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Girls' Enrolment in STEM Fields in Cameroon: Implications for Policies and Reference Frameworks

NGUEMFOUO TCHOUPOU Edith Marceline
Doctorante à l'Université de Yaoundé I, Faculté des Sciences de l'Education

KIBINKIRI ERIC LEN
The University of Yaounde I, E.N.S Yaounde, Department of Science of Education / The University of Bamenda, Faculty of education, Department of Curriculum and Pedagogy

Abstract. *The problem of the status of gender equality in Cameroon's secondary educational programs and projects reveals, so to speak, a manifest insufficient enrolment of girls in STEM fields. The enrolment of boys continues to dominate that of girls. According to MINESUP Statistical Yearbooks, by 2021 the enrolment of girls into science subjects was 11,776 as opposed to 21,104 for boys. In industrial subjects, girls' enrolment was 1,018 as opposed to boys' enrolment of 4, 535. In relation to technical subjects a total number of 6,775 were enrolled as opposed to 7,262 for boys. This inequality that is depicted in the educational system since 2014 could have a major consequence of constituting a hindrance in achieving the objectives set by the government by 2035. Such will influence the non-fulfilment of governmental and international wishes. The educational policy on Science, Technology, Engineering and Mathematics (STEM) considered as a factor of development represents all the commitments or orientations covering the actions of government of a given society. The case of Cameroon is based on a set of international conventions and national legislations and is guided principally by the 1998 law of orientation on education that applies to nursery, primary, post-primary, secondary general, technical and teacher training and the 2001 law of orientating of higher education in Cameroon.*

Key words: *educational policy; Training programmes, STEM; girls' enrolment.*

Introduction

The education of girls and women as well as their integration into the field of Science, Technology, Engineering and Mathematics (STEM) is increasingly attracting the attention of the international community, as well as that of governments. In line with this trend, some countries have decided to incorporate this issue into their educational policies so as not to be side-lined by the international community. The interest in taking into account the integration of girls in this field gives UNESCO the opportunity to include this objective 'in a process of equal opportunity made necessary both from the scientific point of view and with a view to promoting development, particularly sustainable development' (Youance & Groleau, 2009, p.25). In accordance with these numerous international provisions, Cameroon has made girls' education, and particularly science and technical education, one of the priorities of its government policy. According to Kellaghan & Greany (2001), the concept of educational policy refers to the 'official statement of objectives that should govern an education system'. In other words, it is defined as the set of choices and orientations destined to guide government action in the field of social education. The framework for action resulting from these

government commitments may be short term (at local level) or wide-ranging (nationwide). As part of the numerous international conventions,

The objective of this paper is to determine the extent to which Cameroon's development strategic policies and programmes are involved in promoting Science, Technology Engineering and Mathematics education for girls in the so-called development pathways. This work will focus on three areas. The first section will present the situational analysis of girls' enrolment in STEM fields in Cameroon. Secondly we shall examine the foundations and specific features of educational policy in Cameroon, taking into account the link between girls' education and STEM subjects. Next, a documentary study of the various texts and programmes relating to education both in Cameroon and in Africa will enable us to analyse and evaluate the extent to which this issue has been taken into account in educational policy. The fourth part will enable us to identify a number of shortcomings and put forward a number of suggestions with a view to resolving the problem of attracting girls and integrating them into STEM subjects within the Cameroonian education system.

Statement of the problem

The socio-cultural and human capital produced by the educational system of any country in the world is a guarantee for the development of that country. A high level of education is important for individual fulfilment, socio-professional integration and societal transformation with a view to development. The development of a society depends on the level of education of its population. Lardy (2017, p.6) backs this up by stating that 'the average level of education is a key factor in economic development and a guarantee of personal development for individuals and society as whole. With this in mind, the AfDB (2016) states that:

The needs of the continent, including the development of its infrastructure, its industrialisation, the modernisation of its agriculture, the growth of its private sector and the improvement of its systems of government and accountability, have as a common denominator the need to have people capable of acquiring scientific and technological skills. There can be no improvement in the quality of life of Africans without investment in professional skills, science, technology and innovation (para.2).

In view of these comments, which illustrate the importance of the issue, it is important to note that, according to the African Development Bank (AfDB), development in Africa cannot be achieved without competent human resources and the promotion of STEM vocational training. According to Mujawamariya et al (2012, p.36), Science, Technology, Engineering and Mathematics (STEM) fields play a vital role in the jobs of the new economy.

Invoking the question of the representativeness of girls in STEM fields refers to the great debates and discourses on this fact and, specifically, to highlighting the gender issue towards global development. In 2016, on the International Day of Women and Girls in Science, the African Development Bank noted that gender issues and science, as well as their impact on progress, the economic situation and quality of life, are very important sectors in society. This is why this day provides an opportunity to reflect on the links between these two areas. No country's development efforts can do without more than half of its population that is mostly female. From this perspective, the education and training of the female population is a 'prerequisite for any development activity' (Dicko & al., 2007, p. 9). To corroborate this statement, the former Secretary-General of the United Nations (UN), Kofi Ata Anan (Plan International, 2020), declares that 'there is no instrument of development more effective than girls' education'. It is in this context that Mujawamariya et al, (2012, p. 37) state that 'emphasis is placed on the need to increase the number of people skilled in STEM fields. In this respect, the contributions of girls and women are no different from those of men'. Hence the need to examine girls' enrolment in STEM fields in Cameroon and the implications for policies and reference frameworks.

Situational analysis of Girls' enrolment in STEM fields: The case of Secondary school baccalaureate admissions by gender from 2014 to 2021.

According to the Ministry of Higher Education statistical yearbooks, the registration and admission rate for girls in the Scientific Baccalaureate and Industrial Baccalaureate is lower than that for boys.

Statistics show that even though the average percentages in cases seem to be higher for girls than boys, fewer girls are registered and admitted in to the sciences, industrial subjects and technical subjects. For instance in 2021 the enrolment of girls into science subjects was 11,776 as opposed to 21,104 for boys. In industrial subjects, girls' enrolment was 1,018 as opposed to boys' enrolment of 4, 535. In relation to technical subjects a total number of 6,775 were enrolled as opposed to 7,262 for boys. This is illustrated in Table 1

Table 1: Secondary school baccalaureate admissions by gender from 2014 to 2021.

Series / Year		Sciences			Industrial			GCE AL Technical		
		Registered	Admitted	%	Registered	Admitted	%	Registered	Admitted	%
2014	**F**	21 394	12 504	**58,45**	583	331	**56,78**	2 920	1 549	53,05
	M	34 650	17 952	51,81	6 136	2 964	48,31	1 878	1 092	**58,15**
2015	**F**	16 713	9 866	**59,03**	776	578	**74,48**	3 408	2 219	**65,11**
	M	28 657	16 584	57,87	5 971	3 534	59,19	2 084	1 125	53,98
2016	**F**	21 674	11 118	**51,30**	879	523	59,50	3 027	1 636	**54,05**
	M	33 100	16 163	48,83	6 017	3 706	**61,59**	2 240	1 048	46,78
2017	**F**	19 756	10 621	**53,76**	703	431	**61,31**	3 065	1 486	48,48
	M	31 854	16 314	51,21	6 054	3 101	51,22	1 959	1 098	**56,05**
2018	**F**	24 258	13 497	**55,64**	1 082	670	**61,92**	406	295	**72,67**
	M	34 444	18 831	54,67	6 946	3 117	44,87	319	201	63
2019	**F**	27 842	16 117	**57,89**	1 251	831	**66,42**	2 251	1 959	**87,03**
	M	36 333	20 649	56,83	6 828	4 266	62,48	1 438	1 178	81,92
2020	**F**	23 333	13 622	**58,38**	1 503	1 074	**71,46**	3 719	2 432	65,39
	M	30 883	17 443	56,48	8 251	4 920	59,63	3 747	2 661	**71,02**
2021	**F**	16 410	11 776	**71,76**	1 283	1 018	**79,34**	3 985	2 700	67,75
	M	22 274	21 104	94,75	6 682	4 535	67,87	4 003	2 907	**72,62**

Sources: MINESUP Statistical Yearbooks: 2015, 2016, 2017, 2018, 2020, 2021, pp. 37, 38

In this context, girls who can be considered as majorities (proportion of the population) - minorities (proportion of secondary school leavers) considered as majorities (proportion of the population) - minorities (proportion of secondary school leavers) represent an enormous reservoir whose potential can be exploited. What steps are being taken by policymakers to increase the enrolment or participation rate of girls in STEM subjects?

Foundations and characteristics of educational policies in Cameroon

In this section we examine the international frameworks and conventions as well as Cameroon's national policy and their implication on the education of girl children.

Institutional framework and international conventions

In 1992, the Earth Summit took the form of the 'Rio Declaration'. The aim was to preserve the planet in a sustainable manner for future generations. To this end, all populations must mobilise to achieve this objective. The female population is the most affected. The Rio Declaration states that 'the full participation of women is essential for the achievement of sustainable development' (Ministère de la promotion de la femme et de la famille, 2010, p.9). In 1994, the International Conference on Population and Development (ICPD) recommended that countries prioritise population education through universal access to education in general, and in particular the education of girls, who represent the least literate section of the population. Principle 10 of this conference states that 'everyone has the right to education especially women and girls' (ICPD, 1994, p.12). The fourth World Conference on Women (1995) enabled governments to commit themselves to several aspects of women's lives. These included the elimination of all forms of discrimination against women and the empowerment of women. This conference thus lays the foundations for gender mainstreaming in the development processes of society.

Taking gender into account in the development process is also part of sustainability through the development of the 2030 Agenda. The fifth Sustainable Development Goal (SDG) is entirely devoted to the problem of gender inequality. According to the 2030 Agenda, Goal 5 aims to encourage equal opportunities for men and women and to promote equitable opportunities for participation at all

levels. It enables the design and implementation of all public policies from a gender perspective and encourages the implementation of policies dedicated to combating inequalities that persist and require positive measures in favour of women (UNDP, 2020). This need for action also extends to the field of Science, Technology, Engineering and Mathematics.

Characteristics of educational policy in Cameroon

Education is one of the priority areas in the development of government policy in Cameroon. Cameroon's education policy is based on international legislation transcribed in the Millennium Declaration for 2015, the Jomptien Conference (1990) and the Dakar Conference (2000).

Generally speaking, the education system is guided by two laws: the 1998 Orientation Law and the 2001 Higher Education Orientation Law. The first law, the law of orientation of Education in 1998, sets out the legal framework, missions and main lines of educational action in Cameroon. This law applies to the nursery, primary, general secondary and technical education systems, as well as teacher education. The primary mission of education in Cameroon is 'the training of children with a view to their intellectual, physical, civic and moral development and their harmonious integration into society' (Law of Orientation, 1998). As part of the implementation of this education policy, the Cameroonian state must adapt its education system to the various international changes. The second law concerns only higher education. Whether in the private or public sector. This law sets out the legal framework and the various guidelines for higher education in Cameroon.

Nowadays, where techno-science is the driving force behind development and the global economy, Cameroon is called upon to adapt to different contexts through the education and training of its people. Since Cameroon does not evolve in a vacuum, it has taken this dynamic principle into account. This is transcribed in the Law of Orientation of Education, which represents Cameroon's national education policy to this day. Article 11(2) of this law stipulates that the State, in the light of multifaceted international changes, 'must ensure the constant adaptation of the educational system to national, economic and socio-cultural realities, and also to the internal environment...' (Orientation Act, 1998, p.2).

As far as higher education is concerned, the 2001 law was promulgated to serve as the legal framework to guide the practical and organisational arrangements for this level of education and training. Several missions are assigned to this level of education. Generally speaking, this law states that the fundamental mission of higher education is 'the production, organisation and dissemination of scientific, cultural, professional and ethical knowledge for the development of the nation and the progress of humanity' (Higher Education Orientation Act, 2001, p.3). Specifically, higher education aims to achieve excellence in all areas of knowledge and, above all, to promote science and social progress.

Research methodology

N'Da (2015, p. 129) states that 'a documentary study allows the researcher to have what he/she needs to explain or understand a phenomenon'. With this in mind, the documentary study consists of researching the important information contained in the various educational policies, the various official texts and programmes, and the guiding laws.

Several strategic documents on the issue of girls' education in general were consulted. Specifically, the aim was to gather information on the education of girls in scientific fields. The various documents consulted included the Poverty Reduction Strategy Paper (PRSP), the Growth and Employment Strategy Paper (GESP), the Education and Training Sector Strategy Paper (DSSEF), Vision 2035, the National Development Strategy 2020-2030 (SDN), the National Gender Policy (PNG), and the Higher Education Orientation Act. This technique enabled the researcher to collect information with a view to assessing the extent to which issues of girls in STEM have been taken into account in Cameroon, and how they are being implemented in University Institutes of Technology (IUTs).

Taking gender into account in programmes and projects in Cameroon

Actions and programmes aimed at modernising and eradicating poverty in Cameroon give rise to the development and adoption of policies, strategies and programmes. These different levels of government action are designed to improve the living conditions and needs of all sections of the country's population. Particular attention is paid to women. From various policies, gender in general and women/girls in particular are the focus of government attention. Taking the gender approach into account is part of sustainable development strategy, hence the development of a National Gender Policy (PNG, 2011).

In the 2000s, Cameroon based its economic growth policy on poverty reduction. In this context, the Poverty Reduction Strategy Paper (PRSP) was adopted in 2003. The government's current actions are based on this PRSP. In 2009, Cameroon committed to a long-term vision. This vision enables the implementation of a programme document called Vision 2035. In socio-demographic terms, the government's challenge is to 'make Cameroon's population a driving force for its development through [...] the formation of human capital' (Vision 2035, 2009). The challenge of training the human capital that is essential to achieving the status of an emerging and industrialised country lies in the quality of education. This quality results from improving the internal efficiency and relevance of training and education. In this long-term programme of the nation's policy, the gender approach is partially evoked in its economic and social aspects.

The revision of this document in 2010 gave rise to the Growth and Employment Strategy Paper (DSCE), which requires the population to participate in the country's growth process. The gender approach in the field of education focuses on enrolment and improving access to education for girls. The equity aspect is also taken into consideration in terms of the representation of girls in all sectors of vocational and higher education (DSCE, 2010).

Looking at all these programme documents (policy, laws, DSCE, Vision 2035), it is clear that the gender approach is focused on aspects relating to improving the school enrolment rate for girls; improving the conditions for girls to access and stay in school; making women in rural areas literate; and improving the representation of girls in all sectors of vocational training. This approach is evoked in certain aspects of these programmes.

STEM and the need to promote science education for girls in national policies, strategies and programmes

The process of development and emergence of a country cannot take place in isolation from the field of Science, Technology, Engineering and Mathematics (STEM). In Cameroon, the country's industrialisation strategy is a prerequisite for reaching the stage of an emerging and industrialised country. This ambition, defined in Vision 2035, is leading to the development of appropriate strategies to achieve this objective. This vision states that,

Industrialisation, which is the foundation and cornerstone of Cameroon's long-term development vision, will thus be based on the following three fundamental axes: promotion of the manufacturing sector, development of infrastructure and training of human capital [...]. Set up specific competitiveness programmes for sectors with high growth and job creation potential. [Emphasis will be placed on the development and mastery of scientific and technical knowledge (2009, p.36-37).

The main socio-demographic challenge of this vision is specifically 'to make Cameroon's population a driving force for its development through [...] the formation of human capital' (Vision 2035, 2009). This population-based challenge is characterised by the strong representation of young people at the base of the age pyramid. It is an unconditional asset in that it must be of an inescapable quality, competent and with a good level of training.

In the context of globalisation and modernity through technical and scientific progress, Mujawamariya, Gaudet, & Lapointe (2012), stressed that 'the emphasis is on the need to increase the number of people skilled in STEM fields. In this respect, the contribution of girls and women is not different from those of men' (p.37). The issue of promoting girls in the field of Science, Technology, Engineering and Mathematics (STEM) has thus captured the attention of the Cameroonian

government. As part of the development of the National Gender Policy (PNG), the situational analysis of issues related to this problem in the country revealed the under-representation (-21% from 2003-2007) of girls in STEM subjects (p. 32). Njimeni (2018, p.228) declared that 'measures have been taken to integrate young girls into scientific and technical courses of study'. The development programme, known as the 2035 vision, incorporates this desire of the government into strategies based on social development. This strategy consists of placing the emphasis on 'guiding students, particularly young girls, into scientific and technical fields' (Vision 2035, 2009, p.41).

The gender aspect of the 2010 Growth and Employment Strategy Paper (GESP) highlights the problems of access to education in rural areas and the issue of equitable representation of this section of the population in all sectors of education and employment. The promotion of girls in science, technology and engineering is neglected. From the law on the orientation of the education system to the law on the orientation of higher education, insufficient objectives are defined in this area to implement the aspirations of the government to encourage and guide girls in this sector of education and training.

In 2020, the Cameroonian government defined its National Development Strategy for the period 2020-2030 (SND 30). This is a new reference framework for government action over the aforementioned decade. In order to maintain the objective of the 2035 vision, namely emergence, this instrument defines the second pillar of this industrialisation strategy in terms of developing and improving human capital (SND30, 2020). This reference framework places government action within the logic of endogenous growth theory, which postulates that 'most growth will come from the encounter between well-prepared human resources and technological innovation' (SND30, 2020, p. 40). In this new compass, the gender approach in STEM fields is addressed. Accordingly, SND30 envisages the continuation of 'the policy of equitable access for girls and boys, men and women to education, training and information [... and] enact principles to ensure better representation of women' (SND30, 2020, p. 83). Following the studies carried out as part of the preparation of the National Gender Policy (PNG), it emerged that 'girls have the skills required to meet the demands of the professions' (p.36) relating to the development process.

Based on Figari & Noël's (2014) definition of educational policy analysis, it is useful to draw up a synoptic table of these different policies, development programmes and legislation in order to assess whether or not the guidelines defined in relation to girls/STEM issues have been effectively implemented.

Table 1: Summary of analyses of documents

N°	Type of document	Source, duration or period of time	Place and date of publication	Axes or gender related strategies	Measures linked to the girls/STIM issue	Observations
1	Poverty Reduction Strategy Paper (PRSP)	Government	Yaoundé; 2003	ALL CLEAR	No significant measures set out to address the issue of girls in STEM	No significant measure to promote girls in STEM subjects
2	Growth and Employment Strategy Paper (GESP)	Government (2010-2020)	Yaoundé, August 2009	- Human development in education and training of human capital in technical fields. - Conditions of access	- Improving the quality of training offered in STEM subjects - Equitable representation of girls in all	This document defines the percentage of girls to be represented in STEM subjects.

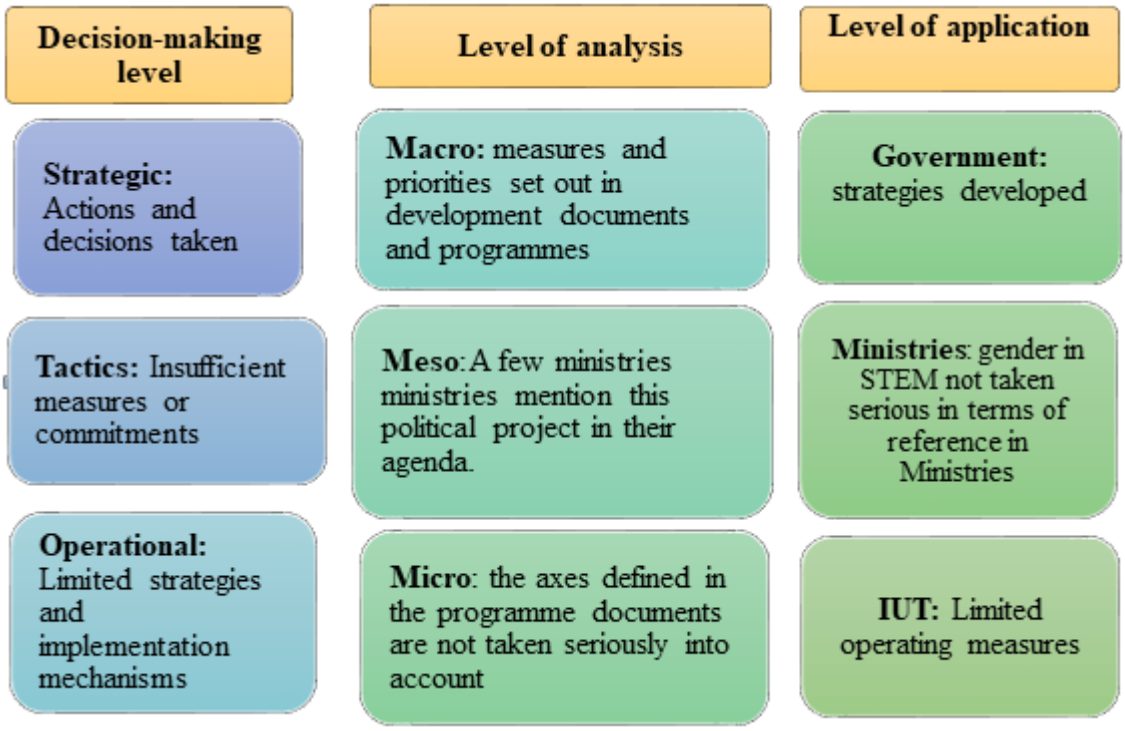
				and representation rates for girls in vocational training courses.	training sectors (p. 18)	
3	Education and Training Sector Strategy Paper (DSSEF)	MINEPAT (2013-2020)	Yaoundé, August 2013	- - Increasing girls' access to scientific and technological subjects in general secondary education (p. 97).	- Improve access and equity by reducing multi-faceted disparities in all levels of education	The priorities of this document take into account the promotion of girls in STEM subjects at secondary and tertiary levels.

N°	**Type of document**	**Source, duration or period of time**	**Place and date of publication**	**Axes or gender related strategies**	**Measures linked to the girls/STIM issue**	**Observations and comments**
4	Education and Training Sector Strategy Paper (DSSEF) (continued)	MINEPAT (2013-2020)	Yaoundé, August 2013	Developing higher education provision with a view to professionalization and strengthening scientific and technological courses of study (p. 55)	Increasing the number of female students in scientific subjects in higher education (p. 98)	This study is consistent with the objectives set out in this working document.
5	Cameroon Vision 2035	MINEPAT	February 2009	Building solid human capital to achieve emergence	Emphasise guidance for students, particularly girls, in scientific and technical subjects (p. 41).	This document addresses the problem of this study
6	Phase 2 planning of the 2035 vision	MINEPAT	Yaoundé, 2019	Improving the quality of technical training	Focus on STEM education to prepare industrial human capital (p. 8)	The focus is more on the development of STEM disciplines. The gender aspect is not mentioned
7	Law on the orientation of the education system		1998	ALL CLEAR	ALL CLEAR	This issue is mentioned in this important document but not elaborate

Source: Table adapted from the document analysis grid

It emerged from table I, that the gender approach in general is virtually present in all policies, strategies and programmes. However, the government's efforts are mainly focused on getting girls into school, making women literate, improving the conditions for accessing and retaining girls in the education system, the principle of equal opportunity and equity, equal participation of men and women in the decision-making process, and raising awareness of the need to educate girls in priority education zones and rural areas. However, the issues of girls' enrolment and promotion in STEM fields are almost less developed and less taken into account in all these programme documents.

Analysis and implementation of the education policy and policy documents promoting girls in science education in Cameroon: a schematic diagram.



At the operating level, this analytical grid shows that the gender approach in general is practically present in all policies, programme documents and texts. The efforts of the government are mainly focused on getting girls into school and raising awareness of the need to educate girls in priority education zones and rural areas. However, the promotion of girls' in STEM fields is the issue.

Policy issues and the challenges to bring about change

Based on the analysis of texts, we can deduce that in Cameroon, documents defining education policy are a long way from operationalizing measures enabling the inclusion of girls in STEM subjects in higher education. The definition of the axes of promotion of girls in this field of study is the action taken in these different texts and programmes. There is insufficient implementation of methods and strategies (Eurydice, 2010). Some participants in this study, attribute the gender disparity in STEM subjects to shortcomings in educational policy. Although the strategies are well-developed, 'policies aimed at widening girls' choice of options have shown themselves to be powerless, so much so that they focus...' on the macro level (Duru-Bellat, 1995, p. 100). The issue of educational policy is not limited to Cameroon. A study carried about by Ndour (2018) shows that there is a negative link between the educational policy and gender equality policy in the educational system of Senegal. The educational policy related to gender is limited to the macro level.

According to Vouillot (2007), policy deficiencies on this issue of girls in STEM is the result of 'relatively low social demand'. This is in contrast to the findings of the official scientific and industrial baccalauréat examinations. These results highlight a higher success rate for girls than for boys in Cameroon. This high success rate lays the foundations for the demand for vocational training

in the aforementioned fields. In fact, the gender disparity observed in academic orientation and access to vocational courses (STEM) is an unprecedented phenomenon for the government, as it is supposed to be a normal phenomenon.

Generally speaking, the problem of under-representation of girls in STEM subjects in Cameroon, is also a problem linked to culture, family or individual factors. Although the vision of improving the representation of girls in STEM subjects is defined in some policy documents, its effective implementation remains a long-term vision. Nevertheless, it should be noted that the problem that arises is that of operationalizing and implementing the vision. Appropriate strategies have not been set up to monitor and effectively implement the vision to improve girls' access to male-dominated subjects.

In the medium term, the Ministry of Higher Education, the ministry responsible for University Institutes of Technology (IUTs), represents the tactical level or the level at which the government's stated policy is taken into account. The objectives set out and defined in the law governing higher education have not sufficiently mention operational strategies to promote science education for girls. Within the IUTs or at the operational level, insufficient measures have been taken to implement the objectives linked to improving girls' access to STEM subjects (DSSEF, 2013, Vision 2035). We can therefore conclude that it is important to bring about structural and institutional change.

Despite, government's efforts to incorporate the gender approach into the country's numerous official growth documents, there are a number of limitations in the operationalization phase. According to the NGP (2011, p.62), 'ownership of the gender approach and its translation into programmes remain insufficient', both in terms of methodological development and in terms of drafting in general.

The Ministry for the Promotion of Women and the Family highlights the fact that in the Poverty Reduction Strategy Paper for Cameroon, insufficient specific provisions have been made to take into account the concerns of women, men, girls and boys as integral dimensions in the formulation, implementation, monitoring and evaluation of policies and programmes arising from the PRSP (2003, pp.28-29**)**.The revision of this document, which gave rise to the DSCE, remedies this shortcoming. Within the framework of the needs defined in terms of assistance, this programme document takes gender into account. This can be seen in the issues relating to the schooling of young girls, awareness-raising and the effective consideration of the principle of gender equality, the development of women's resources in the electoral field, and equality in the decision-making process. This document also takes slight account of the effective development of STEM training courses. The issue of promoting girls in science, technology, engineering and mathematics is less of a concern.

However, the presentation of the planning work for the second phase of Vision 2035 by the Ministry of the Economy, Planning and Regional Development in 2019, highlights the need to enhance and promote STEM education and training in general. According to this work, the need to have competent industrial human capital is a prerequisite for achieving the status of a Newly Industrialised Country. A number of studies have shown that girls have the potential and ability to make a career in STEM fields (Wang & Degol, 2013; Stoet & Geary, 2018; Kasa-Vubu Zarak, 2020). According to these authors, girls are just as successful as boys in these areas of training.

Despite government's clear desire to promote girls' participation and training in STEM, findings reveal that the country's development programmes and policies have not yet been sufficiently taken on board and translated into practice. In order to achieve sustainable, effective, equitable and diversified human resource development (NGP, 2011, p.65), strategies to operationalize and mechanisms to implement the government's will in terms of education policy must be put into practice.

CONCLUSION

In conclusion, it is important to recall that Science, Technology, Engineering and Mathematics (STEM) represent the field of the new economy and the fields of development. Beyond the aspect linked to progress, STEM 'deserves to be explored in greater depth, given that mastery of science and mathematics will become increasingly in demand and will justify occupying the best-paid jobs'

(Kasa-Vubu Zarak, 2020). Cameroon's vision 2035 in itself as an emerging and industrialised country implies a high availability of skilled human capital capable of developing the mechanisms and strategies needed to put government policy into practice.

The analysis of Cameroon's educational policies and programme documents shows that the country is evolving with technological developments. Issues relating to the gender approach and the field of STEM are an integral part of the broad guidelines defined at macro level by the government through the various public policies in general and the nation's education policy. However, findings show that the definition of strategies and the implementation of practical actions are proving insufficient. The promotion of girls in scientific and technical subjects is not enough as seen in the various official documents analysed.

In view of the under-representation of girls in STEM education and training and the urgent need to increase the rate of human resources required to achieve this vision, Wang & Degol (2013) propose to encourage more girls to go into STEM fields. In the Cameroonian context, it is imperative to raise awareness and encourage girls to enrol in STEM fields, by granting scholarships and mobilising female role models in high schools. This encouragement will help resolve the paradox of the shortage of qualified human resources and the challenge of Cameroon's economic growth.

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