 22 Graduate at least 80% of each intake within the normal duration of the program.
- Objective 23 As far as possible, charge economic rates for students and staff services.
- Objective 24 Increase the library's stock by 2006 from the present ratio of 1 student:3 books to acceptable ratio of 1 student:20 books.
- Objective 25 Implement target staff: student ratios and staff teaching loads, and use both, in conjunction with the approved curricula, to plan departmental staff establishments. Develop a staff work load model.
- Objective 26 Develop and implement a long-term plan for the recruitment and training of local academic staff, to build them to the required capacities.
- Objective 27 Establish a systematic basis for planning support staff numbers.
- Objective 28 Provide job security for critical staff, promote staff welfare, and put in place mechanisms for fighting against HIV/AIDS.
- Objective 29 Put in place adequate infrastructure to support KIST activities, develop norms for the planning and allocation of space in buildings, and improve the utilization of available space.
- Objective 30 Adopt and apply principles of prudent financial management and improve systems for financial control and reporting.
- Objective 31 Develop and spin off commercial activities to attract lucrative investment.
- Objective 32 Generate at least 35% (gross) of the recurrent expenditure to supplement the government budget by 2006.

The Funding Challenge

As the saying goes, money makes the world go round. How to source and raise adequate funding to meet KIST's recurrent and development needs has been an ever present, time consuming preoccupation since the institute opened its doors. The Rectory and the Department of Finance used all manner of creative methods and strategies from buttonholing the country's donors, the modest gains from consultancy services and income generating activities, to derisory part-time studies fees and arm twisting in the corridors of our immediate patron, the Ministry of Education to ensure that KIST stayed afloat. So far.

The UNDP core funding (\$2.7 million), plus dollops of grants from its Trust Fund were judiciously used. Through the generosity of Japan (\$4.7 million) and the Netherlands (\$2.4 million) to the UNDP Trust Fund, lecturers were paid, student received their stipend, the barrack-like compound of the former Military Academy was refurbished and equipped,

often using student and faculty expertise and craftsmanship to cut down costs. The Japanese aid went largely into the construction of the 4-storey KIST II block, plus some furniture and equipment. The building accommodates the library, conference hall, four lecture theatres and staff offices.

The Trust Fund was phased out in 2000, and since then the government has borne the full weight of recurrent and development expenditure. Apart from Japan and the Netherlands, donors that have walked the extra mile with KIST include the DFID/UK, which committed 1.7 million sterling to support ICT, to train technicians and to support the establishment of the Center for Innovation and Technology Transfer (CITT), a flag ship of the institute. The DFID/UK also provided technical expertise for the elaboration of Strategic Plan 2001-2006.

The German government has disbursed some 1.5 million Euro for the training of technical teachers and business managers while the World Bank has backed KIST's human resource development program with some \$1.4 million to cover staff

training, recruitment of expatriate staff and the purchase of equipment.

Today, the central challenge remains how to fund the range of projects and activities spelled out in the Strategic Plan 2003-2008 which are vital to KIST's continued survival, growth and fulfilment of mission. The Council and Rectory continue the struggle.

For instance due to the absence of direct state funding towards research, KIST has managed to finance internally only a few applied science and technology projects. Furthermore, most of the KIST academic staff, have a very high teaching

work load, which leaves them with little time for research. On average, academic staff in the developed economies spend about 60% of their time teaching, 30% doing research, and only 10% for consultancy activities. On the other hand, it seems that most KIST staff spend more than 90% of their time in teaching, leaving little time for other activities. It is hoped that as the community and general public become aware of the technical potential available at KIST, they will sponsor more research projects, and the volume of consultancy activities will expand.

See "Resource Mobilization and Program Funding Sheets" (separate cover) for more details on funding challenges.



Baroness Lynda Chalker (third from left) visiting KIST Cottage Industries Technology Unit

GROWTH PROJECTION – NUMBER OF FULL-TIME STUDENTS

YEAR STATUS	CURRENT STATUS		PROJECTED NUMBERS										
	2003		2004		2005		2006		2007		2008		
	GS	SP	GS	SP	GS	SP	GS	SP	GS	SP	GS	SP	
DEGREE PROGRAMS													
Faculty of Technology	Civil Eng & Env Engineering	245	4	225	10	163	15	121	19	135	24	90	27
	Mechanical Engineering	103	5	118	11	132	16	145	21	158	22	106	27
	Electrical Engineering	39	1	57	7	74	13	90	18	90	23	106	27
	Electronics & Com Eng	81	5	97	11	112	16	126	21	140	26	106	27
	Computer Engineering	190	13	145	18	92	20	97	25	37	22	37	22
	Information Technology	15	0	24	6	33	12	41	17	37	22	37	22
	Electromechanical Eng	133	0	106	0	61	0	0	0	0	0	0	0
	Food Science & Tech	162	6	174	12	124	14	72	20	74	22	74	22
TOTAL	968	34	947	74	791	106	695	141	672	162	557	175	
Faculty of Management	BBA	766	146	814	163	768	143	751	109	742	89	742	89
	MBA	0	0	0	0	0	20	0	39	0	39	0	39
	TOTAL	766	146	814	163	768	163	751	148	742	128	742	128
School of Languages	BA in English	0	0	30	0	59	0	86	0	86	0	86	0
	BA in French	0	0	30	0	59	0	86	0	86	0	86	0
	TOTAL	0	0	60	0	117	0	171	0	171	0	171	0
Faculty of Science	BSc in Mathematics	0	0	50	0	98	0	143	0	185	0	185	0
	BSc in Chemistry	0	0	50	0	98	0	143	0	185	0	185	0
	BSc in Physics	0	0	50	0	98	0	143	0	185	0	185	0
	BSc in Geology	0	0	0	0	50	0	98	0	143	0	185	0
	BSc in Meteorology	0	0	0	0	50	0	98	0	143	0	185	0
	TOTAL	0	0	150	0	393	0	623	0	842	0	927	0
TOTAL DEGREE PROG.	1734	180	1970	237	2068	270	2240	289	2427	290	2397	303	
DIPLOMA PROGRAMS													
Faculty of Technology	Civil Eng & Env. Technology	27	0	66	6	102	12	114	17	114	17	114	17
	Automobile Technology	26	0	65	6	101	12	114	17	114	17	114	17
	Electromechanical Eng	26	2	65	8	101	12	114	17	114	17	114	17
	Electronics Technology	26	6	65	11	101	17	114	17	114	17	114	17
	Computer Technology	27	6	66	6	102	11	114	12	114	17	114	17
	Food Technology	41	6	79	6	115	11	114	12	114	17	114	17
	TOTAL	173	20	404	42	624	75	685	92	685	103	685	103
Faculty of Management	Diploma in Management	40	0	78	24	114	47	114	68	114	68	114	68
Faculty of Science	Post-Graduate Diploma in Education	0	0	0	0	50	0	50	0	50	0	50	0
TOTAL DIPLOMA PROG.	213	20	482	66	788	122	849	160	849	171	849	171	
GRAND TOTAL DEGREE & DIPLOMA PROG.	1947	200	2453	303	2857	391	3089	449	3276	462	3246	475	
SUMMARY													
	2003	2004	2005	2006	2007	2008							
Civil Eng & Env Technology	276	307	292	271	290	249							
Electrical Engineering	40	64	87	108	114	133							
Electronics and Communications Eng	118	184	247	279	298	264							
Mechanical Engineering	295	378	436	429	443	396							
Computer Engineering and Info. Tech	251	265	270	306	250	250							
Food Science and Technology	215	270	265	218	228	228							
Faculty of Management	952	1078	1092	1082	1053	1053							
School of Languages	0	60	117	171	171	171							
Faculty of Science	0	150	443	673	892	977							
TOTAL	2147	2756	3248	3538	3738	3721							

Legend: gs = government sponsored
sp = privately sponsored

Financial Summary

By the close of 2002, the institute had net assets of Frw 4.2 billion compared to Frw 4.3 billion in 2001. The institute realized an operating surplus of Frw 125.6 million in 2002 compared to Frw 488.7 million in 2001.

INCOME AND EXPENDITURE ACCOUNT, DECEMBER 31ST, 2002

1 US\$ = 511 Frw

INCOME	2002 (NOT AUDITED) FRW	2001 (AUDITED) FRW
Tuition Fees	381,518,269	318,463,707
Income from products/services	157,861,198	177,097,783
Other operating income	69,792,388	88,653,950
Donor income grant	134,311,460	288,250,276
Budgetary funding from Govt.	2,550,070,232	2,083,321,303
TOTAL	3,293,553,549	2,955,787,019
EXPENDITURE		
Administrative expenses	641,247,478	509,323,243
Payroll costs	1,565,946,544	1,342,463,720
Other staff costs	64,613,118	54,900,219
Training expenses	23,562,226	23,198,443
Student expenses	612,563,537	390,254,551
Depreciation	260,058,555	146,995,346
TOTAL	3,167,991,458	2,467,135,522
SURPLUS/(DEFICIT) BEFORE TAXATION	125,562,089	488,651,497
TAXATION	0	0
SURPLUS/(DEFICIT)	125,562,089	488,651,497

Income: during 2002, the institute had slight increases in income from tuition fees (20%) and budgetary funding from government (22%). There was a significant and disquieting drop of about 53% in donors support. Budgetary funding from the government remained the main source of income, amounting to about 77% of total income.

Expenditure: the most notable rise was in student expenses that rose by nearly 97%, attributed to a significant increase in enrolment during 2002 and the costly nature of technical programs as they bear additional costs such as student's industrial training and field laboratory visits, some of which are conducted outside Rwanda. Payroll costs accounted to about 51% of the institute's total expenditure – the single largest.

BALANCE SHEET (UNAUDITED), DECEMBER 31ST, 2002

1 US\$ = 511 Frw

ASSETS	2002 UN AUDITED FRW	2001 AUDITED FRW
Fixed Assets	4,088,543,676	3,329,729,011
Capital goods in transit	0	328,999,629
Net current assets	156,434,702	615,264,849
TOTAL ASSETS	4,244,978,378	4,273,493,489
Financing		
Accumulated Fund	3,694,943,766	3,761,739,449
Capital reserves	8,340,716	8,340,716
Revenue reserves	541,693,896	503,913,324
TOTAL CAPITAL	4,244,978,378	4,273,993,489

One for the Road...

An edited version of a thought-provoking address to KIST's freshmen by Ms Consolee Rusagara, First Vice-Governor of the National Bank of Rwanda, Guest of Honor at the Matriculation Ceremony, May 2nd 2003

Ladies and Gentleman,

In March 2002 I was appointed Vice-Governor of the National Bank of Rwanda. The BNR is a bank like any other but with a different mission and different clients. Its role covers: formulating and implementing Monetary Policy; managing the country's foreign reserves through appropriate exchange policies; supervising the banking sector; being banker to the government, issuer of the national currency and lender of last resort. I assist the Governor in the day-to-day management of the bank, and specifically, I supervise the Departments of Research, Money and Capital Markets, International Banking Operations and Domestic Banking Operations, Foreign Exchange Regulations and Balance of Payments.

It is an extremely challenging job. That is not to say it cannot be done. The other challenge is that it is a male-dominated club. When I attend meetings of Central Banks I see that women are very few among the representatives. Imagine, in Africa, there is only one female governor (2003), namely, the Governor of the Central Bank of Botswana. There are three Vice-Governors, including yours truly. Worldwide, the statistics are not any better. This is rather unfortunate for it's been shown that women are better custodians of wealth! A recent study in Singapore showed that the value of companies on the Stock Exchange increases by an average of 3% when a woman is appointed Chief Executive Officer or Board member, indicating that investors attach a premium on the value added by women in the boardroom.

Having said that, I would like you to have realistic expectations. Although our economy is growing at about 7% in real GDP, in absolute and expansionary terms it is not good enough. Exports are only one third of imports, meaning we depend heavily on donor funds to cover a good part of the country's external obligations. This impacts, among other things, on the level of unemployment. It is therefore important that you come out of this place ready to be job creators not job seekers. I am glad that KIST's curriculum has been designed to encourage job creation. I know that our banking system so far does not finance start-ups but the government has obtained a World Bank loan that will be used to assist this area. The NBR is working on a Fund to be used to finance export-oriented agri-business projects.

You young ladies and men who have just taken your matriculation oath, this is a defining moment for your future. You have come of age and must learn how to make your own decisions – decisions that could fulfill or shatter your dreams and aspirations. They may be simple decisions like, whether you should go to a party or discotheque or not. Whether to continue studying for a few more hours or less. Whether you should associate with this or that person. They can all be determinants of your future.

These are particularly tough times for you because you are being initiated into adulthood in an era of HIV/AIDS. So many young and older people have had their dreams shattered, their lives cut short by HIV/Aids. Unfortunately, you are more vulnerable, because people may want to take advantage of your innocence and youth. You must be able to resist pressures and temptations. College status attracts the most interest, from potential employers and potential suitors – and attraction even from the electorate for those with political ambitions.

Let me cite some pointers in life skills. Life is managed, not cured. Take charge of your life and hold on and do not let even your best friend steer it. At your age there is a lot of peer pressure, so join the groups that do the right things not the wrong ones. Life is a long and winding road and be prepared to jump the hurdles. Remember, facing problems builds character. You have to plan your life, nothing happens by accident. There is a saying, "If you do not know where you are going, no road will take you there". So, make yourself a road map, put some milestones on it and periodically measure yourself against the milestones. Set yourself goals, realistic goals. Along the way you might achieve this but experience that set back. You will feel disappointed if you fail but will be doomed if you don't try again.

Two major secrets of success are knowledge and attitude. You have come here to get knowledge. The good news is that you will get it in abundance at KIST. The bad news is only 15% of success can be attributed to knowledge and skills while 85% is the result of attitude. If you are lazy, a poor communicator, a poor team builder but brilliant, you may get the good jobs but you may not be able to keep them. Some of us knew many straight-A students at college who have failed to make it in life. For, they lacked the right positive attitude towards their peers, superiors and life in general. Negative emotions hold you back and you end up blaming others for predicaments. A positive attitude generates enthusiasm, excitement, encouragement to and empathy with others. This is what you need if you intend to be a leader in business, politics or public administration. Avoid negative emotions, like hatred, guilt, anger or envy. They are destructive. Shirk self-limiting dispositions, such as "I'm not good enough for this or the other". Instead ask "how can I improve in this or that". Remember, it is your attitude not your aptitude that determines your latitude.

Often, the difference between losers and winners is proper time management – how each one uses his or her time. If you use your time to read, attend lectures, get involved in academic discussions, you will be winners. If you think: "aha! I have now gained my freedom from the watchful eye of my parents," and spend your time in discotheques or gossiping in bars, you will be a loser. Also remember, not having enough time in the day should not be an excuse – everyone has 24 hours.

I thank you very much for listening and may God bless you all.

Abbreviations

ACCA	Association of Chartered Accountants
ADB	African Development Bank
APC	Action Plan for Consolidation
AVU	African Virtual University
BNR	National Bank of Rwanda
CCE	Center for Continuing Education
CDS	Center for Development Studies
CE&IT	Computer Engineering and Information Technology
CGSWD	Center for Gender Studies and Women in Development
CITT	Center for Innovation and Technology Transfer
CNFPP	Centre National de Formation et de Perfectionnement Professionnel
CRC	Center for Research and Consultancy
CTBI	Center for Technology and Business Incubator
DFID	Department for International Development
EdCIL	Educational Consultants (India) Limited
Eskom	Electricity Company of South Africa
GDP	Gross Domestic Product
GoR	Government of Rwanda
HRDP	Human Resource development Project
ICT	Information and Communications Technology
IMF	International Monetary Fund
ISP	Internet Service Provider
IT	Information Technology
JKUAT	Jomo Kenyatta University of Agriculture and Technology
KHI	Kigali Health Institute
KIE	Kigali Institute of Education
KIST	Kigali Institute of Science, Technology and Management
KIST I	The First New Building on the Campus
KIST II	The Second New Building on Campus
KIST III	The Third New Building on the Campus
KIST IV	The Fourth New Building on Campus
LAN	Local Area Network
LDC	Least Developed Countries
MOU	Memorandum of Understanding
NGO	Non-Governmental Organization
NICI	National Information and Communication Initiative
NPA	Norwegian Peoples' Aid
NPA	National Plan of Action
NUR	National University of Rwanda
ORINFOR	National Information Office
PC	Personal Computer
PRP	Poverty Reduction Program
R&D	Research and Development
RIAM	Rwanda Institute of Administration and Management
RMIT	Royal Melbourne Institute of Technology
SOLAS	School of Languages
UDSM	University of Dar es Salaam
UNDP	United Nations Development Programme
UNHCR	United Nations High Commission for Refugees
UNIDO	United Nations Industrial Development Organization
UNESCO	United Nations Education, Scientific and Cultural Organization
UNIDO	United Nations Industrial Development Organization
USAID	United States Agency for Development
WAN	Wide Area Network
WFP	World Food Program

