

## Usefulness of problem tree, objective tree and logical framework matrix to fix challenges of unemployment and underemployment of higher education graduates in Rwanda, Kenya and Ghana

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### Abstract

*The essence of this paper is to provide a quick scientific and technical framework to dig into emerging educational issues by clearly outlining the causes, revealing the effects and hence devising assessable counteracting measures. In this perspective, with reference to the increasing concern of unemployment and underemployment of higher education graduates in Rwanda, Kenya and Ghana, this paper demonstrates the usefulness of adopting the problem tree, objective tree and logical framework matrix approach. The study was guided by the Theory of Change and used secondary data. Brainstorming and document review techniques were used for data collection. Data were analyzed thematically. The discussion has led to the conclusion that higher learning institutions are not adequately preparing graduates to face the increasing labor market demands in terms of skills and competitiveness. Having outlined the roots of the problem through the problem tree, the researchers proposed potential strategies to handle the issue.*

### Résumé

*Le but capital de cet article est de présenter un cadre scientifique et technique rapide de creuser à fond les défis éducatifs en énonçant clairement les causes, révélant les effets en fin de concevoir des mesures évaluables de lutter contre ces défis. En effet, tenant compte de l'inquiétude grandissante du taux de chômage et du sous-emploi des diplômés de l'enseignement supérieur au Rwanda, au Kenya et au Ghana, cet article démontre l'utilité de l'adoption de l'arbre à problèmes, l'arbre aux objectifs et l'approche de tableau matrice. L'étude s'est inspirée de la Théorie du Changement et a utilisé des données secondaires. Réflexion-exchange et documentation ont été utilisées pour collecter les données. Les données ont été analysées thématiquement. Il a été conclu que les établissements d'enseignement supérieur ne préparent pas adéquatement les diplômés à affronter les exigences du marché du travail en termes d'habiletés et compétitivité. Par conséquent, les chercheurs ont proposé des stratégies potentielles pour éradiquer le problème.*

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**Key words:** Unemployment, Underemployment, Higher Education, Graduate, Rwanda, Kenya, Ghana.

### Background

With time, the issue of graduates' employability is becoming a concern. This is due to the fact that unemployment has got not only individual but even social repercussions as highlighted in the European Union's Lisbon Declaration of the year 2000 (Burgess & Turon, 2005). So far, unemployment was experienced across various nations and re-

ported to be associated with diverse reasons. For instance, towards the 1990's, unemployment was experienced in USA due to a racial or ethnic related matters (Vedder & Gallaway, 1992) while during the same decade, in Spain, unemployment was reported to have been caused by the inflation explosion (Bentolila, et al., 1990).

In the 21<sup>st</sup> century, the causes of unemployment are quite dissimilar to the past century. For instance, in China, unemployment is attributed to the high expectations set by students themselves while still in schools or universities (Moorman, 2011). In Taiwan, unemployment is much associated with the expansion of higher education (Wu, 2011). In Iran, unemployment is linked to the mismatch between fields of studies, employment skills and supply for labor (Mina, Musa & Jaffri, 2013).

In the case of Africa, Stampini and Chouchane (2011) carried out research on labor market dynamics in Tunisia. Their findings culminated in the fact that private sector is yet potentially capable of absorbing considerable job aspirants. Indeed, women and university graduates still lack required skills in order to win the available job opportunities. Still in Africa, a study carried out in East African countries by Haji (2007) has confirmed that the issue of unemployment is directly affecting lives, enforcing the continuous vicious circle of poverty and social exclusion. This study proposed that all East African States should promote an integrated economic and employment growth in order to reduce youth unemployment and under-employment in both rural and urban areas.

Truthfully, in order to alleviate unemployment, the educational system has been certified to play a key role. In fact, the transformative powers through education are built on the evidence that despite the causes of unemployment around the world, being cyclical factors or exogenous shifts on the supply side, education has always been put forward among the major weapons to fight it (Arulampalam, Booth & Taylor, 2000). In support of this, the convincing example is that of Persian Gulf whereby countries like Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates have upgraded their educational systems as the ultimate and long lasting solution to address the issue of unemployment (Andrzej, 2000).

Normally, higher education institutions are expected to provide individuals with the necessary skills and knowledge that enable them to be useful and attractive to the labor market. Nevertheless, higher education graduates are now suffering from exponential unemployment and underemployment. In Rwanda, 45% of Master degree holders are reported to be underemployed (Asaba, 2015). In Kenya, the rate of unemployment is pegged at 40% (Vera, 2014) of which higher education graduates are the majority (Amimo, 2012). In Ghana, among unemployed, a considerable proportion is made of graduates from universities and other tertiary institutions (Boateng & Ofori-Sarpong, 2002). In the same vein, Yakubu (2012) shows that as per current statistics, about 50% of higher education graduates in Ghana were likely not to get jobs soon.

For sure, these issues of unemployment and underemployment need a methodical and technical analysis approach that would draw the suitable counteracting mechanisms where higher education institutions would play a central role. Otherwise, the hope for a better future would become a dream and result in more socio-economic threats that will be difficult to manage in the near future. It is for this reason that this paper aims at demonstrating the

usefulness of problem tree, objective tree and logical framework matrix to fix the issue of unemployment and underemployment by considering the particular cases of Rwanda, Kenya and Ghana.

### **Research objectives**

- (1) To find out the causes and effects of unemployment and underemployment of higher education graduates in Rwanda, Kenya and Ghana and expose these in a problem tree.
- (2) To determine the means to curb unemployment and underemployment of higher education graduates in Rwanda, Kenya and Ghana and analyze the expected ends through an objective tree.
- (3) To propose a working plan to mitigate unemployment and underemployment of higher education graduates in Rwanda, Kenya and Ghana using a logical framework matrix.

### **Theoretical framework**

This paper was guided by the Theory of Change (Stein & Valters, 2012). In fact, this theory was found appropriate because the issues of unemployment and underemployment need practical, viable and measurable interventions. These interventions are expected to reshuffle pre-existing mechanism so as to lay the ground to innovative practices (Bours, McGinn & Pringle, 2014). Again, as the discussion of the paper is built from a demonstration on the usage of problem-tree, objective tree and logical framework matrix, this justifies the choice of the theory of change which insists on portraying causal pathways and activities to be undertaken all together under complementary and intertwined ways that bring out unique outcomes (Rogers, 2014).

### **Review of the literature**

#### ***The concept of unemployment and underemployment***

Sources of information define differently the concept of unemployment. For instance Investopedia; an online encyclopedia, communicates that unemployment can be said to occur when a person who is enthusiastically looking for job and is unable to find it. According to the International Labor Organization –ILO (2015) , a person is unemployed if this person is (a) not working, (b) currently available for work and (c) seeking work (Byrne & Strobl, 2001). On the other hand, unemployment is used by the Bureau of Labor and Statistics-BLS (2015) to mean people who do not have a job, have vigorously looked for work in the past four weeks and are at this time available for work. The concept of unemployment is also used to refer to people who were temporarily laid off and are waiting to be called back to that job (BLS, 2015) while Bradbury (2006) uses the term to reflect people without a job and who are looking for it.

The above discussion indicates that there are variations in the meaning and operationalization of the concept of unemployment which led Brandolini, Cipollone and Viviano (2004) to admit that the measurement of unemployment is not straightforward and rests on a number of arbitrary choices. In practice, unemployment is measured by using the rates that are computed on the basis of the ratio of unemployed people in a particular time, place or area to the sum of the number of employed.

The concept of underemployment is also defined in a different ways. For some, underemployment is used to explain overstaffing or a situation whereby one's job does not permit total use of his/her skills, abilities or productive capacity (Walling & Clancy, 2010). For others, it is either working on part-time (Haataja, Kauhanen & Nätti, 2011), working under unsatisfactory working conditions to the worker or working on a full-time job on which the candidate over qualifies (Blustein, Kozan & Connors-Kellgren, 2013). According to Walling and Clancy (2010), the estimation of underemployment rate is based on the proportion of people disposed to work for more hours, available to do so and worked less than the specified hours of work threshold.

### ***Causes and effects of unemployment and underemployment***

In reality, the causes of unemployment and underemployment are not easily identifiable and this makes the fight against them complicated in the sense that most of the traced ones are indirect or theoretical (Atkinson, Luttrell & Rosenblum, 2013). Nonetheless, according to Golub and Hayat (2014), the first cause of underemployment is the lack of demand for labour. The reason behind this fact is the per capita gross domestic product (GDP) which is in most cases continuously inadequate and poverty reduction strategies that have gradually failed to be implemented. The second cause of unemployment commonly experienced today is mismatch between skills and job requirements. In fact, work places are increasingly becoming sophisticated due to globalization and competition effects. Hence, more and more skills are being demanded which sometimes job seekers and graduates hardly respond to (World Economic Forum, 2014). The third widespread cause of unemployment is the organizational strive towards efficiency and profit maximization. As a result of this, organizations are continuously engaged in restructuring that hike the terms and conditions of work while on the other hand causing an increase in job losses and freezing of hiring opportunities for new entrants (Brügemann, 2014).

Unemployment and underemployment have varied effects. A study carried out by Blustein, Kozan and Connors-Kellgren (2013) has correlated unemployment to ill health (physical and mental), despair, frustration, poverty and lack of relational and instrumental support. Further effects of unemployment and underemployment include financial insecurity, indebtedness (Mroz & Savage, 2006), criminality, family disturbance, suicide (Smith, 2012), drug addiction, homelessness, malnutrition, poor prenatal care, school dropouts, racial and ethnic antagonism. Again, further long run effects of unemployment include technological stagnation, small amount of innovation, corrosion in labor skills, political instability, extremist ideologies and antidemocratic political movements (Jakimovski, 2010).

### ***The role of Higher education vis-à-vis unemployment and underemployment of graduates***

According to Arulampalam, Booth and Taylor (2000), education has always been a weapon to fight the cyclical or exogenous factors of unemployment and underemployment. For instance, upgrading the educational systems has been a solution to address unemployment in Persian Gulf (Andrzej, 2000). One of the recommendations made in a study carried out by Stampini and Chouchane (2011) in Tunisia, was to enhance high-skills development which ties in directly to the role of higher education. Likewise, in Rwanda, the focus has shifted to more investments in science,

technology and Technical, Vocational Education and Training (TVET) that are expected to prepare young graduates to create their own employment and decrease the dependency on public service jobs (Republic of Rwanda, 2012). In Ghana, the root causes of the scarcity of jobs for graduates are rapid expansion of higher education system and financial crisis (Matthews, 2013). Therefore, more emphasis is put on technical and vocational education, industrial and technological programmes that are capable of making graduates fit for the current job market (Yarquah & Baafi-Frimpong, 2012). Furthermore, the Ghanaian Higher Education is called to produce well equipped graduates with the job-relevant skills (Bawakyillenuo, Akoto, Ahiadeke & Doku Aryeetey, 2013).

Although higher education alone cannot solve the issue of unemployment and underemployment, it is responsible to act on three key issues that guarantee more chances to graduates. These are improvement of the quality of curriculum, enable a broader learning experience for students and provide targeted employability input (The Going Global, 2014). The figure 1 illustrates the scenario.

**Figure 1:** Link between university study and employment



**Source:** The Going Global, 2014)

### ***Challenges of higher education to produce employable graduates***

Starting with Rwanda, despite the Rwandan government's emphasis on graduates skills, ability and knowledge that are fundamental for their employability, there are still loopholes in the relevance and quality of higher education programmes. For instance, Rutikanga (2015) testifies that due to lack of required employable skills, 252 Nurses who had acquired their full degrees could not be registered nor employed in the health sector. Hence, they were ordered by the Ministry of Education to go back for complementary courses. In addition, Bucyana (2015) reported that there are cases of graduates' complaints in which some pointed out that higher education wasted their time and resources.

In Kenya, although higher learning did not cease to expand and proliferate, the provision of quality education in some institutions is also questionable. This is revealed by Ngaga's survey (2011) which stressed that due to quality motives, 57% of the respondents preferred to study in a foreign university than in a local one. In the view of Wanzala (2013) the problem of relevance and quality of higher education in Kenya is affected by political interference, corruption, nepotism and socio-economic chaos. Indeed, the quality assurance bodies are not continuously doing their job which gives room to some institutions to hide themselves under certification umbrellas; while the realities within are that they provide almost nothing (Wanzala, 2013).

In the case of Ghana, despite the fact that higher education aims at producing quality graduates, standards have fallen. In an attempt to explain the root causes of poor quality in Ghanaian Higher Education, which is characterized by ill-prepared graduates for the job market, Dasmani (2011) pointed out the high cost of training, inadequate facilities, the emphasis on passing examinations rather than acquiring skills as well as insufficient supply of instructional materials, large class sizes and fragile linkages between training institution with local industries for hands on experience as some of the remote causes of poor higher education in Ghana.

### **Methodology**

The development of this paper undertook a research synthesis approach (Onwuegbuzie, Leech, & Collins, 2012); which is purely a qualitative research design. In fact, the researchers combined two major data collection techniques to gather necessary data. These are brainstorming and document review techniques. The collected data were analyzed thematically and discussed in light of the research objectives.

### **Findings**

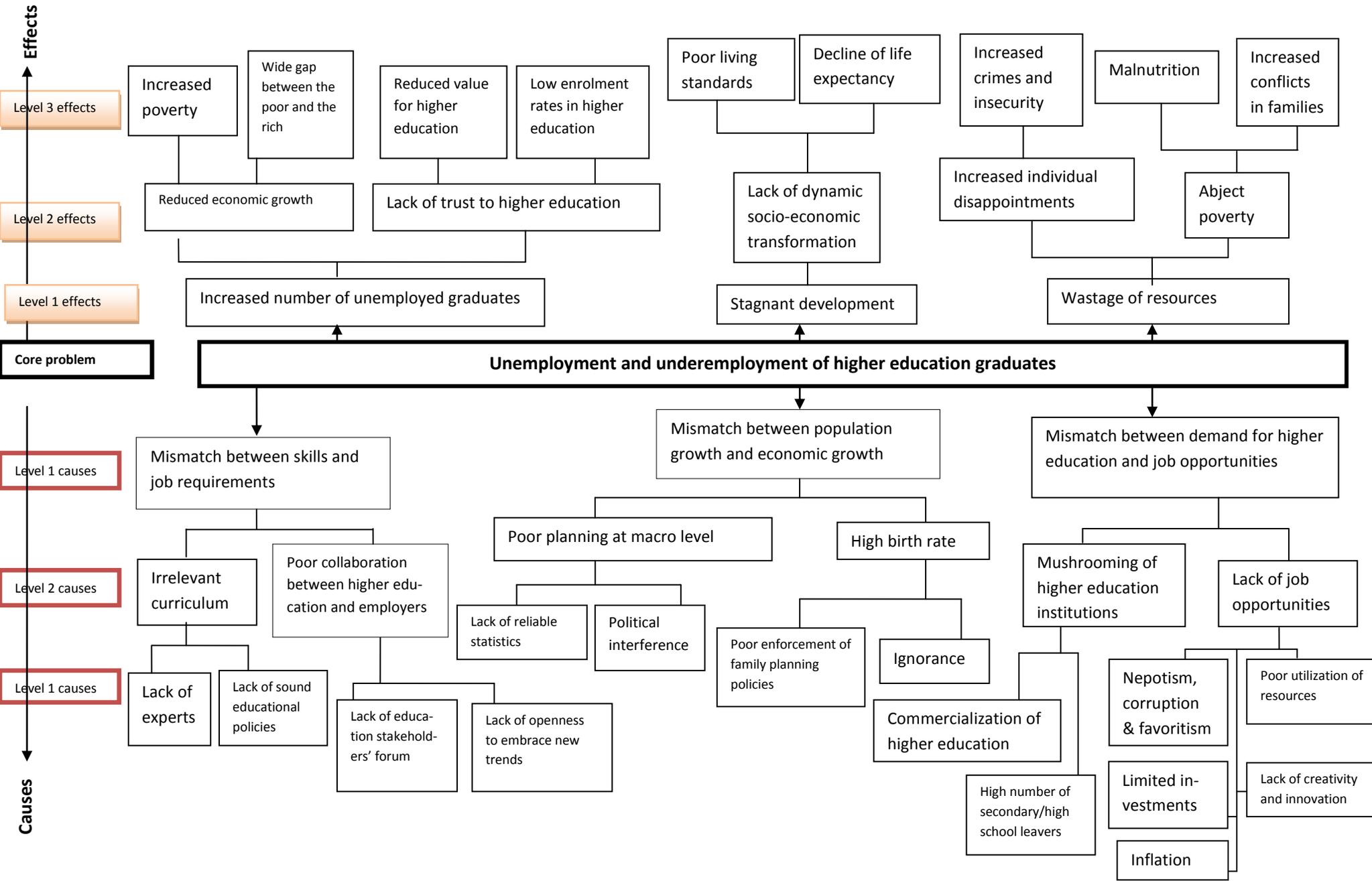
The researchers' critical deliberation on the core problem of unemployment and underemployment of higher education graduates in Rwanda, Kenya and Ghana has led to three major underlying causes called "level one causes". These are (1) the mismatch between skills and job requirements, (2) the mismatch between population growth and economic growth and (3) the mismatch between demand for higher education and job opportunities. Against this level one of the causes, researchers did a parallelism to identify the immediate effects called "level one effects". The identified level one 'effects' were (1) the increased number of unemployed graduates, (2) the stagnant development and (3) the wastage of resources. It is on the basis of this that a thorough probe into levels two and level three of the causes as well as levels two and three of the effects were done and presented in the problem tree (see figure 2).

In light of the problem tree, the researchers formulated the ultimate goal which is to increase higher education graduates' employability and employment opportunities. In order to achieve this central goal, the researchers developed an objective tree (see figure 3) by using all the elements that constituted the problem tree. In fact, the causes presented in the problem tree were translated into means while the effects were turned into the ends; just like it is said in Kiswahili that *'dawa ya moto ni moto*, to mean that 'the cure to the heat is the heat'.

Taking into account the fact that some good recommendations remain inadequately interpreted or even implementers fail to translate them into actions with a clear roadmap, researchers drew a four by four (4x4) table called logical framework matrix. With this table also known as Logical Frame Matrix, the goal, the purpose, results and activities or inputs constitute the headings of the rows while narrative summary, objectively verifiable indicators (OVI), means of verification (MOV) and assumptions are the headings of the columns (see table 1). More details and designs of the problem tree, objective tree and logical framework matrix are presented here below.

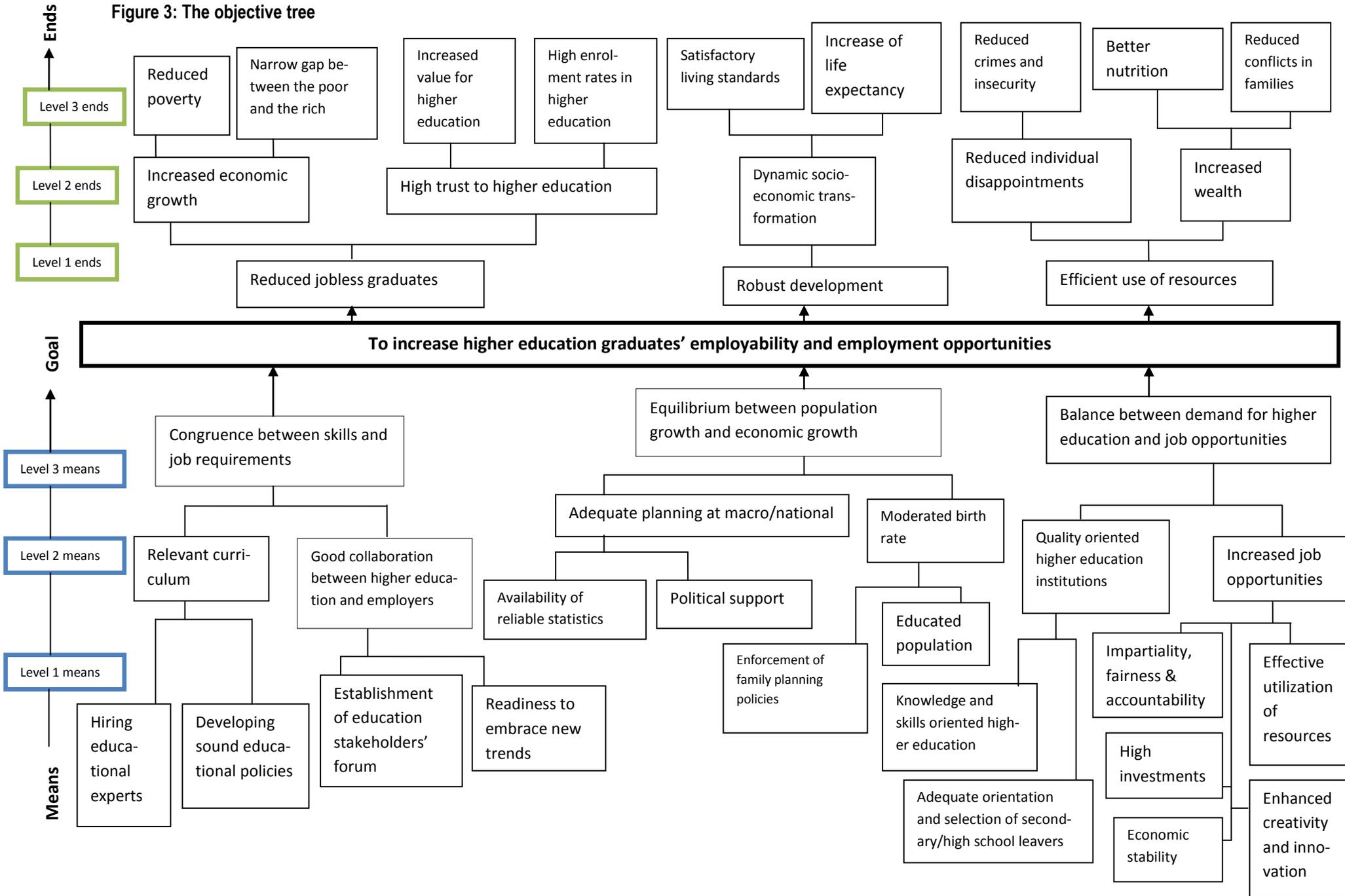
**The causes and effects of unemployment and underemployment of higher education graduates in Rwanda, Kenya and Ghana**

**Figure 2: The problem tree**



*The means to curb down unemployment and underemployment of higher education graduates in Rwanda, Kenya and Ghana and expected ends*

Figure 3: The objective tree



*The working plan to mitigate unemployment and underemployment of higher education graduates in Rwanda, Kenya and Ghana*

**Table 1: Logical framework matrix**

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS (OVI)	MEANS OF VERIFICATION (MOV)	ASSUMPTIONS
<p><b>GOAL</b> To increase higher education graduates employability and employment opportunities</p>	<ul style="list-style-type: none"> <li>- Increase of job creation and demand for labor</li> <li>- Number of higher education graduates with jobs</li> </ul>	<ul style="list-style-type: none"> <li>- Data from national statistics, research boards and ministries in charge of labor</li> <li>- Less number of complaints and job seekers from higher education</li> </ul>	<ul style="list-style-type: none"> <li>-Data on employment are continuously collected, safeguarded and updated</li> <li>- The countries' economy remains promising</li> <li>- The private sector fast grows to gives employments</li> </ul>
<p><b>PURPOSE</b> To attain a balance between: -skills and job requirements -population growth and economic growth - demand for higher education and job opportunities</p>	<ul style="list-style-type: none"> <li>- Revised university programmes and curricula</li> <li>- Governments' policies and actions</li> <li>- Partnerships with educational stakeholders</li> </ul>	<ul style="list-style-type: none"> <li>- University prospectus, programme specifications and module descriptions</li> <li>- Researches conducted on knowledge and labor market skills' requirements</li> <li>- Memorandum of understanding signed</li> </ul>	<ul style="list-style-type: none"> <li>- Collaboration with all potential stakeholders remains high</li> <li>- Required resources are available</li> <li>- Trust and security remain incontestable</li> </ul>
<p><b>RESULTS</b> -Reduced poverty -Increase of life expectancy -Increased value for higher education -Reduced crimes and insecurity</p>	<ul style="list-style-type: none"> <li>-Improvement in people's living conditions</li> <li>-Quantity and quality of higher education graduates</li> <li>- Peaceful society</li> <li>-Boosting economy</li> </ul>	<ul style="list-style-type: none"> <li>-The countries' Gross Domestic Product (GDP), income per capita and Gross national product (GNP)</li> <li>-Higher education graduation booklets</li> <li>- Tracer studies' findings on higher education graduates fitness for purpose in the labor market</li> <li>-Police and judiciary reports</li> <li>-Data for development and investment bodies and institutions</li> </ul>	<ul style="list-style-type: none"> <li>-Monitored economy and proper actions taken in good time</li> <li>-Higher education quality assurance entities fulfill their tasks as due</li> <li>- Visionary and strong leadership</li> <li>- Strong collaboration with all potential stakeholders</li> </ul>

**ACTIVITIES/INPUTS**


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-Involvement of educational experts	- Taskforces of local and internal educational experts are set	- Appointment letters issued	- Willingness to change the old paradigm
-Putting in place sound educational policies	-Revised and enhanced educational policies	- A comprehensive educational policy formulation, analysis, review and implementation advisory committee is set	- The findings are valued and recommendations implemented
-Establishment of education stakeholders' forum	- Regular consultative meetings with educational stakeholders	- Minutes of the meetings	-Strong and democratic leadership
-Availability of reliable statistics	-National statistics bodies are reinforced	- New directives and target sets	- The timely availability of required budget
-Political support	-Financial support for effective macro-planning	- Budget released	- The general population sensitization on job creation, self-employment is at highest
-Enhancing higher education	-Higher education adequately staffed and resourced	- Higher education staff qualifications, budget and other resources inventory	- Higher education institutions strive to meet the required graduates and social expectations
-High investments	-Increase in number of investors	- Statistics from investments' bodies	
- Effective utilization of resources	- Adoption accountability measures	- Legal texts on accountability and punitive measures	
-Enhanced creativity and innovation	- Incubation centres created	-Data from developmental agencies	

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### Discussion, Conclusion and Recommendations

This paper has found out that the major causes of unemployment and underemployment of higher education graduates in Rwanda, Kenya and Ghana is in three folds. These are (1) the mismatch between skills and job requirements, (2) the mismatch between population growth and economic growth and (3) the mismatch between demand for higher education and job opportunities. Against these causes, researchers identified potential effects. The causes and effects were portrayed in a problem tree. The 'Means' to address the underlying 'Causes' and thereby reach the expected 'Ends' were illustrated in an 'Objective Tree'. The researchers constituted a summative table called logical framework matrix. This four by four; 4 columns against 4 rows' table, synthesizes rationally all inputs, expected results, purpose and the ultimate goal to be achieved against objectively verifiable indicators, means of verification and assumptions.

The overall findings led to identify the followings as means to curb the issue of underemployment and unemployment of higher education graduates in Rwanda, Kenya and Ghana: the involvement of educational experts, putting in place sound educational policies, establishment of education stakeholders' forum, readiness to embrace new trends, availability of reliable statistics. There is also need for political support, high enforcement of family planning policies, emphasizing knowledge and skills oriented higher education, adequate orientation and selection of secondary/high school leavers. Last but not least there should be equity in job opportunities, economic stability, effective utilization of resources and enhancement of creativity and innovation. The realization of these measures calls for conjugated efforts from policy makers, higher learning institutions and any other potential stakeholder.

Factually, these proposed means are well supported by contemporary researches and surveys such as Hantangimana (2015), Musoni, (2015), Kigali Today (2015), Owiro (2014), Owusu (2014), African Economic Outlook (2012), Muwanga (2012), BBC (2012) and Otieno (2010). That is why; this paper recommends serious measures to control birth rates and create more job opportunities for youth especially in the urban areas. Indeed, this paper urges for serious policy actions and strong leadership to ensure that higher education institutions enroll and produce up standard graduates. This joins the call made by Bucyana (2015) who insists that degrees should not be considered as "magic bullet to their dream job", rather higher education needs to think more about the question "what does it feel like to produce graduates whose employment is not guaranteed" (Amimo, 2012).

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