

# A Strategy for Sustainable Capacity Building in Land Administration in Developing Countries

Eugene H. SILAYO, Ardhi University, Tanzania.

**Keywords:** capacity building, education, innovation, partnership.

## SUMMARY

All institutions need well educated and skilled manpower, work tools and favourable institutional environment to implement the objectives for which they have been established. In addition to ‘doing’, the institutions also need to be able to conceive new ideas to sustain life and to bring about purposeful change. This can only be assured through streamlined capacity building process of the institutional manpower. Capacity building may be considered as a process which includes acquisition of knowledge, skills and capability needed by an institution in its core activities to effectively manage change.

In various conferences where ‘land’ is a theme; it has often been observed that (a) there is no human capacity in land administration and management and (b) conventional land administration approaches currently applied in developing countries have failed, and thus innovative options are needed. Conceptions of workable and reliable new options require innovative thinking, which is a product of education.

While delivering his opening speech at the Bagamoyo CASLE Conference for Africa Region, in March 2006, the Minister for Lands, Housing and Human Settlements Development, noted that there was, in Tanzania, limited capacity for policy analysis, planning and project implementation. This position is corroborated by various sources of literature including current national land policy documents such as those of Kenya, Malawi, Rwanda Tanzania and Zambia.

Various sources have unequivocally stated that cadastral surveys take too long to be completed thus delaying timely land development, are too costly and therefore are not pro-poor as the poor cannot afford them. This position is also supported by the fact that most countries in Africa have only about 1% cadastral coverage. The functions of land delivery, in many countries in Eastern and Southern Africa have been impeded by *inter alia*, shortage of qualified personnel and the necessary hardware and software. This could account for the fact that as much as 60-80 percent of urban development in Tanzania, and elsewhere in Africa, comprise informal settlements. These are challenges that the land sector professionals face.

This paper explores the role of education in creating, transmitting and applying knowledge as a strategy to solve community problems in the developing countries. The delivery of land sector education at Ardhi University is presented as a case of capacity building, deploying both formal and informal schemes of education.

# **A Strategy for Sustainable Capacity Building in Land Administration in Developing Countries**

**Eugene H. SILAYO, Ardhi University, Tanzania.**

## **1. INTRODUCTION**

Capacity building has been a component of development projects in the developing countries (South) wherever there is cooperation with the developed countries (North). Within the projects, the development partners have assisted the South to attain various development targets through short, medium and long term education/training programmes as well as providing them with the requisite technology. Some of the agencies that have provided capacity building include the World Bank (WB), the International Monetary Fund (IMF), the United Nations Development Programmes (UNDP), the United States Agency for International Development (USAID), the Food and Agriculture Organization (FAO), the Department for International Development (DFID), the Netherlands Organization for International Cooperation in Higher Education (NUFFIC), the Japanese International Cooperation Agency (JAICA), the Danish International Development Agency (DANIDA), the Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) and many others.

Capacity building, tied to development projects, began in Africa from the early 1960s when most African countries attained independence. Receipt of aid, grants, loans, and capacity building by the South from the North for all sectors of national economies continues to date, suggesting that local capacity to implement various development projects in the developing countries is not yet met. One wonders whether the developing countries have been receiving appropriate capacity building support. If they have, one is still left wondering why the dependence on the North continues to date.

In this paper, capacity building is also seen as a tool to address three of the Millennium Development Goals, namely; MDG 2: Achieve universal primary education, MDG 3: Promote gender equality and empower women, MDG8: Develop global partnership for development. Furthermore, the paper supports the contention that to achieve economic independence, a cadre of qualified local manpower has to be [sufficiently] trained (Narman, 1992).

### **1.1 Capacity building defined**

The term 'capacity building' has different meanings and interpretations depending on who uses it and the context in which it is used. In the context of this paper, the following examples have been selected to illustrate this position:

1. Capacity building is a set of activities which strengthen the knowledge, abilities, skills and behaviour of individuals and improve institutional structures and processes such that the organization can efficiently meet its mission and goals in a sustainable way<sup>1</sup>.

---

<sup>1</sup> [www.en.wikipedia.org/wiki/capacity\\_building](http://www.en.wikipedia.org/wiki/capacity_building)

2. Capacity building is the development of an organization's skills and capabilities such as leadership, management, finance and fundraising, programs and evaluation in order to build the organization's effectiveness and sustainability<sup>2</sup>.
3. Capacity building aims to provide knowledge and skills to particular groups in the expectation that they will improve the capacity of the group to change and/or manage their situation for the better<sup>3</sup>.
4. Capacity building includes:
  - Institutional and legal framework development, that is making legal and regulatory changes to enable organizations, institutions and agencies at all levels and in all sectors to enhance their capacities;
  - Organizational development, i.e. the elaboration of management structures, processes and procedures as well as management of external relationships; and
  - Human resource development, i.e. the process of equipping individuals with the understanding, skills and access to information, knowledge and training that enables them to perform effectively<sup>4</sup>.

From these definitions it can be noted that there are common elements which include: institution, organization, individual, acquisition of knowledge, skills and capability, training, process, change and development. The fourth definition above appears to capture these words explicitly. It identifies the distinct components of capacity building as being: institutional capacity, organizational capacity and human capacity. The focus of this paper is on human capacity. Therefore capacity building shall henceforth be used to mean the process for a person or a group of persons to acquire appropriate knowledge, skills and capability needed by an institution to organize its core functions to effectively and sustainably manage change. The focus is on the individual because it is one or many individuals whose innovative, knowledge, skills and abilities are essential inputs to realize the other components of capacity building referred to above. Moreover, human capacity at community level is a prerequisite for all round community development. Capacity building may be formal or informal. Formal capacity building is based on formal academic education and training, usually delivered in a class/lecture room environment. It includes education, research and various forms of training. Informal capacity building is based on human contacts and relations that we develop in our lives such as networking, partnerships and cooperation, short courses, workshops and seminars, conferences, continuing professional education, study tours, visits, consultancy services, on the job training, etc.

This paper proposes broadening of primary and secondary education base as a strategy to establish a large reservoir of citizens from which to get trainable land sector professionals who in many sub Saharan African countries are inadequate. Capacity building is said to be sustainable only when a local source for replacement of outgoing skilled manpower is continuously and readily available. Sustainable capacity building is a continuous and a long-term process.

---

<sup>2</sup> [www.twcf.org/pub\\_reflections/2001](http://www.twcf.org/pub_reflections/2001).

<sup>3</sup> [www.rirdc.gov.au/capacitybuilding](http://www.rirdc.gov.au/capacitybuilding) .

<sup>4</sup> [www.gdrc.org/uem/capacity](http://www.gdrc.org/uem/capacity) .

## **1.2 Why is capacity building needed?**

Capacity building is needed because development demands in the South are high and besides, most projects being implemented in these countries require improved skills, competence and technologies that the South does not have. So the partners incorporate into the projects, education and/or training components intended to transfer or improve know-how and technology to the receiving countries. The inclusion of local participation in the projects aims to achieve the set project objectives and sustainability after the departure of the North partner experts. Capacity building may also be considered necessary to improve or strengthen existing work force, to start a new programme or enterprise, to address staff attrition, etc. Staff attrition through deaths is even more serious in Africa as the following quotation indicates:

‘The majority of people living with HIV/AIDS in the world are Africans. Of the 37.8 million people who were living with HIV/AIDS by the end of 2003, 25 million (66.1%) reside in Africa... Poor households lack education and are at greater risk of HIV infection. ... (Shisana and Letlape, 2004)’.

The loss of skilled workers through the HIV/AIDS pandemic is devastating for the operation of enterprises. In the ‘Issues Paper for the National Land Policy’, Uganda (2004) takes the HIV/AIDS matter with a more serious note as HIV/AIDS is depleting the numbers of land professionals available for delivering land.

## **2. THE MAGNITUDE OF THE PROBLEM**

Lack, or inadequacy, of capacity impedes the process of land administration and management in developing countries, notably in Africa. Importation into the developing world of the western concepts of cadastral system, land administration, land tenure and management has not yet delivered the anticipated benefits. Individuals, particularly the poor, and communities alike are not getting the much desired support and services they need from the land sector professionals to develop the land they hold, or use the land as an asset for their development. A few land sector examples will be cited.

While discussing the challenges facing African municipalities in the provision of infrastructure, Mosha (2006) noted that one of the major problems that municipal/local governments were facing (in Africa) was lack of capacity to run projects and programmes in their areas of jurisdiction or to manage revenue and expenditure. Most municipalities did not have the right caliber of both managerial and technical staff to plan and implement (land development) projects successfully.

Muchima (2006) noted that the main obstacle to the provision of security of tenure in Zambia is the requirement for costly cadastral surveys, lack of capacity to maintain up to-date land records and the shortage of land surveyors. Akakandelwa (2006) adds that the administrative capacity of the Ministry of Lands in Zambia was so weak that it could not provide technical assistance or personnel at lower administrative levels. As a result, the Ministry has not been able to establish its presence in the 72 districts in the country. Hence landholders have extremely limited land tenure security which translates to inability to get access to credit from financial institutions. Adams and Palmer (2007) quoting the draft land policy of Zambia

reconfirm the foregoing as follows: ‘... there is an overall lack of human and institutional capacity, lack of information and basic data, ...’.

Wayumba (2002) observes that one of the major constraints in the effective and efficient management of urban land, conferment of tenure security and property rights in developing countries is the inadequacy of land survey information. Much of the land in developing countries is still not surveyed, documented or mapped at appropriate functional scales to facilitate appropriate allocation of titles which ensures security of tenure and property rights as well as ease of management.

A study on land tenure insecurity in six countries of Southern Africa, (Botswana, Lesotho, Malawi, Mozambique, South Africa and Zambia), reveals that implementation of new land tenure reform laws is painfully slow, haphazard and, in some cases, the legislation has remained unimplemented due to lack of capacity (UNCEA, 2003).

Absence of land tenure security has several consequences that include: landholders living in constant fear of demolition and eviction, actual evictions which create landless and/or people without shelter, inability of land holders to get access to credit for investment with which to alleviate poverty and the consequential rot and degradation of land environment resulting from lack of good land husbandry.

Enemark (2006) notes that in many countries, and especially in developing countries and countries in transition, the national capacity to manage land rights, restrictions and responsibilities is not well developed in terms of mature institutions and the necessary human resources and skills, including managerial and technical skills.

Osterberg (2001), searching for an appropriate cadastral system for Africa, points out that trials to export the European cadastre to traditional land in Africa have generally not been successful partly due to lack of legislation and capacity to implement legislation as well as lack of good management capacity and practices.

Various workshops, seminars and conferences have made similar conclusions on human capacity status in land administration. While delivering his opening speech at the Bagamoyo CASLE Conference for the Africa Region, the Minister for Lands, Housing and Human Settlements Development, noted that there was in Tanzania, limited capacity for policy analysis, planning and project implementation. The same situation is true elsewhere in the developing countries. This is corroborated by the current national land policy documents of Kenya (2007), Malawi (2002), Rwanda (2005), Tanzania (1995), Uganda (2007), and Zambia (2006) each of which refer to impediment of cadastral surveying, mapping, physical planning, and land registration functions caused by shortage of qualified personnel, equipment and technology. Lack of technical and professional capacity in south-eastern Africa has slowed down implementation of National Land Policies (Uganda, 2004).

A look at the urban environments shows that the problem is more serious than words have so far expressed: At global level, about 900 million people in the developing world live in slums

in urban areas<sup>5</sup>. In addition to poverty, most of these people have come to live in slums as a consequence of deprivation of the needed land sector services.

Fourie et al (1999) observe that "... most African countries have only about 1% cadastral coverage ...". The escalation of informal urban settlements could be a consequence of this state of cadastral coverage. In Tanzania, 80 percent of the population of Dar es Salaam City lives in informal settlements (Kyessi and Kyessi, 2007). In the cities of: Nairobi<sup>6</sup>, Kenya, the figure is 60 percent; Kampala<sup>7</sup> in Uganda, 60 percent; Kigali<sup>8</sup> in Rwanda, 80-85 percent; Addis Ababa<sup>9</sup> in Ethiopia, 85 percent; and Accra<sup>10</sup> in Ghana, 61 percent, to name but a few cities. In addition to being haphazardly developed, informal settlements lack or have inadequate basic infrastructure services such as potable water, road network, appropriate sanitation and solid waste collection. They are unhealthy urban environments which cause informality and unregulated urban development. The developing countries of Africa have come to this state largely because the urban planning authorities do not have the capacity to monitor, supervise, regulate and manage urban development. These are some of the overarching challenges.

## **2.1 The experiences of the World Bank and the USAID**

The USAID has undertaken quite a number of projects in sub Saharan Africa. Capacity building features as a component of the projects. The USAID (2004) for instance, noted that Tanzania's successful political and economic development was being impeded by several harsh realities that included institutional and human capacity limitations<sup>11</sup>. In Nigeria and Tanzania, USAID's capacity building initiatives went beyond training of technical personnel, and also provided training for members of parliament and parliamentary staff, focusing on use of improved research facilities and information technology in the hope of contributing to legislative branch effectiveness and better drafted laws.

The World Bank (2005) supported Sites and Services projects and Upgrading of Informal Settlements in several cities in Africa in mid 1970s and early 1980s were not as successful as planned partly because of inadequate capacity<sup>12</sup>.

The inadequacy of capacity also impacts on other socio-economic sectors of our communities.

- During the World Economic Forum 2007 on the Promise of Africa<sup>13</sup> on 26th January 2007, Thabo Mbeki, then President of South Africa, made the following remark:

---

<sup>5</sup> [www.dfid.gov.uk/mdg/slumdweller/factsheet.asp](http://www.dfid.gov.uk/mdg/slumdweller/factsheet.asp).

<sup>6</sup> [www2.unhabitat.org/programmes/landtenure/land\\_policies.asp](http://www2.unhabitat.org/programmes/landtenure/land_policies.asp).

<sup>7</sup> [http://tomsanya.netfirms.com/background/personal\\_thesis.html](http://tomsanya.netfirms.com/background/personal_thesis.html).

<sup>8</sup> [www.globalurban.org/GUDMag07vol31Iss1/Durand\\_Lasserve.htm](http://www.globalurban.org/GUDMag07vol31Iss1/Durand_Lasserve.htm).

<sup>9</sup> <http://addischamber.com/pub/new/editor.htm>.

<sup>10</sup> [www.arch.columbia.edu/Studio/Spring2003/UP/Accra](http://www.arch.columbia.edu/Studio/Spring2003/UP/Accra).

<sup>11</sup> [www.usaid.gov/policy/budget/cbj2004/sub-saharan-africa/Tanzania.pdf](http://www.usaid.gov/policy/budget/cbj2004/sub-saharan-africa/Tanzania.pdf).

<sup>12</sup> <http://web.mit.edu/urbanupgrading/upgrading/case-examples/overview-africa/country-assessment/reports/Countryname-report.html>.

<sup>13</sup> Forum of the Commission for Africa chaired by Tony Blair, then British Prime Minister.

[www.bbc.co.uk/blogs/davos07/2007/01/the\\_promise\\_of\\_africa.html](http://www.bbc.co.uk/blogs/davos07/2007/01/the_promise_of_africa.html)

‘Let’s not add new programmes and projects. But let’s remove the things that block implementation of previously agreed projects. Yes, we made progress, but are we satisfied? No! And that is because we have insufficient capacity to implement what we agreed a year ago’.

- Chipaka (2007) reports that reviews on the Millennium Development Goals (MDGs) in Africa conclude that sub Saharan Africa will not be able to attain the MDGs by the target date of 2015 due to reasons that include weak institutional and organizational capacities.
- In a note to raise awareness of the importance of trade for growth in developing countries, the African Development Bank noted that private sector development and trade could be an engine for growth that would lift millions of people out of poverty and facilitate attainment of the MDGs through expanding Africa’s capacity to manage and deploy resources as well as the ability to negotiate international trade and business deals.
- In Tanzania: (a) The drafting of both the National Land Policy (1995) and the Land and Village Land Acts of 1999 of Tanzania had a significant human resource input from the North. (b) There have been in Tanzania several operational contracts in which foreign firms have taken over the management of various parastatal organizations, (such as Tanzania Electric Supply Company, Tanzania Telephone and Telecommunication Company Ltd, Dar es Salaam Water and Sanitation Authority and Tanzania Railways Corporation), because of lack of skilled and competent staff to support the institutions.

Based on the foregoing, it may be concluded that sub Saharan African countries need new approaches of capacity building initiatives to be able to cope with, among other development sectors, land administration and management of services needed for the development of human settlements. The approach should be on formal education which can establish a broad base of more than just literate citizenry that can participate more effectively in formulation and implementation of national policies. A large base of masses educated to secondary school level constitutes a rich source of researchers and innovators at higher levels of education. The author is of the view that at present access to higher education in Tanzania is a privilege of the sons and daughters of the elite, those in power and the rich. Many of the would-be innovators, particularly talented students from poor families, are not assured of the opportunity to get higher education in most African countries. Furthermore, if access to university education is not adequately competitive, different professional disciplines will not get the needed innovators and creators of knowledge.

## **2.2 Justification for a revived capacity building strategy**

The current approaches for capacity building have not achieved the anticipated targets. This is corroborated by various things, among them: what is said about the developing countries, the state of human settlements, the World Bank and USAID observations as well as the fact that sub Saharan African countries have been receiving capacity building support for half a century

and yet continue to demand more and more support, probably because what has been given has not been adequate, appropriate or sustainable. Therefore a new approach is necessary.

### **3. A STRATEGY FOR SUSTAINABLE CAPACITY BUILDING**

Sustainable capacity building is a tool that liberates a person from ignorance so that he/she can live a decent life, make informed decisions and work more efficiently. Education and training constitute the key components and processes of capacity building. These processes need to be organized systematically, in a holistic approach, so that capacity building is systematically and persistently given attention countrywide. As global development continues to be propelled by information technology towards knowledge based economy, the developing countries do not have options but to embrace the unfolding global development trends.

In this regard it is necessary to critically appraise our primary school education, contents of the curricula, how education is delivered and the quality of the trainers. This approach needs to be replicated all the way through to tertiary and higher level education where university level education is the pinnacle of the educational system. The strategic approach is to promote universal primary education and to extend the concept to secondary and university education with the view to putting in place a large section of national population that is trainable at different levels of professional knowledge and skill needs.

#### **3.1 Primary education**

For a long time, educational priority in Tanzania has been to promote primary schools and literacy (i.e. ability to read and to write). Access to secondary schools among primary school leavers was limited until the late 1980s (Narman, 1992). The strategic approach being proposed intends to deliver wide-ranging mass education that aims higher than just to read and to write.

A sound primary education system forms a firm foundation of a community's capacity. The education system helps the youngsters to create visions and begin educational ambitions for their future. It helps them to perceive the future, enables them to decide what they would like to be and to do in life. The system begins a broad vantage point for the thinking of a community; it sustains national capacity in all sectors of development. The youngsters of today hold the future of a country. They will carry with them what they gained during their youth in terms of knowledge, concepts, ideas and values. So quality primary education must be carefully designed and delivered.

From a sound primary education other levels of education can be pursued and attained with relative ease in the quest for creating and building sustainable capacity for a community. Because of economic reasons, it is not possible to make all children in a community to attain secondary and tertiary/higher education. In deed the education system is often pyramidal in which the base represents primary education, the middle part secondary education, and the top part tertiary/higher education. The larger the apex angle of the pyramid the better the education system, for then many children will have access to secondary and tertiary/higher education.



Ensuring that every school-age child goes to school in line with the spirit of the Millennium Development Goal on universal primary education in developing countries as well as ascertaining delivery of sound education at that level will pave the way for admission into secondary education of suitable, future researchers and innovators.

### **3.2 Secondary education**

Secondary education provides students for tertiary/higher education – university and non-degree higher/technical education. At this stage, the type, content and quality of education delivered needs also to be carefully designed and delivered. It is at this level that students decide between pursuing the arts or mathematics and science subjects. They have to match their ambitions with competency in arts or science subjects. Practitioners in the fields of Geomatics, Engineering, etc. would agree that without mathematics and science students, these professions will cease to flourish. The future of communities would also be at stake as science based professionals would be hard to come by. Emphasis is made on mathematics and science subjects because these subjects do not often get enough students. For example, recently the Engineers registration Board revealed that Tanzania needed to train 20,000 engineers annually to attain national development goals. But in practice only 600 engineers were being trained annually (The Guardian of January 2010). The status is similar in other disciplines. This situation threatens national development programmes that invariably include land administration.

Students at secondary schools find themselves at crossroads. They have to take a final decision about their life long career but before doing so they seek to get information on various issues: They seek to know about national strategies and motivations to get scientists. They look at their immediate environments - their teachers' life styles, the learning facilities, books, laboratories, and materials available around them and the chances of passing examinations. They look back at past performances at their schools and elsewhere. They review their primary school visions against realities that now surround them, they take decisive decisions. Once made, the decisions will be difficult to reverse.

A review of the higher education system in Tanzania has revealed that there is a gross imbalance in student intake for the sciences relative to the liberal arts and gender imbalanced distribution (URT, 1999). This is a critical stage where schools need able career counselors to guide students. If governments in developing countries do not accord priority to improving mathematics and science education at all levels, it is unlikely that the countries will catch up with the developed ones whose development is increasingly being propelled by science and technology.

The contents and quality of the curricula is also important in creating future generations who are conversant with Information Technology as successors of the current generation. The contents are vital in relation to current and future national and global demands. The quality and delivery of the education is thus paramount: It is influenced by, among other things, the educational qualification, ethical standing, competency and commitment of those entrusted with the delivery of education.

### 3.3 Higher education

It is the role of universities to work on education, research, teaching and public service delivery. Tertiary institutions are devoted to human resource development for the middle and intermediate level of the occupational structure of society (URT, 1999). In this paper, we examine university education, reflecting on the land sector disciplines.

A few excerpts of the work of the Task Force (2000) may help to put the challenge the universities of the South face relative to their North counterparts.

‘The world economy is changing as knowledge supplants physical capital as the source of present and future wealth. As knowledge becomes more important, so does higher education. Countries need to educate more of their young people to a higher standard – a degree is now a basic qualification for many skilled jobs. Human capital in the United States is now estimated to be at least three times more important than physical capital. Will the developing countries be able to compete in the knowledge economy?’

Universities create new knowledge through research, transfer knowledge through teaching and apply knowledge through public service delivery. Thus university research can be seen as the engine for invention, economic growth and technological innovation. Universities in the developed countries are creating knowledge at an accelerating pace (The Task Force, 2000). Their counterparts in the South have a challenge to narrow this development gap between industrial and developing countries. The situation in developing countries gets worse if the qualifications of students currently admitted to university education are examined further.

Recently, the University of Dar es Salaam decried the lack of adequately qualified students in mathematics and science, forcing the University to lower entry qualifications of science and engineering courses from 5.0 to 4.5 points<sup>14</sup> in order to get sufficient number of students. This did not help much as only 59.6 percent of the admitted students passed the annual university examination (Daily News No. 9361 of 27 August 2007, Dar es Salaam).

### 3.4 The educational structure in Tanzania

The structure of the education system in Tanzania comprises three tiers, namely; seven years of primary education, followed by six years of secondary education and three to five years university education. The secondary education structure is segmented into Ordinary level running for four years covering Form I to Form IV, and Advanced level taking two years in Forms V and VI. The secondary education is followed by university and non-degree intermediate education.

The shape of the educational pyramid of Tanzania can best be described by an examination of the percentage of the number of primary school leavers who get to university education. Table 1 reflects the current situation. From the data available, less than 20% of all primary school leavers go to Form one. The number drops drastically to about 3.5% of the primary leavers go

---

<sup>14</sup> Entry points refer to the minimum requirements for admission into undergraduate programmes obtained in two principal level subjects at Advanced Secondary School Examinations based on the following scale: A=5, B=4, C=3, D=2, E=1, S=0.5.

to Form V. The number further falls to an average figure that is less than 2% who qualify for admission to university education!

**Table 1: Tracking the percentage of primary school leavers who qualified for university education in 2003, 2004 and 2005. Source: (URT, 2005).**

Year	Secondary 'O' Level		Secondary 'A' Level			Remarks
	Completed Primary 7	Enrolled Form I	Completed Form IV	Enrolled Form V	Completed Form VI	
1996	359,337					
1997		60,641				
2000			47,389			
2001				12,226(c)		
2002					11,575	
2003						5,093
1997	414,069					
1998		62,182				
2001			50,820			
2002				14,433 (c)*		
2003					12,003	
2004						5,677
1998	364,014					
1999		77,444				
2002			49,512			
2003				14,210		
2004					13,975	
2005						8,217

\* (c) Value calculated from percentages of those who scored passes in Division I, II and III.

Qualifying for entry into university education does not guarantee admission into a university. For example in the year 2009, Ardhi University received 1628 applications from eligible candidates, but because of lack of adequate facilities the university could only admit 930 (57% of all applicants) candidates. A similar situation obtains in other public universities.

The number of students who complete secondary (Form IV) and university education viewed against the national population is very small. The population of Tanzania at the 2002 census was 34.6 million (URT, 2003). The number of students who qualified for admission into university education in 2003 was expected to graduate with Bachelors' degree in 2007. With a

population whose annual growth is 2.9% the population was then about 39.6 million. The fraction of the graduates to the entire population was 0.01%, (1 graduate for every 10,000 persons). The National Higher Education Policy (1995) advocates for the expansion of enrolment at all levels of education. Accordingly, the national universities are implementing this call by expanding student admission with the view to doubling their size. But for this to be sustainable it has to take place in relation to what is happening at the lower levels. With the lower levels producing only a handful of university aspirants, the universities are not getting the best from the community. Because the few who filter to university education are themselves academically weak, the quality of the university output is therefore likely to be negatively affected. Because only a small number of primary school leavers get secondary (20%) and university (2%) education, the national population can be described as under educated. Based on this, it is difficult for knowledge created by universities to diffuse to the uneducated masses.

While enrollment has been high, achievements are low. Focusing on the quality of the schools, teachers, students and curricula in primary schools in Tanzania, an analysis in The Guardian daily newspaper of 23<sup>rd</sup> December 2009, notes that the pass rate in the standard seven examinations has been deplorable as in 2001 only 28% of the pupils passed; in 2002 36%; 2003 38%; 2004 37% and 2006 33%. In 2009 a total of 999,070 students sat for the standard seven examination and only 493,333 (49%) passed. The paper further points out that the Tanzanian education system suffers from a predominant focus on quantity than quality and that performance in mathematics has been very low. This means there will be very few students who will pursue scientific careers in science and technology.

The Government of Tanzania has recently (2006) directed that community secondary schools be built in every Ward to raise enrollment in secondary education. Figure 1 reflects the gap between those who completed primary education and those who were enrolled for secondary education during the past 20 years (data adapted from URT, 2009:44&72). The number of students selected for university education is so insignificant that it cannot be visualized on Figure 1 one at that scale.

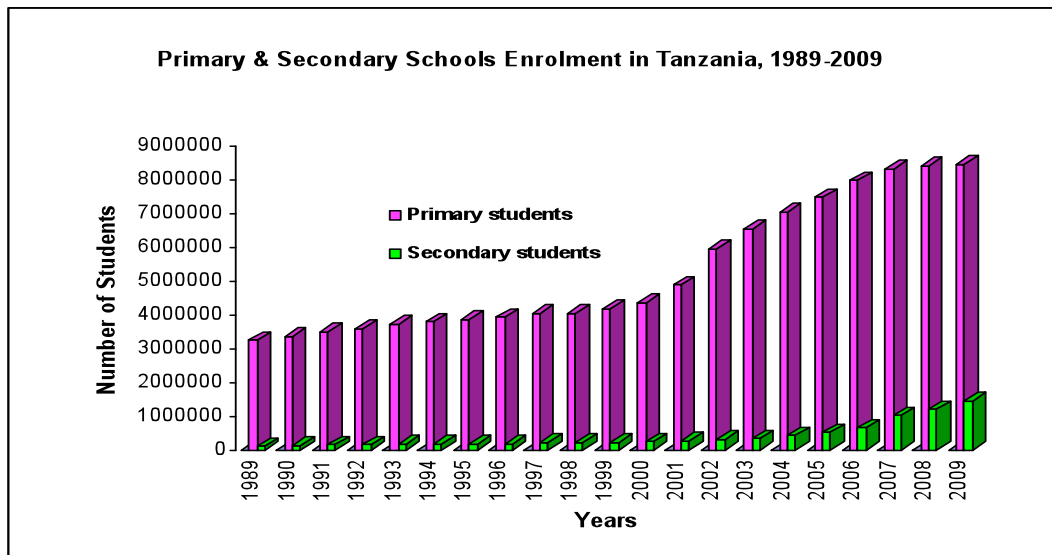


Figure 1: The gap between those who completed primary education and those who were enrolled for secondary education during the past 20 years.

### 3.5 Sharing of resources

Education and training is an expensive undertaking. In most developing countries resources including human, financial, reading material, technical equipment, and infrastructure are extremely limited. For example, funding of public education institutions is often far below the actual needs. The small amounts that are received by a department at a university have always been insufficient for procurement of tools and chemicals needed for teaching and research. If land related departments in different universities, say in East Africa, established some cooperation/partnerships, the use of the few available resources could be optimized. Joint utilization of educational facilities and staff in sub Saharan African universities can be more cost-effective than each university going on its own. Van der Molen (2007) supports this view by noting that sharing of resources is a good idea which is done in China by circulating excellent lecturers.

Under the same spirit of cooperation, departments could carry out joint research and publication of findings, curriculum reviews, workshops, seminars and conferences - in general share resources. Such regional/international partnerships would capitalize on the available synergy to get innovative solutions to local problems, including the vexing questions of slums in our cities, formalizing of customary land tenures and innovating cadastral systems that are pro-poor, to mention but a few examples.

### 3.6 The Ardhi University (ARU)

The Africa Region CASLE Conference in Tanzania (March 2006) recommended that to build local capacity academic institutions should promote quality academic programmes, maintain standards of delivery and form research partnerships. The case of the Ardhi University (formerly University College of Lands and Architectural Studies, UCLAS) is presented. Ardhi University is an example that combines both formal and informal capacity building approaches.

The University came into being in March 2007 following Presidential signing of the Charter that transformed the UCLAS into a full fledged university. The former UCLAS' six departments have been transformed into schools. Of the six schools, three are land sector based, namely Schools of Geospatial Sciences and Technology, Real Estate Studies, and Urban and Regional Planning. There is also the Institute for Human Settlements Studies. The new university has undergraduate and postgraduate programmes in place. The undergraduate programmes are discussed in context from the UCLAS era.

The University admits into its BSc full time degree programmes successful Form Six Secondary School leavers whose minimum entrance passes are two principal passes in the Advanced Certificate of Secondary Education Examination or equivalent, in appropriate subjects, with at least 4.5 points as well as passes in five approved subjects at Form Four Secondary School level. With the exception of the Bachelor of Architecture programme, all the other degree programmes last for four years.

The courses are structured on a semester system with two semesters per year. A semester lasts for 17 weeks of which 15 are for theoretical and practical training and 2 are for end of semester university examinations. Each semester has a main theme. The programmes are project oriented with each semester having a thematic project work. The problem solving approach in the delivery of education is implemented through taught theoretical work, practical work, project work and industrial training. The theoretical work combines lectures with seminars and tutorials while the field practical exercises complement the theoretical work. The project work is inter-disciplinary and comprises a problem solving group work that combines theoretical courses covered during the semester. The project work culminates into an examinable presentation and written report. The projects enable students to learn through combining theory and practice so as to draw students closer to reality. The inter-disciplinary project work helps the students to acquire teamwork spirit in solving real life problems. Industrial training is done at the end of the first, second and third academic years. During industrial training students spend 6 weeks in industry doing production work in real world environments. The second semester in the fourth year of study is dedicated to individual project cum research work that culminates into a dissertation.

The dissertation is meant to develop research capability. Students are encouraged to consult industry with the view to identifying researchable issues. The project based training has had some impacts that include:

- Students have acquired practical skills required by industry.
- Students contribute in national development projects during the period of Industrial Training.
- Students acquire entrepreneurial skills at an early stage to make them job creators, innovators and a community resource which may be mobilized.

### 3.6.1 Curriculum development and review

To address current needs and problems adequately as well as modernizing the curriculum, the curriculum is reviewed periodically as follows:

- Periodic academic audits are done every eight years to assess strengths, weaknesses, relevance and quality of teaching.
- Departments review and update their curriculums every 4 years, taking into account recommendations of external examiners, feedback from stakeholders' consultative meetings including related in-country professional societies, periodic tracer study findings, and evaluation by students.
- Departments may conduct special mini reviews of their syllabi to take care of major changes or oversights that might have been left out during the immediate past full review.

### 3.6.2 Staff development

As the university is relatively young, it is building and strengthening its capacity through training of its staff at postgraduate levels (MSc and PhD programmes) and recruiting new staff in a drive to fill the many vacancies arising from expanded programmes in each new school as well as staff to take the places of retiring ones. Several academic and non-academic staff are doing postgraduate studies in Sweden, the Netherlands, Britain, USA, Tanzania, etc.

### 3.6.3 Research agenda

Each of the schools has a Research Agenda to which academic staff and students are encouraged to refer when writing up research proposals. Members of academic staff guide students into various research themes in line with the research agenda.

Research Agenda areas relevant to land administration and management include: Land Policy, land development and management, Land tenure and land administration, Land access and registration, Valuation in emerging property market, Real estate investment, Land management, Geodetic datum definition, Cadastre and cadastral databases, Land information management, Spatial data infrastructure, Information communication technology, Geo-information technology and management, Mapping for management of resources, Upgrading and regularization of urban informal settlements, Land servicing and infrastructure provision, Urbanization and environment, Urban management and governance, Poverty reduction, decentralization and urban development (FLEE, 2006).

### 3.6.4 Informal schemes of capacity building

The informal schemes of capacity building are accomplished through continuing education, cooperation/links with other institutions, public service to community and attending conferences, workshops and seminars. The University has a centre for continuing education which coordinates and organizes short courses on demand.

To enhance its capabilities in training, research, networking and exchange of experiences and information, the University seeks to establish close cooperation and partnerships with other academic institutions within and outside Tanzania. The University maintains links with various sister institutions that include the Universities of Makerere in Uganda, Nairobi in Kenya, Cape Town in South Africa, Dortmund in Germany, the Institute of Geo-Information Science and Earth Observation (ITC) in the Netherlands, the Royal Institute of Technology

(KTH) in Sweden, Wageningen University also in the Netherlands, Oslo School of Architecture (AHO) and Norwegian University of Science and technology in Norway.

The University has a consultancy directorate which coordinates service to community (consultancy services) offered by various departments. So far most of the consultancies have been done within Tanzania. Provision of consultancy services is seen as a means to generate income to supplement subventions received from the government, to enable members of academic staff to interact with the wider community through addressing real life problems and so improve their effectiveness in delivery of education and research. Members of staff also attend seminars, workshops and conferences to keep abreast with recent developments in their disciplines.

### 3.6.5 Land administration unit at ARU

The Ardhi University has established a Land Administration Unit whose main objective is to ensure delivery of quality education and training, research, scientific publications, training, information dissemination, documentation and public services through integrated cross disciplinary team work and national, regional and international collaboration/links in land administration. The Unit has already established a partnership with UNU (United Nations University)-ITC School of Land Administration Studies with the view to conducting joint postgraduate programmes (initially, diploma then MSc degree courses), research, distance learning, short/refresher courses, workshops, seminars, conferences, advisory services, etc. in land administration. The Unit is also developing a partnership with the Property and Business Formalization Programme to work jointly on the ongoing programme of Property Formalization. The Unit plans to develop an African network of academic partners in land administration.

### 3.6.6 Output

Up to November 2008, Ardhi University and its predecessors (Ardhi Institute and UCLAS) had produced 813 graduates in the various disciplines of the land sector. Most of them have found employment within the government departments and in the private sector.

## **4. CONCLUSION**

Capacity building is a common challenge in most developing countries. Because of the low human capacity in land administration and management in most Eastern and Southern African countries, implementation of land administration and management functions has not been as successful as expected. Education contributes to development in a variety of ways; including invention and innovation, increasing trainability of people and raising their productivity (Caillods, 1992). The developing world needs a reservoir of 'educated local community' which will be the fountain of producing local experts who will be the foundation of innovative thinking and implementers in addressing local level needs in various fields, including land administration and management; promotes democracy and good land governance, address gender and equity issues.

Balanced and strategic investment in the quality of both primary and secondary education is important to: (a) put in place a trainable cum understanding community and (b) strengthen



higher education. For this purpose, primary and secondary schools should have sound education as well as graduate large numbers of students so that through competitive selection from among the many, universities may get the best researchers and innovators needed for land administration and management, among other disciplines. A community whose large part has acquired primary to secondary education will also understand and respond more proactively in implementation of national land policies and promote activities of civil society. So both men and women must be provided with adequate broad based education and training to establish stable communities, facilitate equity in land access, use and control of land by women and vulnerable persons, alleviate poverty, and enhance informed participation in the implementation of national policies.

Beyond secondary education, university education is a prerequisite for the creation of new knowledge, dissemination and application of knowledge for national development. This is the approach necessary to getting the innovative approaches needed to resolve and formulate appropriate: land policies, land tenure, land administration, cadastre and land registration, land use control and management. Without a deliberate shift to education and knowledge for the masses, developing countries face a bleak hope for sustainable improvements in the land sector and other areas.

## **5. RECOMMENDATIONS**

### *1. The developing countries should change from just focusing on literate communities to knowledge based communities*

So far most developing countries have been improving literacy of their citizens. These efforts should be carried further to make the citizens knowledgeable so that a larger section of the population can produce innovative ideas, knowledge and information for application to land and other natural resources for socio-economic development. Special strategies should therefore be conceived to make school students to develop a liking for mathematics and science subjects which are fundamental to the development and application of science and technology.

### *2. Extend the vision of universal primary education to secondary schools and introduce aspects of land administration and management into school curricula*

Everyone is a land user, and therefore a land manager in one way or another. Hence there is need to prepare everyone to play active role in the maintenance of this resource. Education imparts general knowledge that makes everyone a better manager of the land resource. Therefore, the Millennium Development Goal's vision on Universal Primary School Education should be extended to include secondary school education – with strict adherence to quality assurance on curricula, depth and delivery. Furthermore secondary school students should be motivated to pursue science subjects so that on reaching higher levels they can become eligible to take science and technology based programmes.

### *3. The FIG ought to lead other International Professional associations to support universities to carry out focused land based research*

The international professional associations such as the International Federation of Surveyors (FIG), Commonwealth Association of Surveying and Land Economy (CASLE), etc. should

consider initiatives to support universities in the developing countries to carry out research in topical land issues.

*4. Local professional societies are urged to cooperate with universities to identify research areas and jointly prepare research agenda and proposals for discussion at local and international forums*

Local Professional Societies such as the Institution of Surveyors of Tanzania (IST) working jointly with lands and land related departments in universities, should present at every local and international forums land development research proposals for evaluation and support.

*5. In addition to invigorating cooperation with their counterparts in the North, land related university departments, schools and faculties, in the South ought to foster partnerships with national, regional and international sister establishments with the view to facilitating sharing of resources and to broaden such cooperation to the universities in the North*

Land related departments in universities in the South should foster partnerships/cooperation among themselves as well as with their counterparts in the North with the view to optimizing on the use of the few available teaching and research resources, and to interact with and learn from the universities in the North.

*6. FIG is urged to develop research indicators and feedback mechanism that will ensure success of these recommendations*

In this task, FIG should annually liaise with country professional societies and universities regarding ongoing research programmes.

## REFERENCES

**Adams, M., and Palmer, R., (2007).** Independent Review of Land Issues, Volume III, 2006-2007, Eastern and Southern Africa, June 2007. In: [http://www.oxfam.org.uk/what\\_we\\_do/issues/livelihoods/landrights/downloads/independent\\_review1](http://www.oxfam.org.uk/what_we_do/issues/livelihoods/landrights/downloads/independent_review1).

**Akakandelwa, N., (2006).** The Role of Education and Training Institutions in Promoting Sustainable Land Management in Africa. Paper presented at the Africa Region CASLE Conference held in Bagamoyo, Tanzania, 14-17 March 2006.

**ARU (Ardhi University).** Prospectus 2008/09-2010/11, Dar es Salaam.

**ARU (Ardhi University).** Facts and Figures 2008/09 (Draft Document), Dar es Salaam.

**Buchert, L., (1992).** Education and Training in the Third World – The Local Dimension, Centre for the Study of Education in developing Countries (CESO), publication No 18, The Hague.

**Caillods, F., (1992).** The Local Dimension of Education and Training and the Role of Educational Training, In: Buchert, L., (ed.), (1992). Education and Training in the Third World – The Local Dimension, Centre for the Study of Education in developing Countries (CESO), publication No 18, The Hague.

**CASLE (Commonwealth Association of Surveying and Land Economy), CASLE Constitution, (2007).**

CASLE (Commonwealth Association of Surveying and Land Economy), CASLE Newsletter No. 30 of September 2006.

**Chipaka, J.T., (2007).** It is Almost Half Time; Will the SADC Region Achieve the Millennium Development Goals by the Target Date of 2015? A Southern African Regional Poverty Network (SARPN) publication, publication. In: [www.sarpn.org/documents/d0002679/index.php](http://www.sarpn.org/documents/d0002679/index.php) Accessed August 2007.

**Enemark, S., (2006).** Capacity Building, In: GIM International – the Global Magazine for Geomatics, December 2006, Vol 20, Issue 12.

**FIG (International Federation of Surveyors), (1998).** Constituting Professional Associations, FIG Publication No. 16. [www.fig.net/pub/figpub/pub16/figpub16.htm](http://www.fig.net/pub/figpub/pub16/figpub16.htm) June 17, 2007

**FLEE (Faculty of Lands and Environmental Engineering), (2006).** FLEE Rolling Strategic Plan, 2005/6-2009/10. UCLAS, July 2006, Dar es Salaam.

**Fourie, C. and Nino-Fluck, O. (1999).** Cadastre and Land Information System for Decision – Makers in the Developing World. Paper presented at the UN-FIG Conference on Land Tenure and Cadastral Infrastructures for sustainable Development, Melbourne, Australia, 25 – 27 October, 1999.

**Kyessi, S. A. and Kyessi, A. G., (2007).** Regularization and Formalization of Informal Settlements in Tanzania: Opportunities and Challenges – A case of Dar es Salaam City. In: [www.fig.net/pub/fig2007/papers/ts\\_8d/](http://www.fig.net/pub/fig2007/papers/ts_8d/). paper presented at FIG Working Week 2007, Hong Kong SAR, China, 13-17 May 2007.

**Mosha, A.C., (2006).** The Challenges of Financing Municipal Infrastructure Provision in African Cities. Paper presented at the Africa Region CASLE Conference held in Bagamoyo, Tanzania, 14-17 March 2006.

**Muchima M. J., (2006).** Towards Sustainable Housing Delivery: A Look at Land Administration in Zambia. Paper presented at the Africa Region CASLE Conference held in Bagamoyo, Tanzania, 14-17 March 2006.

**Narman, A., (1992).** Basic Education and Relevant Schooling in Africa: the Need to Bridge the Gap, In: Buchert, L., (ed.), (1992). Education and Training in the Third World – The Local Dimension, Centre for the Study of Education in developing Countries (CESO), publication No 18, The Hague.

**Shisana, O. and Letlape, L., (2004).** The Impact of HIV/AIDS on the Sub Saharan Africa Economy, Social Aspects of HIV/AIDS and Health Human Sciences Research Council, ECA paper, December 2004. In: [www.commissionforafrica.org/english/report/background/](http://www.commissionforafrica.org/english/report/background/)

**The Task Force, (2000).** Higher Education in Developing Countries - Peril and Promise, World Bank, Washington DC

**Uganda (The Republic of Uganda), (2004).** Issues Paper for the National Land Policy- Land Tenure Reform Project, Ministry of Water, Lands and Environment.

UNECA (United Nations Economic Commission for Africa), (2003). Land Tenure Systems and Sustainable Development in Southern Africa. Southern Africa Office. ECA/SA/EGM.Land/2003/2. In: [http://www.unecea.org/eca\\_resorces/publications/srdcs/land](http://www.unecea.org/eca_resorces/publications/srdcs/land)

**URT (United Republic of Tanzania) (1995).** The National Land Policy, Second Edition, Ministry of Lands and Human Settlements Development, Printed by the Surveys and Mapping, Dar es Salaam.

**URT (United Republic of Tanzania), (1999).** National Higher Education Policy. Ministry of Science, Technology and Higher Education, Dar es Salaam, February 1999.

**URT (United Republic of Tanzania), (2003).** 2002 Population and Housing Census General report, National Bureau of Statistics, President's Office Planning and Privatization, Dar es Salaam, January 2003.

**URT (United Republic of Tanzania) (2005).** Basic Education Statistics in Tanzania (BEST) For the Period 1995-2005, Ministry of Education and Culture, Dar es Salaam, June 2005. <http://www.tzonline.org/pdf/basiceducationstatisticsbest199520051.pdf> accessed August 2007.

**URT (United Republic of Tanzania) (2009).** Basic Education Statistics in Tanzania (BEST) 2005-2009, National Data, Ministry of Education and Vocational Training, Dar es Salaam, July 2009.

**Van der Molen (2007).** Personal communication, August 2007.

## **BIOGRAPHICAL NOTES**

Eugene H. Silayo is a land surveyor cum cartographer. He has wide experiences as a practising professional surveyor and an academician. He is currently working as a Senior Lecturer in the Department of Geomatics, School of Geospatial Science and Technology at Ardhi University, Dar es Salaam, Tanzania. He has published and presented many conference papers on cadastral surveying, cartography and land administration. His outstanding publication is a textbook titled Cadastral Surveying Practice in Tanzania. He is a Fully Registered Surveyor and a Fellow of the Institution of Surveyors of Tanzania (IST). He is currently a Vice President of the Commonwealth Association of Surveying and Land Economy (CASLE) for East Africa sub region, a member of CASLE's Land Administration Group and a coordinator of the Land Administration Unit at ARU. His current research interests focus on cadastral systems, land administration and land policy.

## **CONTACTS:**

Mr. Eugene Silayo  
Department of Geomatics,  
School of Geospatial Science and Technology,  
Ardhi University;  
P.O. Box 35176,  
Dar es Salaam,  
TANZANIA;  
Tel. +255 22 2775004, Cell: +255 784 312242, Fax +255 22 2775391,  
E-mail: [silayo@aru.ac.tz](mailto:silayo@aru.ac.tz).  
Website: [www.aru.ac.tz](http://www.aru.ac.tz)