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# Educational breakthrough in Eritrea: some expectations and outcomes

Ravinder Rena
*Assistant Professor of Economics, Department of Business & Economics,*
*Eritrea Institute of Technology, Mai Nefhi, the State of Eritrea*
Email: ravieritrea2007@gmail.com ; ravinder_rena@yahoo.com

**Abstract:** The ongoing national reconstruction process of Eritrea is centered on the educational reformation. The Government of Eritrea has developed educational policy on top priority of national development which demands the emergence of new class of trained youth blended with disciplined mind with skill instead of raw graduation. In this line, it laid down new policies and curricula suit to the immediate national scenario. It had installed about eight colleges at tertiary level within a short span of time to build manpower resource required for present and future. This article analyses the strengths and weakness of the policies, planning and the infrastructure requirements to meet the intended goal. The outcome of the educational reformation is expected to have a profound effect on the development of the Nation. Hence, it becomes curious watch for the educational reformists around the globe.

*Keywords*: Education Policy, Eritrea, Human Capital, Economic Development, Gender Inequality.

## Introduction

The exploding human population imposes rapid changes on the planetary resources. The scope and impact of such changes are multidimensional with implications of transcending the geographic and cultural boundaries. The Human Development Report states that "to address the growing challenges of human security, a new development paradigm is needed that puts people at the centre of development, regards economic growth as a means and not an end, protects the life opportunities of future generations as well as present generations, and respects the natural systems of which all life depends" (UNDP, 1994).

Indeed education plays a dominant role as an effective instrument for large-scale achievement and revolution in all spheres. Purposeful education enables the individual to understand and study the real life situation and to develop an opportunity for creating confidence in the minds of younger generation, and provide a strong base for rational and value-oriented and nation-building progress (Myers & Harbison, 1965; Mingat & Tan, 1986; Rena, 2000). Technical and vocational courses in higher education play a significant role in this context. Therefore, a close introspection of the trend of technical and vocational courses in higher education is essential, not only for making them attractive, but also in shaping them to be economically and socially relevant to Eritrea (Rena, 2006a).

## *Country Profile*

The State of Eritrea is a small mountainous and newly independent developing country in the "Horn of Africa". It is bordered in the North and West by Sudan, in the South by Ethiopia and Djibouti and in the East by the Red Sea. Eritrea got its independence on May 24, 1991 after thirty years of freedom struggle. It has an area of 121,144 sq km and has an estimated population of 4,670,000 (2005 est.).[1] Its capital is Asmara. The population is composed of nine ethnic groups and the country divided into six administrative regions.[2] The population has been equally divided between Christians and Muslims. Like many African economies, the economy of Eritrea is largely based on subsistence agriculture, with more than 75 per cent of the population involved in farming and herding. It has the GDP (purchasing power parity) per capita income of $280 (2006 estimates) (Rena, 2006a). Despite scarce resources, attributable to the harsh environment on the highland plateau and barren desert along the red sea strip, limited agricultural space in the lowlands for sustainable agricultural activities such as subsistence and pastoral farming, and the many challenging issues associated with development that have been exacerbated by the additional environmental and social burdens associated with the aftermaths of a post-conflict era. Besides, Eritrea remains one of the poorest countries in the world, with a Human Development Index (HDI) of 156 out of 177 countries. More than half of the population lives on less than US$1 per day. Eritrea's biggest asset is its people, so their development is its only hope for economic growth (Rena, 2007a).

Since independence, the government of Eritrea has embarked on a wide-ranging

program designed to revitalize and develop the collapsed economy and to promote its long-term growth. The Macro Policy of Eritrea states, among other things, that in the long-term, Eritrea will be producing "knowledge intensive" goods and services able to penetrate the world market (Government of Eritrea (GoE), 1994). The emphasis on education is also reflected on the government's policy on poverty eradication (Rena, 2006a). The overall vision of Eritrea ultimately demands for the need to tone up the human capital, particularly through strengthening the educational and health sectors (GoE, 1994). Thus, Eritrea places strong emphasis on education.

The priority-based political will of Eritrea to build manpower resource ingrained with discipline and literacy skill, is unique for the rest of the African country. While a closer analysis of such developments will be of extreme importance for national builders and educational administrators of Eritrea, its future impact and long-term benefit will be an ideal case study for educational reformists around the world.

This article explores and analyses Eritrean educational development and its key challenges. It also provides some useful insights for the policy development which is based on the secondary data collected from various sources. The data is centered on the reports of Ministry of Education and other colleges in the country. In some cases data has been projected by the author himself based on the current tertiary educational trends in the country.

The article has been divided into five sections. Section one touches upon gender status; while the section two discusses the role of youth in national development. Section three covers tertiary education and its development in Eritrea. Section four dwells on some post-independence challenges the educational sector has been facing and the final section provides conclusion drawn by the author.

## 1. Education and Gender

The crucial role of human capital for growth and economic development is well understood. Although some authors still underlined the possibility of a negative relationship between girls' education and growth (Barro & Sala-i-Martin, 1996), many agree on the importance of girls' education (Blackden & Bhanu, 1998; Rena, 2007a). However, developing countries exhibit huge gender inequalities in education (Rena, 2005c). Enrolment rates remain lower for girls than for boys in most developing countries. In low income countries, the gross enrolment rates in primary education are equal to 103% for boys and 84% for girls. In high income countries, they are about 103% for boys and 104% for girls (World Bank, 2000; Rena, 2000).

Even if the positive relationship between economic development and the gender gap in education seems to be clear, the sense of causality remains uncertain (Kremer and Chen, 1999). Indeed, we can wonder if the gender gap in education is the cause or the consequence of underdevelopment. In order to highlight the relationship between girls' education, growth and economic development, we examine the gender gap in education and its consequences, notably on income inequality (Rena, 2005c).

The total number Eritrean students at all levels was about 186,000 in 1991 and reached to about 700,000 in 2006.

The female participation at all the levels is not encouraging; this is so particular in higher education, where less than 20 percent are entering into higher education. The data from the Ministry of Education shows that there are many reasons behind the low enrollment of female students. In the lowland areas where the Muslims are majority, many families tend to withdraw their children from school when they become adolescent since they don't want them to go to the same school with the boys (Rena, 2005c). There is also an issue of underage-marriage. They don't want to send them to Sawa to complete their high school. Many prize-winning students tend to stop their education due to cultural and religious barriers. It is to note that absence of middle school in Molki, Shambiko, Logo Anseba and Barka also has its role to play. The male students can rent a house in towns and go to school. Parents don't allow their female children to take that initiative.

In addition to the above-mentioned difficulties, parents do not have faith on their female children to be as productive as their male children even if educated. Nevertheless, in some of the schools, there is equal participation of both genders and most of the prize winners are females. They can compete with their male counter parts if they get equal chance to study. In the first semester of the academic year 2006/07 for example, in Sewra

Elementary School, 47.6 percent of the students were females. Around 55 percent of those who stood from 1st to 5th rank were females.

As they grow older, female students get weaker, housework being the main reason. In Zoba Debub for example, female enrollment is 35-39 percent in middle school. It drops to 27-28 percent in highs school though and their status drops equally. It further declines to less than 20 percent at tertiary level. The distribution of middle and high school is lower than elementary which forces students to travel long. Parents don't allow their female children to rent a house around the school; they do not buy them a cycle either. This encourages underage-marriage. Besides, the girls spend a lot of time doing housework. Cultural barriers, AIDS and economic problems are also additional reasons for their low enrollment. If parents die of AIDS, the female children tend to take the responsibility of the house, which narrows their chances of succeeding in education.

Children and youth need to have role models. The Ministry has been trying to train female teachers so that they will serve as role models to the students. However, most of the teachers in remote areas are males for many reasons. It is easier for female teachers to bring behavioral change among female students. This method has brought an ideal change in some boarding schools like Maria Boarding School. That is not enough though; we should create job opportunities for those who have completed middle and high school so that the people will value importance of education.

## 2. Youth and education in Eritrea

Education also helps youth to understand, control and harness the forces of nature. Through shaping the behavior of youths and creating confidence in the minds of youth, education provides a strong base for rational and value-oriented, nation-building progress (Woodhall, 1992). There is no doubt that education is an effective instrument for large-scale achievement and revolution in all spheres. Furthermore, it assists and accelerates economic growth (Rena, 2002).

Soon after freedom, the educational reconstruction process in Eritrea gained top priority and recorded considerable changes at all levels including primary, secondary and tertiary educations. Particularly, the recent past witnessed radical changes in tertiary education obviously aimed at rehabilitating the Youths of Eritrea, who missed the formal higher education in lieu of freedom struggle, en mass into intellectual resource within a short span of time. Eritrean youths played vital role in the freedom struggle and are considered to be the pillars of the future nation.[3] The Government of Eritrea is actively involving them in the current Nation building process too (Rena, 2006b). Therefore, with the greater obligation of integrating them into the academic stream along with the current students of the formal educational stream has been the necessity for the educational development of Eritrea.

Given that upgrading youth capabilities will strengthen their position as the cornerstone in the advancement of the country, the Government of Eritrea is undertaking youth rehabilitation and qualification programmes in various fields and, accordingly, giving them more emphasis. As an example of this, Eritrea has allocated more than 4 per cent of its national income, and about 37 per cent of budget services, for educational programmes (Rena, 2005b). This is indeed a major indication of the concern of the State regarding the development of human resources. This financial investment translates directly into the building of pre-schools (kindergartens), elementary and secondary schools, all the way up to university education (Rena, 2006a).

Eritrean youth are solid assets of the country. The country could not have put its economy onto a development path without the readiness of its citizens, especially its youth. Hence, youth in Eritrea are playing a pivotal role in the reconstruction of the economy under the umbrella of the *Warsay Yikealo* National Development Campaign. Recognizing this, the Eritrean government is trying to provide the privilege of education to those youth who have participated in such development activities as a kind of incentive. For example, the 5,500 youth that took the first matriculation exam in 2003 in the *Warsay Yikealo* Secondary School were given the opportunity to continue learning in the Eritrea Institute of Technology (EIT), Mai Nefhi. Additionally, the 8,500 students who took the matriculation exam in July 2005 are joined the EIT. Every year substantial number of students (about 10,000) is joining in EIT and other colleges in the country.

In Eritrea, the students who complete grade XI, will go on to attend the *Warsay Yikealo* Secondary School at Sawa[4] to complete grade XII and take the matriculation

exam there itself. Based on the exam results, the students are then assigned to either EIT-Mai Nefhi or other colleges in the country based on their matriculation result (Table1). The basic qualification for the students to enter into the higher learning institutions is that they have to complete their matriculation in Sawa with 12th grade and secure the required Grade Point Average (GPA) which differs for degree and diploma and vary from time to time. The details are presented in table 1. With such a strong academic opportunities available to them, Eritrean youth have a good chance of finding ways of supporting their own life and the life of their families for future (Rena, 2006b).

The table 1 reveals that one-fourth of the students of 2004 batch were in 0-0.2 of Matriculation CGPA grade which obviously are not a laudable one. In comparison to this only 0.31 per cent students of 2005 batch were in 0 - 0.2 Matriculation CGPA grade. Again the fraction of students above 2.6 (Matriculation CGPA) is much higher in 2005 than that of 2004 batch. Another revealing point is that most of the students of 2004 batch (70 per cent and above) hovering from 0-.2 to 1.8-2.0 Matriculation CGPA. At the prima facie, it seems 2005 batch students are better than 2004 batch. The CGPA for the same group of students (2005) at EIT is presented in Table 2.

It is evident from the Table 2 that percentage of students securing 2.6 CGPA and above at EIT are comparatively better than the Matriculation CGPA (Table 1). In other words students of 2005 batch have comparatively done better in EIT than their Matriculation Examination.

Another noteworthy point is that students of 2005 batch, secured 2.6 or more, preformed better than the 2004 batch as EIT CGPA for 2005 batch ≥2.6 was 18 .13 per cent against 10.31 per cent of 2004 batch of students. It is pertinent to mention that for 2004 batch students instead of ≥2.6, the figure is ≥2.75. In other words, for 2004 batch of students, 0.5 distribution was considered against 0.2 distribution in 2005. Clearly, the revitalization of educational sector is now the emerging scenario in Eritrea.

Hence, it is imperative to enable citizens through education and skill enhancement is more critical today to bring the social and economic change. There is fairly well-founded concern that in the next decade, Eritrea could find itself performing a difficult balancing act: catering to the needs of a significantly large growing population while trying to find opportunities for a newly emerging workforce of youth that does not have marketable skills. It is to be noted that thousands of youth enter into the workforce each year in Eritrea without the benefit of a high school education and most have no skills for the job market (Rena & Kahsu, 2006). This must come as a sobering reality to those who are euphoric about the nation powering its way to superpower status in the foreseeable future.

The imparting of skills largely depends on the Industrial Training Institutes (ITIs) and technical schools that have a base in the public and private sectors of Eritrea. The ITI system, despite some attempts at a revamp, is viewed as insufficient and weighed down by factors such as the limited range of skills taught, outdated technology, high cost, and the requirement that those entering the system possess at least a high school qualification. The challenge before the State, therefore, is to build on the existing infrastructure of ITIs, schools, colleges, and institutions in the private sector. Computers and multimedia now make it possible to learn in an interactive manner and should help form the core of any new strategy (Rena, 2006b). The potential of multimedia to train both literate and illiterate youth makes it all the more attractive. Courses in the service sector areas, such as tourism and health care, could be taught at centers employing such technology, in addition to the existing schools and colleges in Eritrea.

The youth's economic reconstruction efforts have been successful in improving the quality of the country's infrastructure. The overall reliability of the supply of power, transport and communication services has been restored and improved substantially in most parts of the country through the *Warsay Yikealo* Development Campaign. Eritrean youth not only cherish deep memories of their aspirations to break the fetters of colonial rule, but also renew their pledge to build the Homeland and create a solid foundation embodied with the concepts of ardent patriotism, unshakable unity, and hard work. Hence, the youth have a strong belief and confidence that "we can do it and we will do it" (Rena, 2006b).

For a juvenile nation as Eritrea, human capital formation plays a commanding role in activating the process of socioeconomic transformation. The building up of human

capital is tremendously influenced by the standard of education made available by the educational institutions (Rena, 2002). While committing to the human capital building process, the policy makers enshrined enough room for diversification in the capacity building as and when the need arises. For example, while the Nation experiences all round reconstruction process, there is obvious paucity of trained manpower initially for various administration and planning within the government sectors. It included the urgent requirement of administrators and teachers in educational sector, public administrative clerks and engineers (building and repairing of road, offices and industries). Hence, the birth of higher educational institute- Eritrea Institute of Technology (EIT) is linked with the generation of skilled manpower for the immediate requirement.

### 3. Tertiary education in Eritrea

As soon as we stepped into the new millennium, the global economy has already experienced unprecedented changes, more so in the last three decades. Rapid strides in science and technology, the advent of computers, globalization and the pressure of world market made a great spur in the educational sector. We are witnessing several paradigm shifts in higher education, from "national" to "global education," from "state controlled" to an "open market economy," from "general education" to an "educational system driven by market forces," from "one-time education for a few" to "lifelong education for all," and from "teacher centered" to "learner centered" education, from classroom education to "digital learning" and from "science laboratory" to "virtual laboratories". These changes make new demands and pose fresh challenges to Eritrea's established education systems and practices (Rena, 2007b).

The World Bank (2000) acknowledged the importance of technical and higher education for countries not to be left behind in a global economy based on knowledge. Criticizing an analysis that measures the benefits of higher education solely in terms of incremental earnings accruing to individuals, higher education is regarded as 'simultaneously improves individual's lives and enriches wider society'. Further, education is a lifelong process. What a student obtains from the school and college is only a small part of the education that needs for the economic and social life of human being. Thus, both in the case of man who is determined to reach the summit, and the man who wants to make a complete success of his life, additional education is imperative to develop the special skills. Therefore, the education must be constant and continuous programme (Myers & Harbison, 1965; Bacchus, 1992; Rena, 2005b).

In order to foresee the better challenges of tertiary education in Eritrea, the MoE estimated the enrollment patterns at the 12$^{th}$ grade level and also the corresponding enrollments at the tertiary level. The Ministry of Education has prepared these forecasts for the next 10 years for the 12$^{th}$ grade level. If the current levels of access are maintained, then assuming even a lower figure of 40 per cent (15% degree and 25% diploma) access rate to tertiary education, the picture looks like what shown in Table 3. To obtain the estimates of the total student population at the tertiary education institutions, degree programs are assumed to have durations of 4 to 5 years while the corresponding figures for the diploma programs are assumed to be 2 to 3 years (MoE, 2006).

When we look at the educational profile: at tertiary level, the erstwhile Asmara University (now houses the College of Business & Economics), Eritrea Institute of Technology (3 colleges) and 4 other colleges located in different parts of the country.

The University of Asmara's total student enrollment in degree programs in the past increased from 2,836 in 1995-1996 to 3,912 in 1999-2000, a growth of 28 per cent in 4 years. In 1999-2000, total enrollment at the institution topped 4,500 (Rena, 2007c). In addition, the university awards 1202 in 2006 out of which 948 with degree, 209 with diploma and 45 in Masters in select fields. The university has graduated batches for the 14$^{th}$ time since independence with a total of 10,160 students of which 70 per cent are in degree (Rena, 2007a). However, it has been remained closed since September 2006 and all the staff and students were transferred to EIT and other concerned colleges.

#### *The Eritrea Institute of Technology (EIT)*

The Eritrea Institute of Technology is considered as Eritrea's biggest boarding educational institute in the post-independence period. It is established in February 2004 and situated at about 28 kilometers (17 miles) southwest of the country's capital, Asmara. It caters the needs of more than 10,000 students and about 400 faculty members, including

expatriates, Eritreans of Diaspora and Graduate Assistants and the students of University Service (Rena, 2006a). It has a number of new and emerging departments; indeed, it is hoped that EIT makes an institute of its own kind that will boost Eritrea's educational, technical and developmental standards manifolds in the coming years. In fact, EIT within its four years of inception has recorded tremendous growth so as to offer fifteen Degree programs and equivalent or more Diploma programs from its 21 Departments (Table 4) at one point of time. To this effect, it crystallized its own curricula of international standard similar to the American Education System without spending much gestation period. Due to the recent policy of decentralization of education, conglomerates of EIT are now separated into full-fledged campuses of their own at different geographical locations. Presently, EIT at Mainefhi (Central region) houses three colleges: the College of Engineering and Technology, the College of Science, the College of Education. However, it is accommodating the College of Arts and Social Sciences which is to be shifted in 2008 to Adi Queyha town (southern Region).

The pleasant weather, newly built road facility, transportation support, adequate computers, the upcoming infrastructure, disciplined-students and pollution-free environment certainly contribute towards nation building to meet the Millennium Developmental Goals (MDGs) set by the United Nations. Undoubtedly, EIT becomes the single most knowledge-base for the Nation (through liberal blending of the expertise of the largest expatriates with the local doyens). As stated earlier, the institute has been offering degree, diploma programs in numerous advanced disciplines with ambitious need of serving its country by its own human resources in the near future. However, there is an urgent need for the establishment of Information and Communication systems and laboratories to equip the nation's youth with the essence of science and technology. The ideology probably centered on "enrich the institute more and serve the nation better".

After the couple of years EIT found, with the enough breathing-time, focus has been laid on the improvement of other sectors including agriculture, health, management of marine resources and trade and commerce. Thus four more colleges were built for the above purpose which includes: the College of Agriculture at Hamelmalo in Anseba region, the College of Marine Sciences at Hirgigo in Northern Red Sea region, the College of Business and Economics at Halhale in Southern region (temporarily shifted to the erstwhile Asmara University campus in October 2007), and the College of Health Sciences at Asmara in the Central region. The Orotta School of Medicine is also linked with the College of Health sciences. With the opening of the new colleges, access to tertiary education has increased to about 45 per cent. This is in contrast to the corresponding figure of 10 - 15 per cent before the opening of the colleges ( MoE, 2006).

Currently, those students who have completed high school and who have succeeded to enter tertiary institutions are mostly received at the EIT. They attend one of four freshman streams: a) Engineering and Technology, b) Pure and Applied Sciences, c) Business and Economics, and d) Arts, Humanities and Social Sciences. Rest of the, students are siphoned to similar streams offered by the other colleges.

The duration of the degree programs is five years and diploma programs three years in the College of Engineering and Technology, while the duration in other colleges for degree is four years and for diploma two years. The college of Engineering and Technology offers variety of courses in different disciplines. It is to be noted that during the academic year of 2006-07, the Department of Chemical Engineering is established with degree and diploma programs in chemical engineering. Diploma programs in town planning at the Department of Civil Engineering, and refrigeration and air conditioning in the Department of Mechanical Engineering are also expected to start in the future.

Table 5 & 6 reflects the growth of degree and diploma students in five colleges of Eritrea. It is apparent that these colleges produce 6,865 graduates and 3,755 diploma holders by 2015. This number may not be sufficient to the growing needs of the nation since it has been working on Free Trade and Mining. Hence, there is a need to expand further the tertiary educational institutions in the country.

### *Scope for aeronautical & space research*

The science and technology of space is a conglomeration of many sciences. In fact, in today's world, the science and technology of

space touches many aspects of our lives, from weather forecasting to mineral exploration to global communications, and the job of the astronaut represents just one very small part of this huge enterprise.

So there is a need to assess, the educational avenues that can take Eritreans to a career in science and technology. Obviously, the EIT has a discipline in aeronautical engineering and aircraft maintenance. Therefore, gradually there would be engineers and the management of EIT, with help of the government, need to form the foundation of space program. From satellite building to rocket design, the breadth of engineering is as wide as the science of space itself, involving electrical and mechanical disciplines and of course aeronautics--the study of flight. So, the most logical and common path to a career in space begins with a degree in mechanical, aeronautical or electrical engineering.

The study of physics can open many doors, particularly with specializations such as astronomy, meteorology and theoretical physics. Training and experience in jet aircraft piloting and maintenance--either commercial or military--is important for those who wish to some day handle an aircraft.

Biologists and medical professionals who have an interest in how the body responds to different atmospheric conditions also have a role to play, as do chemists and mathematicians. The unique chemicals of biological system, enzymes& DNA, become the wonder molecule for rest of the sciences. Chemical engineers and computer technocrats take queue from Enzymes & DNA. All scientific programs also draw on the expertise of a small number of social scientists, particularly behavioral scientists, who might study the psychological impact of journeying into space, or the group dynamics of small crews.

## 4. Challenges for educational development

Education in Eritrea has seen several challenges before attaining its present status. The Italians, the British and the Ethiopians have left their respective marks (Rena, 2005a). The extensive educational reforms currently taking place at all levels is aimed at structuring education to respond to the development needs of the country and to enable Eritrea to participate appropriately in this 21st century characterized by globalization and widespread knowledge based activities (MoE, 2006; Rena, 2007b). The Eritrean education system faces challenges that are fairly common to other education systems in Sub-Saharan Africa. These are limited access; low quality; doubtful relevance; inefficiencies; inadequate financial and non-financial resources; and poor delivery capacity. The Government's vision for addressing these pressing challenges is well-articulated across key policy documents (Government of Eritrea, 2003).

After the liberation of Eritrea, despite the scarcity of resources and the shortage of academic staff, the University of Asmara was re-established and resumed its academic work on October 10, 1991 with a few hundred students and five faculties to mention a few, faculty of natural science, social science. It had been struggled to accommodate many more courses including engineering, pharmacy, agriculture etc., and a greater population of students than it was originally designed to cater for. Despite the positive developments the university had been closed. If Eritrea wants to develop its own manpower, it needs to restart the University with the masters and other research programmes that are imperative in fostering the country's manpower and economic development.

Higher Education is very expensive. The cost of providing instruction, laboratories and libraries and other accoutrements of higher education has grown dramatically. Libraries and laboratories in particular now require major investments of resources (Altbach, 2007). The new communications technologies, as well as keeping abreast of the dramatic growth in knowledge, are also costly where Eritrea is trying to get loans from the World Bank and other international financial institutions. For example, for the establishment and development of EIT about USD 200 millions were sanctioned. Besides, it also seeks financial assistance from its development partners like UNDP, Norway, China and Dutch etc. Besides, all the higher learning institutions are depending on expatriate teachers particularly from India (majority), Pakistan (10), Russia (1) etc. It is to be noted that more than 50 per cent of the faculty are expatriates where the country needs to pay almost 8-10 times more than its own manpower. For a young and small nation – Eritrea bears heavy burden.

Over-crowding of classrooms is a very serious issue currently. It is observed that, the pupil-classroom ratio is 1: 70 in EIT. Although, these higher learning institutions function at double-shifting (morning and afternoon), but

still they do not accommodate many aspirants who seek higher education.

## 5. Conclusion

The Government of Eritrea developed educational policy on top priority of national development which demands the emergence of new class of trained youth blended with disciplined mind and skill instead of raw graduation. Despite the strenuous efforts made by the government in the development arena, the self-reliance in human resources has not yet been achieved. As part of the educational reforms in 2003, there are many colleges established but they need libraries and laboratories and other needed infrastructure. Although, the country is on the way to have its own teachers at the middle and secondary level, there is a long way to achieve its manpower needs at the tertiary level. Besides, it has been facing serious challenges such as: low quality; doubtful relevance; inefficiencies; inadequate financial and non-financial resources; and poor delivery capacity etc. Above all, there is a gender disparity in every level of education. To bring about economic development and social justice, we should ensure equal participation of women in all sectors. The parents, society and the government should remember education is the gift that could be offered to Eritrean children irrespective of their gender.

Education has been viewed as a strategic tool for development; therefore, the content of the educational system needs to be reviewed carefully. The education system in Eritrea must be geared up, not only at raising the general, social and scientific knowledge of the youth, but also must equip the youth/individual with skills that would enable one to lead a productive, sustainable life (Rena, 2006b).

The bottle-neck in the tertiary education system of Eritrea includes insufficient financial back-up, inadequate laboratory base, shy to adapt modern-teaching practices, high attrition rate, lack of industrial tie-ups and 'frog-in-well' approach. However, it is cherished with highly dedicated staff; best teaching manpower resource from overseas, the capability of gestating its own need-based curricula, well disciplined student community with learning quest and English as the medium of instruction. Eritrea must try to identify its strength and weakness in educational sector to realize its goal so that it would emerge as the epicenter for erudite youths who can put the Nation on fast-track in the coming decades. The performance of Eritrean youths in the world of sports is already known.

The existing scientists, technocrats and policy makers in Eritrea need to work hard to produce more skilled manpower in science and technology. In this line, the establishment of EIT is the major developmental breakthrough which is highly appreciable. Further strengthening the institute so as to diffuse the knowledge base into industrial needs can bring multi-faceted developments which can ultimately make Eritrea a self-reliant country. The vision and implementation style of Eritrea in manpower building impregnated with discipline and literacy skill can be example for other African countries to emulate.

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## End Notes:

1. The population of Eritrea includes about 350,000 Eritrean refugees from the Sudan. Every year hundreds of these refugees have been coming back to Eritrea.
2. Eritrea has nine ethnic groups. They are: Tigrigna, Tigre, Saho, Afar, Bilein, Hidareb, Kunama, Nara and Rashaida. All these ethnic groups have their own languages and cultures. There are six administrative regions: Anseba, Debub, Maekel, Gash Barka, Southern Red Sea, Northern Red Sea.
3. Eritrean youth have been in the forefront of all historically registered national engagements. For example, the youth had a prominent position and participation during the thirty years freedom struggle (1961-1991). They also led the first post-independent development plan aimed at transforming the country's economy. They, also, played a vital role during the border conflict from 1998-2000 in safeguarding the country and reconstructing the economy.
4. There is one area of continuity with Eritrean People's Liberation Front (EPLF)'s earlier practices; national service is required of all young people (men and women alike) who did not previously serve in EPLF. They receive six months of military training and are then deployed in rural areas for a year to help with road building, reforestation, and other projects. Some Muslim Eritreans have tried to argue for the exemption of Muslim women and some

families apparently tried to use marriage as an exemption for women, but the government has held fast to the requirement that all young citizens regardless of Contradictions of Liberation and Development in Eritrea gender, religion, or marital status must do their national service. The requirement of not only national service but military training for women is a significant legacy of EPLF's revolutionary culture. It also can be interpreted as emphasizing the supreme authority of the government over its female citizens over and above patriarchal domestic and religious authorities.

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***Table 1: Performance of students in Matriculation CGPA for both 2004 and 2005 batches***

| Matriculation CGPA | Number of students (2005 batch) | Number of students (2004 batch) students) | Percentage of students (2005Batch) | Percentage of students (2004 Batch) |
|---|---|---|---|---|
| 0-0.2 | 7 | 1273 | 0.31 | 25.63 |
| 0.2-0.4 | 224 | 397 | 9.85 | 7.98 |
| 0.4-0.6 | 217 | 374 | 9.54 | 7.54 |
| 0.6-0.8 | 199 | 363 | 8.75 | 7.32 |
| 0.8-1.0 | 192 | 408 | 8.45 | 8.22 |
| 1.0-1.2 | 189 | 363 | 8.31 | 7.32 |
| 1.2-1.4 | 175 | 376 | 7.69 | 7.57 |
| 1.0-1.6 | 176 | 375 | 7.70 | 7.55 |
| 1.6-1.8 | 146 | 344 | 6.42 | 6.92 |
| 1.8-2.0 | 152 | 248 | 6.68 | 4.98 |
| 2.0-2.2 | 135 | 197 | 5.93 | 3.96 |
| 2.2-2.4 | 94 | 124 | 4.14 | 2.50 |
| 2.4-2.6 | 77 | 67 | 3.38 | 1.35 |
| 2.6-2.8 | 74 | 26 | 3.26 | 0.51 |
| 2.8-3.0 | 46 | 20 | 2.02 | 0.39 |
| 3.0-3.2 | 44 | 8 | 1.93 | 0.16 |
| 3.2-3.4 | 40 | 1 | 1.76 | 0.02 |
| 3.4-3.6 | 43 | 1 | 1.91 | 0.02 |
| 3.6-3.8 | 29 | 2 | 1.27 | 0.04 |
| 3.8-4.0 | 16 | 1 | 0.70 | 0.02 |
| TOTAL | 2275 | 4968 | 100.00 | 100.00 |

*Sources: Ministry of Education and EIT Records (2006) and author's calculations*

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***Table: 2 Students CGPA groups based on EIT report (2005).***

| Matriculation CGPA | Number of students 2005 Batch | Percentage of students 2005 Batch |
|---|---|---|
| 0-0.2 | 117 | 5.14 |
| 0.2-0.4 | 64 | 2.81 |
| 0.4-0.6 | 98 | 4.31 |
| 0.60-.8 | 115 | 5.05 |
| 0.8-1.0 | 131 | 5.76 |
| 1.0-1.2 | 155 | 6.81 |
| 1.2-1.4 | 154 | 6.79 |
| 1.4-1.6 | 192 | 8.45 |
| 1.6-1.8 | 189 | 8.31 |
| 1.8-2.0 | 189 | 8.31 |
| 2.0-2.2 | 157 | 6.82 |
| 2.2-2.4 | 167 | 7.35 |
| 2.4-2.6 | 130 | 5.76 |
| 2.6-2.8 | 115 | 5.06 |
| 2.8-3.0 | 91 | 4.00 |
| 3.0-3.2 | 72 | 3.17 |
| 3.2-3.4 | 46 | 2.02 |
| 3.4-3.6 | 43 | 1.89 |
| 3.6-3.8 | 29 | 1.27 |
| 3.8-4.0 | 21 | 0.92 |
| TOTAL | 2275 | 100.00 |

*Sources: Ministry of Education and EIT Records (2006) and author's calculations*

**Table -3. Forecast of student enrollment at the 12th grade level and at tertiary institutions.**

| Academic year | Students enrolled in the 12th grade | Students accepted for tertiary education | Total number of students attending tertiary education |
|---|---|---|---|
| 2006/2007 | 21,700 | 5,400 | 16,700 |
| 2007/2008 | 22,600 | 8,700 | 21,400 |
| 2008/2009 | 24,900 | 9,000 | 25,300 |
| 2009/2010 | 27,900 | 10,000 | 28,800 |
| 2010/2011 | 31,400 | 11,200 | 32,400 |
| 2011/2012 | 35,600 | 12,600 | 36,400 |
| 2012/2013 | 40,400 | 14,200 | 41,100 |
| 2013/2014 | 45,200 | 16,200 | 46,400 |
| 2014/2015 | 49,900 | 18,100 | 52,400 |

*Source: Ministry of Education, 2006*

**Table 4 The Degree and Diploma Programmes in various colleges in Eritrea**

| Institution | Degree | Diploma |
|---|---|---|
| Eritrea Institute of Technology | 12 | 16 |
| College of Marine Science | 3 | 3 |
| College of Business and Economics | 6 | 4 |
| College of Agriculture | 5 | 6 |
| College of Health Sciences | 5 | 7 |
| College of Arts and Social Sciences | 3 | 2 |
| Total | 34 | 38 |
| University of Asmara* | 30 | 3 |

*Source: Rena, Ravinder ( 2007a), p.131.* Note: * currently not in operation.

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**Table 5 Growth rate for Degree Program in EIT [ten year projection]**

| Sl. No | Year | Engineering | Science | Education | Social Science | Total |
|---|---|---|---|---|---|---|
| 1 | 2005-06 | 280 | 280 | 56 | 168 | 784 |
| 2 | 2006-07 | 585 | 647 | 116 | 334 | 1,682 |
| 3 | 2007-08 | 888 | 948 | 176 | 499 | 2,511 |
| 4 | 2008-09 | 1,215 | 1,021 | 196 | 542 | 2,974 |
| 5 | 2009-10 | 1,486 | 1,320 | 255 | 761 | 3,822 |
| 6 | 2010-11 | 1,803 | 1,613 | 307 | 922 | 4,645 |
| 7 | 2011-12 | 2,093 | 1,966 | 359 | 1,081 | 5,499 |
| 8 | 2012-13 | 2,379 | 1,979 | 362 | 1,098 | 5,818 |
| 9 | 2013-14 | 2,725 | 2,267 | 414 | 1,255 | 6,661 |
| 10 | 2014-15 | 2,790 | 2,350 | 428 | 1,297 | 6,865 |

*Source: Author's Projections based on the existing enrolment trends in EIT*

**Table 6 Growth rate for Diploma Program in EIT [ten year projection]**

| Sl. No | Year | Engineering | Science | Education | Social Science | Total |
|---|---|---|---|---|---|---|
| 1 | 2005-06 | 405 | 45 | 489 | 90 | 1,029 |
| 2 | 2006-07 | 805 | 89 | 543 | 136 | 1,573 |
| 3 | 2007-08 | 851 | 113 | 552 | 149 | 1,665 |
| 4 | 2008-09 | 1,248 | 201 | 623 | 163 | 2,235 |
| 5 | 2009-10 | 1,255 | 209 | 620 | 176 | 2,260 |
| 6 | 2010-11 | 1,647 | 252 | 630 | 209 | 2,705 |
| 7 | 2011-12 | 1,685 | 260 | 695 | 223 | 2,863 |
| 8 | 2012-13 | 2,073 | 302 | 704 | 166 | 3,245 |
| 9 | 2013-14 | 2,108 | 309 | 713 | 180 | 3,310 |
| 10 | 2014-15 | 2,492 | 351 | 767 | 145 | 3,755 |

*Source: Author's Projections based on the existing enrolment trends in EIT*

## Editor's note

Eritrea is the 16 year old youngest country in African continent which recorded zero crime consistently since its birth. The war-ravaged soil is eking for academic excellence and cherished with talented & disciplined youths. Cared by the vast red sea coast, this country is the curious watch for the academicians all over the world as the educational reconstruction process is being undertaken as National Policy. There are ample opportunities for educational experts to suggest and experiment innovative practices in teaching-learning process at all levels (primary, secondary & tertiary). In many established universities, it is extremely hard to wean out the obsolete methods and practices due to the inherited bureaucratic set up and with the exhausted staff. Eritrea can be the best place to invent world class educational institutes and to inject a new paradigm in the educational system. The United Nations considers education as the collective responsibility of planetary states and the global education is the emerging paradigm. Hence, expert opinion and suggestions on the educational sector will be of extreme use so that any economically weak country can adapt "education for sustainable development" and to catch up with the rest of the world in the arena of global education.

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