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Transforming Education  
for Sustainable Futures



# Transforming Education for Sustainable Futures: Rwanda Background Paper

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## Acronyms

CNRU	National Commission for UNESCO
EDPRS	Economic Development and Poverty Reduction Strategies
ESSP	Education Sector Strategic Plan
HEC	Higher Education Council
MDGs	Millennium Development Goals
MINEDUC	Ministry of Education
NECDP	National Early Childhood Development Programme
NISR	National Institute of Statistics of Rwanda
NST	National Strategy for Transformation
PRSP	Poverty Reduction Strategy Paper
REB	Rwanda Education Board
RP	Rwanda Polytechnic
RPHC	Rwanda Population and Housing Census
SD	Sustainable Development
SDGs	Sustainable Development Goals
SGA	School General Assembly
SGAC	School General Assembly Committee
TESF	Transforming Education for Sustainable Futures
TVET	Technical and Vocational Education Training
UNDP	United Nations Development
UR	University of Rwanda
VNR	Voluntary National Review
WDA	Workforce Development Authority

## Introduction

Over the past two decades, poverty reduction has received global and national attention. From 2000 to 2015, poverty reduction programs were implemented through the framework of Millennium Development Goals (MDGs). From 2015, poverty reduction targets are elaborated within the framework of Sustainable Development Goals (SDGs).

Education is considered as a key element and a driver for the achievement of the SDGs. Education provides the knowledge, skills, attitudes and values necessary to address sustainable development challenges. Thus, quality education is a central pillar to social and economic development as it is through education that people attain knowledge, skills and attitudes to fully participate in development activities. Through education, individuals are able to acquire social and economic capital and lifestyles to ensure the wellbeing of the present and future generations. Unless education becomes 'sustainable education', as Stephen Sterling calls it (Sterling, 2001 quoted by Osman et al, 2014), there will be limited potential for societies to attain sustainable futures.

The TESP project adheres to social and environmental justice as guiding principles to achieving sustainable futures. For a working definition of this paper:

*Social and environmental justice can be understood as putting in place social arrangements that permit existing and future generations to participate equitably as peers in social life and in the construction of viable, fairer economies, that foreground the well-being of all, while also recognizing the integrity of other species and of natural systems (Tikly et al, 2020 p. 3)*

Tikly et al (2020) highlight that to achieve social and environmental justice requires radical transformations of education towards the kind of education that confronts and dismantles

*institutionalized obstacles and normalized systems and practices that prevent many people from participating on a par with others as full partners in social interaction and the construction of viable, fairer economies, and in addressing barriers that prevent the wellbeing and flourishing of all humans along with other species and natural systems (p. 3).*

Although Rwanda has made progress in reforming education, there are still critical gaps and challenges towards transforming education systems and practices to achieve social and environmental justice.

This background paper discusses the situation of education in Rwanda, and the possibility of education to enhance sustainable development in Rwanda. It addresses key opportunities and challenges for different levels and forms of education to achieve sustainable development and identifies gaps that should be addressed so that education becomes a catalyst for the achievement of sustainable development in Rwanda. Further, this paper will guide potential bidders for calls for proposals to understand the TESP Network's key research questions in the context of Rwanda as well as provide baseline synthesis of existing knowledge gaps with respect to the goals of the TESP Network Plus. This background paper will evoke

transformative approaches of addressing the learning crisis that impedes the potential of education to be a catalyst to sustainable development.

## Country General Profile: Rwanda

The Republic of Rwanda is a landlocked country situated in Eastern Africa, surrounded by the Democratic Republic of Congo (DRC), Burundi, Uganda and Tanzania. It covers an area of 26,338 Km<sup>2</sup> with very diverse landscape and is also known as the 'Land of a thousand hills'. Rwanda is situated at an altitude ranging between 1,000 m above sea level in the Eastern part to 4,500m of the Karisimbi- the country's highest mountain near the border with the Democratic Republic of the Congo. According to the NISR (2019), the population of Rwanda is estimated to be about 12 million people, of which, over 40% of the population is under the age of 30 (RPHC, 2012).

Any account of Rwanda's progress in the past years should be looked at in the context of the extent of the destruction and challenges brought by the bad governance leading to the 1994 Genocide against the Tutsi, the total destruction of the physical and human resource infrastructure and the national recovery efforts that followed. Rwanda has pursued its national Vision 2020 objectives through the implementation of medium-term successive strategies. In 2018, Rwanda started implementing the National Strategy for Transformation (NST1), which is conceived as the bridge between the finalization of the Vision 2020 and the beginning of the Vision 2050 - Rwanda's roadmap towards becoming a high-income country.



Rwanda has made progression in several MDG indicators such as life expectancy which increased from 49 to 67 years of age between 2000 and 2018. Maternal and child mortality has reduced mainly due to families' access to affordable universal healthcare. The country has also made significant gains in education, increasing the years of free formal education up to 12 and improving the enrolment rates for primary education. Whilst

rebuilding her human capital, Rwanda has also massively invested in her infrastructure to sustain the fast pace of social and economic development and leveraged extensively on endogenous policy solutions (2019 VNR report, 2019).

Through the approach of home-grown solutions, national policies are rooted in the Rwandan culture and history and have proven to be well suited to respond to development challenges in a locally adapted way. Despite the registered achievements, the country still faces challenges, including high poverty levels. Nutrition indicators are slow to improve, and particularly stunting levels remain high at 38% (DHS, 2015) hampering early childhood development and in turn affecting the learning outcomes and the overall potential for human capital of the current and future generations. The aforementioned challenges and many more have to be proactively addressed for Rwanda to achieve her ambitious regional and global development agendas such as the Africa Agenda 2063 and the SDGs into her national development agenda through Rwanda Vision 2050.

## Overview of the education system in Rwanda

The Rwandan education system is divided into two main dimensions: the formal education and the non-formal education. The formal education that includes pre-primary, primary, secondary and higher education, with TVET streams at both secondary and higher education levels. There are also non-formal education initiatives especially aimed at sensitising the communities on topical issues including peace, reconciliation, hygiene and other related and emerging issues for which communities need to be educated.

At National level, the Rwanda's Ministry of Education (MINEDUC) plans, regulates, and oversees the education sector. MINEDUC's mission is to *'transform Rwandan citizens into skilled human capital for the socioeconomic development of the country by ensuring equitable access to quality education, focusing on combating illiteracy, promotion of science and technology, critical thinking, and positive values'* (Rwanda ESSP, 2018/2023) MINEDUC works closely with semi – autonomous Government agencies and with other Government Ministries at central and decentralized levels. These agencies include Rwanda Education Board (REB), Workforce Development Authority (WDA), Rwanda Polytechnic (RP), Higher Education Council (HEC), University of Rwanda (UR) and the National Commission for UNESCO (CNRU).

The Education sector that is overseen by the Ministry of Education (MINEDUC) has the following eight main objectives: (1) Providing Rwandans with adequate skills at all levels of general education as well as technical and vocational skills; (2) Offering quality courses and education at all levels; (3) Promoting science, technology and research in order to equip many Rwandans with capacity to speed up national development; (4) Promoting the culture of peace, tolerance, justice, respect for human rights, solidarity, democracy and that of avoiding any form of discrimination or favouritism; (5) Providing each Rwandan with an integrated education based on ethical values, science and social welfare and directed towards building a nation to

ensure its sustainable development; (6) Instilling into Rwandans the love of a job well done, the value of hard work, punctuality and promotion of competence; (7) Training the Rwandan to have freedom of thought, be innovative, have abilities to acquire and be analytical towards other people's opinions and to communicate his or her own ideas, to be patriotic and encourage him or her to be updated on the situation prevailing elsewhere; (8) Eliminating all grounds and obstacles that hinder the development of girls' and women's education as well as of any other groups that need special attention (Rwanda ESSP, 2018/2023).

At the local level, the delivery of education services is under the responsibility of District Administrations under the authority of the Ministry of Local Government. The law governing public administration in Rwanda determines four entities (levels) of public administration at local level: "Intara" (Province); "Akarere" (District); "Umurenge" (Sector), "Akagari" (Cell) and "Umudugudu" (Village). The province and the cell do not dispose a budget allocated to education or permanent educational staff. District Education Services (Akarere) are under the District Education Directorate Headed by the District Education Director while the Sector Education Services (Umurenge) come under the office of a Sector education office headed by a sector Education Inspector.

The District Education Directorate is in charge of general management of educational activities in the district: planning, budgeting, implementation and monitoring of educational actions; supervision of pre-primary, primary and secondary education; planning and preparation of the school map in collaboration with the construction unit at the central level; placement of administrative and teaching staff; preparation of teachers' salaries, and; implementation of policies developed by the Ministry of Education. The Sector Education office is in charge of regular management and supervision of pre-primary and primary education.

At school level, two entities collaborate in leadership and management of the school: the school administration and the community (through the School General Assembly). The school administration is in charge of day to day management of school activities; preparation of a school action plan and preparation of the annual budget, with the participation of teachers, students, parents and school community (at pre-primary, primary and secondary level); presentation of the strategic plan and the annual budget to the School General Assembly for its approval, and; supervision of expenditure (especially funds allocated by the State) through the School General Assembly Committee. The school General assembly is responsible of audit of school accounts and joint approval of school expenditures, and regular management of schools in partnership with school administrators.

Despite its remarkable achievements, the education sector in Rwanda has been hampered by inadequate planning capacities at the District, Sector and School levels and poor cohesion between central and district-level stakeholders. Unemployment levels among graduates stand at 14% among University graduates (HEC, 2014). There are also growing concerns that education, in as much it has contributed to development, has not sufficiently

empowered individuals to adopt the right behaviour and dispositions to sustain the incredible social capital and critical thinking that is requisite for fostering a sustainable future. There has been evidence that the colonial origins of Rwanda's formal education systems has affected the potential for education to be a tool for liberation. The power of the education to strengthen individual and community ties remains a public concern, especially in a country that has recently experienced divisive ideologies.

Despite the aforementioned challenges, Rwanda believes that education can be a catalyst to achieving the country's development agenda as well as the regional and the global development agenda. As such Rwanda has embarked on domesticating SDGs targets into the national development framework that focus on ensuring provision of quality education provision, gender equality, inclusive education growth and climate risk management among others. However, there are also enormous challenges that will have to be addressed for education to be a real catalyst to social economic and environmental transformation.



## Entry points for domestication of SDG4 in Rwanda

The integration of the SDGs into the national development framework was guided by the Government of Rwanda's domestication roadmap approved in December 2015. The process was consultative and informed by lessons learnt from MDGs, an initial SDGs gap and data readiness analysis and the review of the Economic Development and Poverty Reduction Strategy (EDPRS 2) as well as 14 sector strategic plans. The gap analysis informed a detailed SDGs domestication plan and prioritization of new aspects brought by the adoption of the agenda 2030.

The three SDGs dimensions, namely: Economic, Social and Environmental are comprehensively integrated in the NST1 pillars: "Economic Transformation, Social Transformation and Transformational Governance". The strategy emphasizes the

transformation principle across all the three pillars and resonates with the ambitious and integrated nature of the SDGs and with the ultimate focus towards achieving sustainable futures. The SDGs are in direct alignment with the African Union's Agenda 2063, the continent's long-term transformational blueprint for the Pan-African region. Agenda 2063 calls for all segments of African society to work together to build a prosperous and united Africa.

At the National level, the domestication process is overseen by the National Institute of Statistics of Rwanda and the Ministry of Finance and Economic Planning. For implementation and ease of monitoring, SDGs are mainstreamed into national and centralized development frameworks. Rwanda SDG Domestication and Monitoring:

1. Domestication of SDG in general (NISR and MINECOFIN)
2. ESSP and NST1 developed reference to SDG, CESA, EAC vision 2050, AU agenda 2063
3. Review of data collection tools to include all possible variables (Main data source: EMIS, EICV, DHS)
4. Data disaggregation at the smallest possible level (e.g: education for refugees and for correctional services)

In addition to the SDGs, NST1 also embraces the far-sighted, long-term continental and regional commitments. That is, the NST1 harmonizes the national development priorities and the African Union Agenda 2063 and its First 10-Year Implementation Plan 2014-2023, which is dedicated to the building of an integrated, prosperous and peaceful Africa, driven by its own citizens and representing a dynamic force in the international arena (Rwanda Voluntary National Review VNR Report, 2019).

A list of Rwanda SDG quality Indicators including facts and figures have been reported in the Rwanda Voluntary National Review (VNR) Report, 2019. Specifically, SDG4 quality indicators are indicated on Pages 85-90.

Rwanda has integrated the Africa Agenda 2063 and the SDGs into its national development agenda through the draft Vision 2050, National Strategy for Transformation (NST1, 2017-2024) and related strategies at different levels. The preparation of the VNR report followed a consultative approach and provides information on Rwanda's progress, challenges and lessons learned focusing on Goals 4, 8, 10, 13, 16 & 17.

## Prospects and Challenges towards Transforming Education for Sustainable Futures (TESF) with specific reference to SDGs 4, 8, 10, 11 and 13

### SDG 4: Ensure Inclusive and Equitable Quality Education and Promote Lifelong Public Learning Opportunities for All

The Education Sector Strategic Plan (ESSP) is hinged on: (i) scaling up pre-primary enrolment (ii) improving learning outcomes (iii) improving relevance of curricula (v) promoting science, technology

and innovation and (vi) access for all including those with special needs. Progress on nutrition has been made especially regarding wasting and underweight, however stunting remains a challenge despite falling from 51% (2005) to 38% (2015). The school feeding policy that aims at providing meals to students at school is also aimed at improving the school environment where students nutritional needs are intergrated into school programs, helping some of the vulnerable students also access meals at a low and shared cost.



Rwanda has achieved significant success in providing universal access to primary education, with a net enrolment rate (NER) of 98.30 percent (MINEDUC, 2018). However, pre-primary enrolment is still low. In 2017/18, enrolment stood at 28.3 percent (Indicator 4.2.2). On the other hand, with regard to assessing the number of children under 5 years who are on track developmentally (Indicator 4.2.1), the 2014/15 DHS reports that six out of 10 Rwandan children under the age 36-59 months (63 percent) are set to be on track developmentally (i.e. on track in at least three of the four domains).

In terms of closing the gender gap in education (Indicator 4.5.1), boys and girls show gender parity in both pre-primary and primary education (respectively, gender parity index (GPI) of 1.02 and GPI of 0.98) (MINEDUC, 2018).

The national assessment of learning achievements (Indicator 4.1.1) in Rwandan schools for 2014 showed that 45.3 percent of P2 students achieved grade-level competency in literacy and 32.9 percent in numeracy. There was no significant difference at P5, with 44.1 percent achieving literacy and 38.3 percent competent in numeracy. Furthermore, school completion and learning quality are low, evidenced by a learning test score of 358 on a scale where minimum attainment represents 300 and an average completion rate of only 3.8 years of school against a global average of 9 years (2018 WB, HCI).

According to the World Bank's Human Capital Index (HCI) report (2018), Rwanda's HCI was 0.37 and ranked 142 among 152 countries in 2018. The HCI is designed to measure the human capital of the next generation and Rwanda's HCI being as low as 0.37, out of 1.0 which is the upper bound, provides points of concern. Although

there have been questions regarding the methodology used in the ranking, the low ranking should be cause for renewed focus on how best education can be transformed to gradually improve Rwanda's human resource potential and lead to sustainable development.

During the period of 2013 to 2018, a number of policies aimed at promoting inclusive and equitable education were developed (GPE, 2019). For example, the special needs education policy and its strategic plan was approved in 2017. The GPE report, 2019 also reports that from 2016-2017, 3,398 teachers in basic education received in-service training in special needs education. Although this number represents a small percentage (3.81 %) of total teacher population, it marks a step in the right direction.

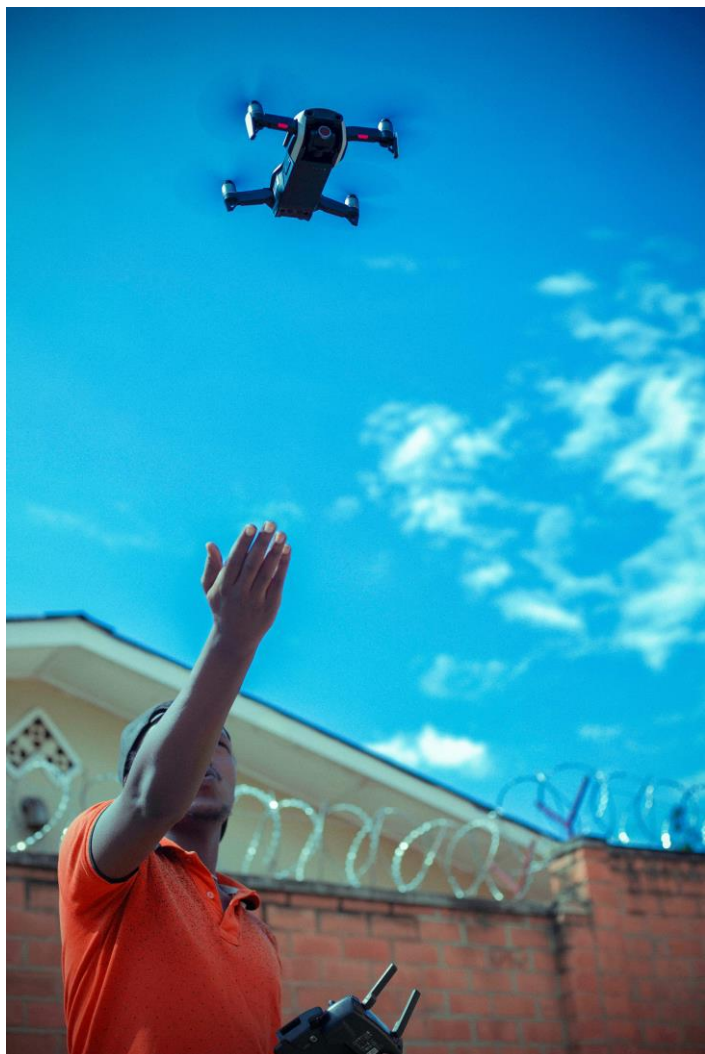
The Government has put in place a multi-sectoral programme and strategy, the National Early Childhood Development Programme (NECDP) and promotion of basic education. To achieve the above objective, the Government of Rwanda with the support from World Bank has designed a Quality Basic Education for Human Capital Development Project. The Project objective is to improve the students learning and progression in basic education. The Transforming Education for Sustainable Futures (TESF) Network Plus will undoubtedly address some of the aforementioned challenges through innovative research.

**Inclusive Economic Growth:** Economic growth has reduced both income and multidimensional poverty. With a share of 43.5% of the population in the labor force, youth is regarded as a key driver of growth, requiring the economy to accelerate job creation. NST1 is targeting to create 1.5 million decent and productive jobs by 2024 supported by the National Employment Programme (NEP). There are some initiatives that have been put in place to support youth entrepreneurship and job creation, including the establishment of the National Employment Program (NEP) focusing on strengthening youth entrepreneurship, access to finance, skills development and access to technology. Further, Private Sector Federation (PSF) has established a special chamber for youth – the Chamber of Young Entrepreneurs to support and facilitate youth entrepreneurship in doing business. Furthermore, in the recent Government restructuring, a standalone Ministry of Youth was created. However, despite the aforementioned efforts, the youth still face employment, including graduates whose education programs are not well aligned towards the attainment of skills required at the labor market.

On the other hand, in an effort to increase women's employability skills, Rwanda has continuously strengthened demand driven Technical and Vocational Education Training (TVET) programs, increasing female enrolment from 41.8% in 2015 to 43.8% in 2018. Besides, measures have also been put in place to promote jobs creation for women and youth, including (i) the establishment of Business Development Fund (BDF) with priority to women and youth (ii) the adoption of a strategy for women and youth access to finance (2016-2020) and (iii) empowering women in informal cross-border trade by building their capacities and helping them access finance and markets.

It is also important that when talking about education for sustainable futures, the issue of employment creation be held in consideration.

Given the vision of TESF, it is important to look employment from a wider perspective 'beyond formal and the public to include vocational learning in formal and informal workplaces; in subsistence, communal and commercial farming; in public, private and third sector vocational providers; and through self-initiated vocational learning by individuals or groups,' (McGrath, 2020 p. 2). Therefore, all forms of education should critically explored and transformed to ensure youth employment in all sectors and avenues.



McGrath (2020) makes critical points concerning transforming education systems for sustainable futures by emphasizing that we should be able to think about the following key questions:

- How do we help the youth already in the informal sector or entering it to access the skills they need to enjoy sustainable livelihoods?
- How can this been done in ways that improve inclusion?
- How do we mitigate the longstanding challenges to occupational health and safety present in much work such as mining and other similar works?
- What can education and training do to promote work that is decent and safe?
- How can we best support agricultural skills development that promotes sustainability, that is grounded in local

knowledge and that is inclusive of all scales of agricultural production?

- How do we ensure that the youth who are mostly in basic agriculture increase value addition of their agricultural?
- How do we educate the youth?

Regarding SDG 4 sub-targets that include 4.7, it is stated that:

*By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and nonviolence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development.*

The introduction of the Competence – Based Curriculum (CBC) in 2016 represents a shift away from the traditional knowledge-based approach in order to better adapt Rwandan students to the national vision of a knowledge economy. This curriculum applies the learner-centered approach and demands major changes in teaching methodology and the use of a wider range of assessment techniques, including mainly a special focus to ongoing continuous assessment. For CBC implementation to be successful there should be continuous teacher trainings, effective provision of material support and guidance to schools.

In 2015, Rwanda revised its curriculum at all education levels to key aspects contained in SDG 4. For example, there has been renewed emphasis on Technical and Vocational Education Training to increase employment opportunities, especially for the youth. CBC Curriculum has also emphasised themes related to peace and environmental education and which are critical to the progress towards SDGs.

However, in the VVOB report (2018) on successes and challenges on implementing CBC, there are a number of challenges faced by school mentors in supporting teachers with skills to teach according to the CBC framework. These challenges include: Lack of Quality Time for Mentoring Programme (lack of School Based Mentors's quality time for mentoring activities), Language Barrier (most teachers struggle with teaching in English, which is the official language of instruction) and Resistance to Change (some teachers demonstrated resistance to change towards the implementation of CBC). All in all, there is a need of more policy research on the curriculum delivery (knowing the relevant curriculum), education system connectedness across all levels and sustainable mechanism that engage community and parents in education. There is also urgent need research authentic curriculum assessment options that goes beyond student scores in national exam.

### **Progress towards Goal 4: Interventions and opportunities for accelerating progress**

In order to ensure inclusive and equitable quality of education and learning, the Rwanda Education Sector Strategic Plan (ESSP 2018-2024) is centered on:

- Increasing access to education programs, especially pre-primary enrolment;
- Enhancing quality learning outcomes;
- Enhancing use of ICT to transform teaching and learning;
- Equitable opportunities for all Rwandan children and young people;
- Strengthening STEM across all levels of education;
- Strengthened modern school infrastructure and facilities across all levels of education
- Strengthening Continuing Professional Development (CPD) and management of teachers across all levels of education;
- More innovative and responsive research and development in relation to community challenges and
- Strengthened governance and accountability across all levels of education in Rwanda.

The Rwanda SDG 4 Quality Indicators are based on the aforementioned components. Furthermore, as quoted in Rwanda Voluntary National Review (VNR, 2019) report, the Education Sector Strategic Plan (ESSP 2018/19 to 2023/24) was elaborated guided by global, continental, regional and national planning commitments, for instance the SDGs. The central policy proposition for this ESSP is to ensure that Rwandan citizens have sufficient and appropriate competencies (skills, knowledge and attitudes) to drive the continued socio-economic development of the country. Key sector priorities include: Enhanced quality of learning outcomes, equitable opportunities for all Rwandans and more innovative and responsive research and development. Despite the aforementioned progress, the education sector in Rwanda, just like in most other countries, has been affected by COVID-19.

## COVID-19 Impacts

In early 2020, as the COVID-19 pandemic spread across the globe, most countries announced the temporary closure of schools. Since the outbreak of the coronavirus pandemic, Rwanda has experienced serious threats in all sectors. Rwanda's education sector has been seriously affected as a result of disruptions to the continuity of teaching and learning activities. At the onset of the pandemic, all schools were closed on March 22<sup>nd</sup> 2020 in response to the ban on public gatherings, and in an effort to prevent further spread of coronavirus. Whereas the Ministry of Education started re-opening schools beginning in November 2020, there are still concerns about issues of health, safety and remediation.

Amidst the aforementioned disruptions, the government of Rwanda initiated a range of measures to allow continuity of learning. Such measures include the use of e-learning platforms in teaching and learning; the use of Radio and Television in teaching and learning but such alternatives are not for the poor and vulnerable families who cannot afford the means. As such, the global pandemic has far-reaching consequences that have jeopardized the hard-won gains made in terms of access and accessibility to school and in improving the quality of education.



## Teachers management and professional development

With a fertility rate of 5.4 births per woman and a population growth rate of 2.9 percent each year (NISR 2012), the number of young people to be enrolled in Rwandan education system is expected to tremendously increase by 2024 (MINEDUC, 2018). There is an urgent need to increase the enrollment capacity of schools and to improve the quality of education. While Rwanda's education enrolment figures have been increasing since the introduction of Education for All and other related programs (school feeding, program, capitation grant program, etc.), and much effort has been oriented in improving access and accessibility to education, quality of learning still facing some challenges (MINEDUC, 2018). Some graduate lacking the necessary knowledge and skills to advance to further education or the workforce.

One of the strategies to offset the aforementioned learning deficits is to invest in teacher training, management and capacity building. The Rwanda ESSP 2018-2024 acknowledges the importance of teachers as key drivers to quality of education improvement. It argues that *"Insufficient teacher competencies in subject content, pedagogy and languages of instruction (English) threaten to jeopardize curriculum delivery and inclusion, and ultimately negatively impact on student learning outcomes"* (MINEDUC, 2018 p. 14). As such, Government of Rwanda has committed to attract, motivate, develop, and retain teachers in an effort to achieve quality learning outcomes but the concept of quality has also been contested as it is perceived differently by different people at different times. In fact, one of the nine strategic priorities of the Education Sector Strategic plan (ESSP 2018-2024) focusses *"Strengthening CPD and management of teachers across all levels of education in Rwanda"* (p. 17). The objective is to ensure that all schoolteachers, TVET instructors and higher education lecturers have appropriate levels of skills and



competencies to deliver the curriculum through improved management, welfare and deployment of teachers in order to attract and retain high quality teachers in the teaching profession (MINEDUC, 2018 p. 17).

## Challenges

Despite the efforts made to attract, motivate, develop, and retain teachers, challenges still remain. Zeitlin and Bower (2019) highlighted four challenges related to teacher management and development in Rwanda:

- (i) difficult assessment of teachers' formal qualification and effectiveness;
- (ii) variation in teachers' knowledge of core curriculum which creates a variation in teachers' effectiveness at improving students' performance in literacy and STEM;
- (iii) a substantial turnover observed in the teaching carrier, resulting in an excess shortage of experienced teachers;
- (iv) frequent adjustments of teachers staffing plans due to delay in replacement of those who turnover or those who get transferred to other schools.

In addition, other challenges were identified such as: difficult to enroll the high performing students in Teacher Training Center or in the school of Education as the teaching profession is not generally perceived as a financially rewarding; insufficient continuous development programs; overcrowded classrooms (Imaniriho, 2016). Although a specific department in charge of teacher development, management was created, the related policy and accompanying strategic plan are still on draft level (MINEDUC, 2018 p. 4). There is an issue of lack of career guidance professionals to guide students for their professional choices while integrating the pre-service teacher development program offered at Teacher Training Centers or at University level.

Progress towards achieving SDGs and achieving sustainable futures in general will require that there is focused and thorough research on issues related to quality, motivation and how teachers perceive themselves as active agents in attaining suitable futures.

## Challenges to SDG 4

Some of the key challenges in education stem from the lack of sufficient skilled and qualified teachers at all levels of basic education, teachers having a poor command of the English language which is the compulsory language of instruction from primary four onwards, and the limited technical and financial capacity to disseminate and implement the new competency-based curriculum effectively. Students often have low attention spans due to inadequate food security and nutritional status, as well as inadequate WASH practices resulting in decreased attendance rates due to illness. Most schools lack basic infrastructure such as classroom blocks resulting in high pupil to teacher ratios. At around 60 pupils per teacher, the ratio is the highest in the region. In addition, while district authorities have been given greater levels of accountability and decision-making in the management of schools, most of these entities lack the

required expertise and capacity to handle these new and evolving responsibilities to ensure the required quality education is delivered (UNDP, 2017).

Although higher education higher education is mainly determined and shaped by the needs and demands of the employment system, employers are concerned about the apparent lack of substantial innovation and creativity in the workplace (HEC, 2014). There appears to be lack of sufficient formalized synergies and partnership between public and private employment agencies and high learning institutions. As a result, industrial training is rated weak and this affects students' acquisition practical and job-relevant skills hence reducing chances for employability.

## Key Themes for Research

How can the education systems change if they are to address the current challenges that are a barrier to achieving sustainable features?

- What changes does Rwanda need to integrate within her education systems to stimulate connectedness and smooth transition across all education levels?
- Which innovative and context-appropriate solutions implemented to provide education remotely, leveraging hi-tech, low-tech and no-tech approaches?
- Which innovative and context-appropriate solutions implemented to ensure equity and universal access to education within the C-19 context and other situations of vulnerabilities?
- What changes need to be integrated in the education system to ensure that curriculum design and development responds to the contextual learning needs and theoretical concept that are alien to the contextual experiences of the learners and communities?
- Which mechanisms need to be implemented to facilitate the return of students to school when they reopen (post C-19) to avoid an upsurge in dropout rates?
- How can inequalities to education access be overcome to offer educational opportunities?
- Which strategies can be implemented in terms of the back-to-school campaigns to ensure that all students return to school with consideration to sex-disaggregation of data to track any gaps in enrolment plus those with disabilities?
- Which strategies and mechanisms can be implemented for assessing and addressing issues such as the increased risk of early marriages and teenage unplanned pregnancies among students?
- What incentives for teachers can ensure teacher motivation retention and professional development?
- What are the sustainable mechanisms to empower and engage parents and communities to proactively play active roles in the education of children?
- How can research be conducted on sustainable preconditions that enhance pupils' learning (the physical environment, health, water and sanitation, feeding, child protection, psychosocial environment)?

- How do education systems need to change if they are to foster harmony and interdisciplinarity?
- What are the pathways to sustainable futures and how can education be a catalyst to these pathways?

## SDG 13: Climate Action

Rwanda has participated and subscribed to resolutions and agreements of the United Nations Conference on Environment and Development (UNCED) held at Rio de Janeiro from 3rd to 14th June, 1992 in Brazil, referred as Earth Summit. In response to this commitment and as part of the contribution towards sustainable national development, Rwanda Environment Management Authority (REMA) is taking the lead in the development of the Environmental Education for Sustainable Development (EESD) Strategy for Rwanda. The document has been developed through a consultative process involving a wide range of key stakeholders to ensure an inclusive and high-level national participation in the implementation of the strategy. EESD provides an innovative model that encompasses public awareness, education and training to enhance the understanding of sustainable development.

In order to implement the EESD in Rwanda, a number of key priority programs were identified:

- (1) Promotional Programme on EESD;
- (2) EESD Leadership Programme;
- (3) EESD in Primary and Secondary Schools;
- (4) Training program for the Media on EESD Reporting;
- (5) Mainstreaming EESD into Technical and Higher Education program.

In that framework, ten strategies were elaborated, in order to effectively and efficiently achieve the identified key priorities. Those strategies include:

- (a) advocacy;
- (b) vision building and promotion of education for sustainable development;
- (c) capacity building, professional development and training;
- (d) curriculum development and orientation;
- (e) networking and partnerships;
- (f) research and innovation;
- (g) public awareness raising; information dissemination;
- (h) information and communication technologies;
- (i) establish Regional Centres of Expertise;
- (j) monitoring and evaluation.

In Rwanda, environment and climate change are mainstreamed in the key national strategic documents such as the Vision 2050 which aims to enhance higher living standards and sustainable livelihoods among Rwandans. The Seven Years Government Programme (2017-2024) sets the priority for a Green Economy approach in its Economic Transformation Pillar that promotes 'Sustainable Management of

Natural Resources and Environment to Transition Rwanda towards a Green Economy' (GoR, 2017a). The National Environment and Climate Change Policy targets seven objectives namely:

- (1) Greening economic transformation
- (2) Enhancing functional natural ecosystems and managing biosafety
- (3) Strengthening meteorological and early warning services
- (4) Promoting climate change adaptation, mitigation and response
- (5) Improving environmental well-being for Rwandans
- (6) Strengthening environment and climate change governance
- (7) Promoting green foreign and domestic direct investment and other capital inflows.

As stated in the United Nations Development Assistance Plan (UNDAP, 2018 to 2023) Rwanda's commitments in the National Environment and Climate Change Policy were reflected by the increase in the Government's expenditure on environment and climate change from 0.4 per cent to 2.5 per cent of the national budgets between 2004 and 2017.



All these objectives attest to the GoR's Commitment to address and mitigate climate change issue. However, as Rwanda aspires to become a green, climate resilient and low carbon economy by 2050, the country still faces serious environment and climate change issue including but not limited to the following:

**Climate change and extreme weather events:** Rwanda has one of the world's lowest per capita emissions of greenhouse gases (GoR, Climate Change and Environment Policy, 2019). However, Rwanda is also prone to highly vulnerability due to rainfall variability. The country's average temperature has increased by 1.4°C since 1970, higher than the global average, and by the 2050s, it is likely to rise by up to 2.5°C from the 1970 average (GoR, 2011). This has had severe consequences to lives, including deaths.

During recent years, the frequency and severity of natural disasters, particularly floods, droughts and landslides have significantly increased, resulting in loss of lives, crop and livestock losses, and food insecurity. Over the past two decades, floods and droughts have affected over two million people (MIDIMAR, 2015). Research estimated total economic loss due to flooding in Rwanda to be about 1.4% of the overall Gross Domestic Product (GDP) of 2011/2012 fiscal year (REMA, 2013).

According to Rwanda Climate and Environment Policy (2019), such challenges include lack of low-carbon materials for housing and green infrastructure development, inadequate waste treatment for both solid and liquid waste as well as insufficient treatment plants for industrial effluents and storm-water drainage systems.

Gaps exist in technical skills in the environment and natural resources sector monitoring. There is limited coordination of initiatives and mainstreaming across sectors, as well as weak engagement of the private sector, civil society.

In addition to the aforementioned challenges, the following are some of the key challenges associated to urbanisation:

**Sustainability of urbanization and rural settlements:** Rwanda's urban areas are growing rapidly, and the NST1 target is to accelerate urbanization from 17.3% (2013/14) to 35% by 2024 (GoR, 2017). Such unprecedented growth requires resources and data driven research on urbanization and green growth approaches so that emerging cities are well planned and inclusive in all forms to mitigate some key environment and climate related challenges.

**Air Pollution:** Poor air quality is considered the world's 'largest single environmental health risk. In Rwanda, 2,227 deaths were attributed to ambient air pollution in 2012 (REMA, 2018). This has also affected long-term health conditions in the same period where acute respiratory infections were registered as the top cause of morbidity in health centres and the largest cause of death of children under the age of five in Rwanda (REMA, 2018).

**Water Pollution:** Rwanda's water resources are generally still of relatively good quality, with pH values between 6 and 7.5 (REMA, 2015). However, increasing pollution from agro-inputs, including ammonia, nitrate, phosphate and pesticide residues (through leaching and erosion) is affecting groundwater locally, and the ability of ecosystems to naturally purify water is a concern. There are also localised problems from high sediment loads, toxic and acidifying materials, including heavy metals, from mining, and untreated domestic sources that cause microbiological pollution and threaten human and ecosystem health.

## SDG 11: Sustainable Cities and Communities

Urbanisation remains one of the critical challenges in Rwanda, especially considering the rapid expansion of cities and the complex socio-economic realities faced by city residents. Some of the challenges in urbanisation directly relate to the extent to which communities feel safe in terms of housing, career opportunities and psychological safety. Therefore, making cities sustainable requires the creation of career opportunities, planning for safe and affordable housing options, investing in affordable and energy friendly public transportation, creating clean and inclusive public places and other amenities that foster healthy communities. There is need for research to measure the extent to which urbanisation has incorporated the aforementioned aspects to cater for community safety and wellbeing.

## Potential questions (Themes)

- How is climate change education articulated at the policy level to be localized for community understanding and intake?
- What are the opportunities and challenges for the integration of Environmental Education for Sustainable Development in the Rwandan Education system at all levels?
- How can the concept of greening be owned by schools at all levels, of education, (pre-school, primary, secondary and tertiary)?
- How can issues of urban studies or urban health studies be systematically be integrated into education curricula?
- How can formal education be aligned to the context by conducting outreach to increase awareness of the communities about how to respond to climate and environmental shocks?
- How can formal education be mixed with action research to have students engaged in problem –based learning?
- What strategies can be used through curriculum review to integrate aspects that will help to build sustainable cities and communities?

## SDG 8: Promote Sustained, Inclusive and Sustainable Economic Growth, Full and Productive Employment and Decent Work for All

Youth unemployment in Rwanda remains high at 19.3 percent as at April 2019 (down from 21.5 percent in 2016). This corroborates with the United Nations Development Assistance Plan (UNDAP) 2018-2023 for Rwanda which noted that the unemployment rate among young people aged 16 to 30 years of age is high, at 21 per cent. Low levels of labour productivity across all sectors has continued to constrain the country from achieving its full potential. Manufacturing continues to play a minimal role in Rwanda's economy compared to elsewhere in sub-Saharan Africa. The emerging pattern of growth that is largely driven by the service sector needs to be rebalanced through rapid industrialization aimed at creating decent and productive jobs for the youthful population.

Overall labour force participation decreased from 54 percent in 2017 to 52.5 percent as at April 2019, with participation among males decreasing from 62.7 percent to 61.9 percent and females from 46.4 percent to 44.2 percent. Labour productivity (output per worker) is still low in Rwanda. While resources have moved increasingly from agriculture to other sectors, labour productivity either fell or rose only slightly across most sectors between 2001 and 2016;

The country still faces human capital deficits, education systems that are not adequately adjusted to the needs of the job market, lack of employability skills and the need to improve labor productivity and competitiveness. The table below summaries ideas about Challenges opportunities pertaining to the achievement of SDG 4.

### Challenges and Opportunities associated to SDG 8: Education for Decent Work, Sustainable Livelihoods and Just Transitions

#### Challenges:

- Persistent high rates of youth employment and informality; affecting disproportionately affects youth. Youth unemployment rate rising from 18.20% in second quarter to 20.60% in third quarter 2019 (Rwanda Labor Force Survey, 2019). Limited capacity of the economy to absorb the educated youth.
- Limited income breeds joblessness.
- Education systems not adequately adjusted to the needs of the job market. Lack of employability skills and the need to improve labor productivity and competitiveness.
- Quality education-implementation of curriculum, learning environment and preparedness of teachers is affected by many challenges- infrastructure and human resource
- Limited involvement of parents and wider community in education
- Disconnectedness between the different levels of education
- Overcrowded classroom (high pupil to teacher ratio) and, thus, low quality learning

#### Opportunities:

- Political will/support for access to education
- Existence of a competence based curriculum
- Rwanda is a growing economy with funding opportunities

*Source: TESF engagement workshop conducted in March 2020- Nobleza Hotel, Rwanda*

## SDGs 5 and 10: Gender Equality and Reduced Inequalities

With regard to the legal framework (Indicator 5.1.1), the Constitution of the Republic of Rwanda enshrines the principles of gender equality and women's rights and provides for a minimum of 30 percent of women in all decision-making bodies. Women, youth and people with disabilities are represented at all levels of decision making with highest women representation in Parliament (61.3%) and equal number of women and men in Cabinet. The extreme poor are supported through social protection programmes. Rwanda is also piloting the comprehensive refugees' response framework for their socio-economic inclusion. However, there is need to conduct research and mobilize resources such that vulnerable groups or traditionally marginalized population are practically empowered to participate in development activities. Despite remarkable progress as described above, a number of challenges still impede full attainment of gender equality and women's empowerment in Rwanda. They include:

**Poverty among women:** Female-headed households are more likely to be poor than their male-headed counterparts (respectively, 39.5 percent and 37.6 percent) and adult women are more likely to be living in poverty than adult men (34.8 percent and 31.6 percent).

**Limited control over productive resources:** More women in Rwanda need access to off-farm employment opportunities and increased control over productive resources if they are to participate fully in national development. Women in both rural and urban areas are the most vulnerable groups due to low education attainment,

lack of skills, lack of expertise and unequal access to shared opportunities.

**Gender-based violence:** Additional efforts are required to ensure that women are freed from negative social norms and the culture of silence about GBV, affecting timely reporting, prevention and effective legal assistance.

**Indigeneity:** In Rwanda we have the community of Historically Marginalized groups and their social and economic situation is worsening. More often, these are categories of people within the Rwandan population who did not have access to factors of production like land. For example, although laws have been changed and women can now inherit land, the historical exclusion of women in inheriting land presents a disadvantage to them. Other categories include indigenous populations.

Despite Rwanda's poverty reductions and human development indicator achievements, much remains to be done to reduce income inequality and address both regional and gender disparities. Rwanda has a very comprehensive policy framework to address inequalities, but the scale of implementation of these policies requires major resources.

## Challenges in transforming education for sustainable development

Although some initiatives have been accomplished to mainstream quality inclusive education at different forms and levels of education to achieve in the National development agenda, it is important to

note that there are challenges in transforming education in to achieve SDG 4 targets. Some of the challenges include the following among others:

- Existence of gender equality and equity issues, especially with TVET where female students still find it difficult to enrol in traditionally male-dominated trades like Engineering, Mechanics, etc.
- Prevailing Gender disparities in Higher Learning Institutions with regard to enrolment and completion rates.
- An education system (curriculum) that doesn't align well to the skill sets required in the labour market and this unemployment – Low returns on investment in education.
- Existing policy – practice gaps with regard to traditionally marginalised groups such as the people living with disabilities (PWDs) and refugee education.
- The implementation of Competence Based Curriculum (CBC) teaching and assessment framework doesn't fully integrate themes of sustainable development like the development of positive lifestyles, human rights, gender equality, promotion of the culture of peace and non-violence, etc.
- Lack of clarity on the soft indicators of quality education, thus, the need to develop teacher capacity, especially on how to create and nurture inclusive and effective learning environments.
- The need for analysis of the Education Financing and personnel training and development to ensure return on investment of education.
- Insufficient interdisciplinary linkages between various forms of education and disciplines and thus lack of synergies and a common and coherent approach in promoting sustainable development.
- Poverty among women: Female headed households (39.5%) are more likely to be poor than male-headed households (37.6%) and adult women are more likely to be living in poverty (34.8%) than adult males (31.6%).
- Limited control over productive resources: There is still need to ensure that more women in Rwanda have access to off-farm employment opportunities and increased control over productive resources to fully participate in the national development.
- Gender Based Violence: More efforts are still required to ensure that women are freed from negative social norms and the culture of silence about GBV affecting timely reporting, prevention and effective legal assistance.
- Lack of Standard Operating Procedures: There is still need for establishing Standard Operating Procedures at all centers caring for children with disabilities.
- Lack of Systematic Capacity Development: There is need for a comprehensive capacity building program to address capacity need in the center caring for children with disabilities.

## Conclusion

Transforming Education systems for sustainable development and the achievement of SDGs in Rwanda will necessitate a precise understanding of the structural drivers of poverty, gender, education, climate change and the trends that will pull the country in a sustainable positive direction. This will be done through a research-based and informed innovative approaches that are aligned to SDGs. Also, despite the remarkable achievement Rwanda has attained, there are critical challenges in relation to the quality of education at all levels from beginning Pre-school to University level. For education to be a catalyst to sustainable development, education will have to be transformed so that it is aligned to the kind of sustainable in aspects of developments with regard to crosscutting issues.

How do education systems need to change if they are to address cross-cutting inequalities (poverty, gender, indigeneity)?

In relation to poverty

- Education systems should address the needs of the community. There should be a shift from the colonial conception of the school. School and the community should be linked. There should be space created for the school and the community to interact and be linked. There is a need to bring the school back to the community.
- There is need for the education system to impart entrepreneurial skills. Education should not only impart knowledge; it should focus on imparting skills for doing.

In relation to cultural norms

- Education should focus on the deconstruction of biased cultural and social norms. We should connect what we teach with that we do. For instance, in relation to gender, girls should be placed in leadership position in schools, and at home. This suggests that we have to teach by doing, what is commonly known as 'men-engage approach' in education.
- We have to embrace "doing gender and not speaking gender".
- We have to change gender norms in the class room and school leadership.

With regards to limited skills and human capacity

- We should aim for entrepreneurial education. Education should not be theoretical, it should be practical and focus on life skills. For this to happen, there is a need to foster career guidance and mentoring starting from the lower level of education: pre-primary, primary, secondary and high education.

In relation to marginalized communities

- More research is needed to explore skills, capacity, needs and interests of historically marginalized groups.
- There is a need to explore ways in which their skills and capacity can be developed (e.g. pottery) so that they can earn a decent living out of their work.

The aim of this extended background paper has been to set out in broad terms some of our initial ideas as a Network Plus. To reiterate what was said in the introduction, these ideas and definitions are emergent and therefore provisional. As such, it is hoped that the paper will serve as a useful resource not only for those applying for plus funded projects but also for those involved in developing and synthesizing the research going forward. In this sense, the paper should be seen as a springboard and one point of departure for the journey on which we are about to embark.

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**Contact** Michael Tusiime [krwibasira@yahoo.com](mailto:krwibasira@yahoo.com)

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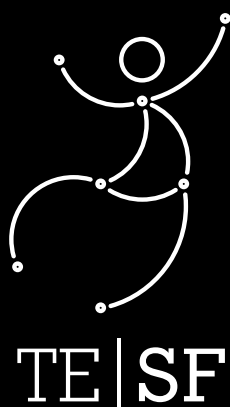
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[www.tesf.network](http://www.tesf.network)  
[info@tesf.network](mailto:info@tesf.network)  
[@TransformingESF](https://twitter.com/TransformingESF)

## The Author Team

**Michael Tusiime**  
**Dan Imaniriho**  
University of Rwanda