



EDUCATION AND SUSTAINABILITY, HOW SDG4 CONTRIBUTES TO CHANGE THE REPRESENTATIONS OF DEVELOPING ISSUES? THE CASE STUDY OF PAKISTAN

Faheem KHUSHIK¹⁺



Arnaud DIEMER²

^{1,2}University of Clermont Auvergne, France.

¹Email: faheemfani@gmail.com

²Email: diemera@aol.com



(+ Corresponding author)

ABSTRACT

Article History

Received: 27 February 2020

Revised: 30 March 2020

Accepted: 5 May 2020

Published: 22 May 2020

Keywords

Causal Loop Diagram
Education, quality education
Equitable education
Sustainable development
Sustainable development goals
SDG4.

Every nation state is struggling hard to improve the living standard of its people so that Pakistan is looking for its people. It is believed that education can bring long lasting and sustainable transformation or change in any society towards better living standards and improve socio-economic conditions. There is consensus among the majority of nations and academia that quality education with inclusiveness and equity is the only tool which can bring a desired change. Education has a very close relationship with the contemporary paradigm shift of education for sustainable development to create critical thinking mindset of the nation to create healthy minds. Literature on sustainability and education demonstrates a causal link with socio-economic development. Academia, society, researchers, scientists, industry and all folks of society are convinced that education is the key tool to bring a change from local to global level in order to curtail contemporary challenges human beings and the planet is facing. A system analysis approach is used to understand logical links among loops. The causal relationship is demonstrated in the form of a Causal Loops Diagram (CLD) reinforces the idea that education is not only a key driver for introducing more sustainability into the development process, it is also a set of leverage points that should be gradually removed. Therefore, it is understood that quality education is affected by multiple factors to achieve.

Contribution/Originality: This study contributes to understand the long quest to Education for Sustainable Development from Brundtland Report (1987) to SDG4 “Quality Education” (2015-2020). We use Pakistan’s case study to explain how Education and Sustainability change the representation of developing country.

1. INTRODUCTION

Pakistan is one of the worst affected countries in a long list of multifaceted global challenges such as poverty, education, illiteracy, climate change, terrorism, peace, pollution, environment, social security, tolerance, health, basic necessities so on. Many of these issues are directly or indirectly related to education, economic development and growth. During the previous review of educational policies of Pakistan (Khushik & Diemer, 2017) it was observed that most of the educational policies focused on two main aspects, economic development and character building of the nation. However, it is a dilemma for the country that it could not achieve any of these targets. Education is the prime need of the contemporary era of the country. It is considered as the only tool for the long-term development of the nation and country as a whole. It is widely accepted truth in the developed countries and evident that education transformed many societies (Mundy, Green, Lingard, & Verger, 2016). Many developed

countries' living standard is high in HDI because they invest all types of resources into the nation for the developing human capital. Investing in the generations is a productive business in the contemporary world and ensures safe, healthy and productive individuals as well as communal life. Ultimately education enhances the quality of life by improving socio-economic conditions of the country (Hannum & Buchmann, 2005). Legal framework is important for any nation state to operationalize educational objectives or vision or goal for provision of basic education up to a level to each and every citizen of the country. Similarly, provision of education to each and every citizen of Pakistan is mandatory for every individual but it remains challenging since inception of Pakistan. Although its first 1973 constitution guarantees every citizen access to basic education as a basic fundamental right. Before the 1947 education conference, the Government of India 1935 Act was adopted as an interim constitution of Pakistan as well as an education policy. During the year 2010, the Constitution has been amended, according to constitution of Islamic Republic of Pakistan's article 38(d) it is state's responsibility "to provide basic necessities of life such as food, clothing, housing, education and medical relief for all citizens, irrespective of sex, cast, creed or race". The Constitution also provides a basic right for literacy to minimize illiteracy in the country. Article 37(b) ensures that the state should "remove illiteracy and provide free and compulsory secondary education within a minimum possible period".

Not only Pakistan but globally it is mandatory for every country to provide access to basic quality education to each and every child of the nation according to different UN declarations. The state shall provide free and compulsory education to all children of the age of Five to Sixteen years" [Article 25-A]; Moreover, the article 26-1 of [Universal Declaration of Human Rights \(1948\)](#) (UDHR) also mentions the right to education, it states, "Everyone has the right to education. Education shall be free, at least in the elementary and fundamental stages. Elementary education shall be compulsory. Technical and professional education shall be made generally available and higher education shall be equally accessible to all on the basis of merit". But the statistics about education in Pakistan present a depressing picture; the official literacy rate is still 58% (Pakistan, 2019) and that too is characterized by wide male female and rural-urban disparities.

Education should be the priority of the country's development agenda. Without putting it on the top of the list, it seems challenging for the nations to achieve targeted objectives. However, it seems less of a priority in the budgets of Pakistan. Unfortunately, education remains a less priority for all governments, its evidence is all previous percentage of budget allocations for education in the last seven decades. Even after devolution through 18th constitutional amendments some ministries dissolved at federal level and handed over to provinces/regions according to the new amended constitution of Pakistan as a move to provincial/regional autonomy. However, budget allocation for the education sector throughout the country in all provinces is below from international commitment. Federal government usually reserved about 2.5% as an average of GDP for education sector in every yearly budget, according to World Bank data in year 2015 it was 3% (Pakistan, 2019) and so on as the provincial government except North West province of Khyber Pakhtunkhwa.

Pakistan's educational administration or management is divided into several horizontal and vertical tiers to manage it effectively. Although it proved to be a complex and inefficient administration to implement a national policy of literacy to educate each and every child in the country. Before the year 2010 since independence 1947, Education was managed or administered by the federal level government and it was national level responsibility therefore the national ministry of education was responsible to devise policies, programs, projects and budgets and to ensure the provision of education in public sector education from primary to higher level. After the 2009 national education policy, the federal government of Pakistan passed an 18th constitution amendment. This constitutional change devolved some national level ministries and division into provinces and one of the major ministries was education. Soon after this amendment provinces authorized to develop their own regional educational policies. Therefore, conceptually provinces/regions become more independent in ensuring quality issues of education. It is another debate whether all provincial/regional governments are competent enough or have capacity to manage decentralization especially education.

Pakistan's primary level public educational system is classified in five different tiers, starting from Primary school (grade or year 1-5), middle schools (grade or year 6-8), high school (grade or year 9-10, higher secondary (grade or year 11-12) and above is university level. Another parallel education type is religious education which is officially recognized education, which is called *Deeni* – a local word means religious education, commonly called the Madrasah system. There are two types of institutions which are key stakeholders and education service provider public (state owned) schools, colleges and universities and private institutions from primary to university level. Within the public and private education system, there is another distinction between them is the medium of instruction and education syllabus. Military also has their own schools, colleges and universities which also have different syllabus. Children of officers and other non-commissioned military go to schools which have the Cambridge (O and A) examination system as well as the matriculation system. Therefore, in Pakistan the educational system is not uniform which creates a difference among nations on understanding the social and other issues of the society and it creates an inequality between individuals. Pakistan's educational system is highly fragmented and segmented. As mentioned above a variety of educational syllabus, medium of instruction, examination pattern, curriculum, religious, private and public institutions... are the reasons of Pakistan's failed education system to produce a harmonized, peaceful, pluralistic, tolerant and sustainable society.

Federal government used economic objectives as a key driver for education. Although, it is another debate about why it could not fulfill its objective to achieve even economic growth. National curriculum was used by different political regimes for their own political purposes. Especially military dictators especially modified national curriculum of schools. Although provinces/regions have adopted other than the federal level curriculum. Some private schools follow the Cambridge school system where they are teaching entirely a different curriculum. It may be because of all these reasons the country failed to create a pluralistic society.

Another key driver of education in Pakistan is the zealous attitude of the nation towards war with neighboring countries, especially with India. Previous syllabus prepares military mind militia to prepare people for war with India. It also diverts the country's educational system from developing people by providing quality education to live a quality life. This type of approach diverts nations overall interests of development into unproductive goals.

Pakistan obliged the global community and signed the global agenda 2030 for the betterment of the people of Pakistan and the planet as a whole. Soon after acceptance of the challenge during the summit, the government of Pakistan unanimously adopted SDGs through its national parliament and started working on it. It establishes a separate sustainable development goals unit at federal/country level in order to create a focal point for coordination, data collection, information, research, policy formation, progress monitoring and mainstreaming the SDG agenda in order to recommend a framework of action to align next planning from local, national and global level. Pakistan as a state since inception took several initiatives for educational progress under different policy reforms, training programs, local and international conventions etc. Pakistan is a signatory of Millennium Development goals 2000, education for all initiative 1990, Dakar framework of Action 2015.

First challenge for Pakistan's educational system is accessibility of education. According to UNICEF an estimated 22.8 (UNICEF, 2016) million children aged between 5 to 16 years are out of school. Few reasons for not attending school are overall quality of education, facilities (water, sanitation, furniture, electricity, classrooms) accessibility to the children is also a hurdle, irrelevant curriculum, teachers rude or no friendly behavior, poverty because children support their parents in earning by doing labor work, unavailability of text books and note books etc.

Keeping this context and educational scenario of Pakistan where basic educational access is still very challenging for the country to achieve then it would be very difficult to achieve its targets for SDG till year 2030. This study addresses the SDG4 to understand the pattern of progress against SDGs in Pakistan. Therefore, in order to assess the status of SDG 4 and its progress against set targets this paper reviews the progress of the country and builds a future scenario to recommend a sustainable framework in order to achieve not only SDG

targets but transform its society to a sustainable society. In this paper, we explore the relation between Education and Sustainability through the objectives/targets of SDG4. This proposed a SDG4 scenario in order to assess, monitor and plan educational policy and programmes to achieve agenda 2030 targets.

2. EDUCATION, THE LONG QUEST TO SUSTAINABILITY

Education has often been presented as an important variable -human capital (Lucas, 1990; Romer, 1990) - of endogenous growth in most economists' work (Ozturk, 2001; Psacharopoulos, 1985). It is only since the Brundtland Report that it has been associated with the concept of sustainable development. The term Education for sustainable development (ESD) was first introduced in the year 1992 in the United Nations (UN) World Summit on Environment and Development in Rio de Janeiro. Since its inception, it remains on the global development agenda to address global sustainable development challenges. Later on, United Nations launched in the early 2000s an initiative to integrate the principles, values and practices of sustainable development (United Nations, 2004) into all the aspects of education and learning. The Decade of Education for Sustainable Development (DESD, 2005 to 2014) sought “to mobilize the educational resources of the world to help to create a more sustainable future”. Unesco is the lead agency for the DESD. Education for Sustainable Development is presented as a holistic and transformational education which addresses learning contents and outcomes, pedagogy and learning environment. It is an important part of the quality education that the United Nations introduced first into Millennium Development Goals (MDG 2 - Achieve Universal Primary Education) and then into Sustainable Development Goals (SDG4 - Quality education).

2.1. The Brundtland Report and Education Issues

The term sustainable development was first introduced in the Brundtland report in 1987. According to the definition, Sustainable Development ‘*Development that meets the needs of the present without compromising the ability of future generations to meet their own needs*’. This explanation stresses on the needs of future generations and sustainable utilization of resources in the present. In this report, many important areas have been discussed such as the concept of sustainable development, different approaches and strategies, economy, ecosystem, environment, education, food security, population etc. Although it did not focus on the educational perspective of sustainable development, the Brundtland report shared important issues related to sustainable development.

- (1) The report called for a common endeavour and for new norms of behaviour at all levels and in the interest of all. The changes in attitudes, in social values and in aspirations “*will depend on vast campaigns of education, debate and public participation*” (1987, Foreword of Gro Harlem Brundtland).
- (2) There are many feedback effects between Education, Population and Human resources. Rates of population growth compromise many governments’ abilities to provide education. Education improves the human potential to manage resources (education and training produce practical and vocational skills, reduce unemployment). It also gives women the choice to define the size of the family (family planning and contraceptives, social development programmes, female education), this *basic human right for self-determination* raises the status of women.
- (3) Education creates the conditions of fair society, equity and common interest: “*Sustainable development has been described here in general terms. How are individuals in the real world to be persuaded or made to act in the common interest? The answer lies partly in education, institutional development, and law enforcement*” (1987, p. 44).
- (4) Education introduces change in the content of growth, it takes into account the quality dimension: “*Sustainability requires views of human needs and well-being that incorporate such non-economic variables as education and health enjoyed for their own sake, clean air and water, and the protection of natural beauty*” (1987, p. 49). Money spent on education may raise human productivity.

- (5) Lack of education is part of a downward spiral in developing countries (high infant mortality, poverty). At the same, the growth in primary education doesn't stop illiteracy which is continuing to rise in terms of sheer numbers.
- (6) The understanding of the interactions between environmental processes and economic development requires educational programmes aimed to kids, students and adults. The report considers that: *“Environmental education should be included in and should run throughout the other disciplines of the formal education curriculum at all levels - to foster a sense of responsibility for the state of the environment and to teach students how to monitor, protect, and improve it”* (1987, p. 96).

Finally, the Brundtland report suggests a societal and economic transformation, the main task of education policy should be to make literacy universal, to close the gaps between male and female enrolment rates, to improve education in quality and in relevance to local conditions.

2.2. The Agenda 21 and the Crucial Role of Education

The crucial role of education in achieving sustainable development has been duly noted at the United Nations Conference on Environment and Development, held in Rio de Janeiro in 1992, through Chapter 36 of its outcome document.

Agenda 21 is a document which is a non-binding action plan and a product of a meeting in Rio de Janeiro in Brazil in 1992 prepared after a meeting of 178 nation states. The United Nations organized an international meeting in the follow up progress of Brundtland commission. It is also called the earth summit report. It was discussed as an agenda of global, national and local level for each participating country in the meeting to contribute in identified areas to protect people and the planet. Agenda 21 refers to its scope relating to upcoming challenges of the 21st century. Its aim was to achieve sustainable development at a global level by contributing from a local level. Its main feature was introducing global guidelines for every country who can create its local and national agenda according to its culture and context. Document consists of 40 chapters and four sections, its section first is about social and economic dimensions, section two conservation and management of resources for development, section three, strengthening the role of major groups and the last section is about means of implementation. It was the highest level global commitment of nation states to fulfill their responsibility to contribute in protecting planned and people. Agenda 21 was considered as a dynamic programme which has a wide scope of changes with the passage of time and evolved as a guiding document on sustainable development. This action plan focuses mostly on the environmental and economical perspectives of sustainable development. This dynamic document proposed the background or context of a specific area of improvement, its concrete objectives, activities and means of implementation so that the governments and civil society should act in a guided manner to achieve specific objectives in a specific time frame.

Education is discussed in chapter 36 of agenda 21. This document is relevant with this effort because it recommends certain means of implementation against each objective in all areas of improvement. This effort also suggests four major areas to implement education for sustainable development principles and objectives. First, promote and improve the quality of education, second, Reorient the curriculum, third, raise public awareness on the concept of sustainable development and the last one, about training the workforce or human capital. These four objectives provided significant grounds for building the next generation to act according to nature and sustain the future of human beings. Quality education which focuses on lifelong learning will ultimately improve quality of life and it's only possible when the teaching material or text focuses on the priority on sustainable development agenda issues. This effort is also focusing on such highly important issues to implement through a sustainable development agenda on specific target groups to contribute on a smaller level. ESD is about education and learning - engaging people in SD issues, developing their capacities to give meaning to SD and to contribute to its development and

utilizing the diversity represented by all people - including those who have been or feel marginalized - in generating innovative solutions to SD problems and crises (UNESCO, 2009).

2.3. Dakar Framework for Action on Education for All (2000)

The Dakar Framework for Action on Education for All (EFA) was adopted at the World Education Forum in April 2000. It reaffirms the vision of the World Declaration on Education for All (UNESCO, 1990) supported by the Universal Declaration of Human Rights and the Convention on the Rights of the Child: “*all children, young people and adults have the human right to benefit from an education that will meet their basic learning needs in the best and fullest sense of the term, an education that includes learning to know, to do, to live together and to be*” (World Education Forum, 2000). The achievement of EFA involves to reach different goals and targets : (i) expand and improve comprehensive early childhood care and education, especially for the most vulnerable and disadvantaged children; (ii) make sure that by 2015 all children, particularly girls, children in difficult circumstances and those belonging to ethnic minorities, have access to and complete, free and compulsory primary education of good quality; (iii) ensure that learning needs of all young people and adults are met through equitable access to appropriate learning and life-skills programmes.; (iv) achieve a 50 per cent improvement in levels of adult literacy by 2015, especially for women, and equitable access to basic and continuing education for all adults; (v) eliminate gender disparities in primary and secondary education by 2005, and achieve gender equality in education by 2015, with a focus on ensuring girls full and equal access to and achievement in basic education of good quality; (vi) improve all aspects of the quality of education.

If the Dakar Framework sets these six goals and proposed strategies to reach them, it insists also on the following three principles : (1) Education is a right and an inclusive concept, it imposes an obligation upon states to ensure that all citizens have opportunities to meet their basic learning needs : the education of girls remains a major challenge, especially in South Asia and Sub-Saharan Africa; (2) Primary education should be free, compulsory and of good quality : quantitative achievements tell nothing on the nature and quality of teaching and learning ; (3) the indispensable role of the state in education must be supplemented and supported by bold and comprehensive educational partnerships at all levels of society. ; the spread of democratic principles requires the growing contribution of civil society.

2.4. Johannesburg Plan of Implementation (2002)

In 2002 the representatives of 191 governments gathered in Johannesburg, South Africa for the World Summit on Sustainable Development (WSSD), with the aim of examining the progress made on the outcomes of the 1992 Earth Summit in Rio and also to reinvigorate the world's peoples toward true sustainable development. The participants in the Johannesburg Summit all reaffirmed their commitment to the Rio principles, the full implementation of Agenda 21 and the Programme for the Further Implementation of Agenda 21. They also committed themselves to achieve development goals contained in the United Nations Millennium Declaration.

The eradication of poverty was highlighted as the greatest global challenge facing the world and an indispensable requirement for sustainable development, particularly in developing countries. The different countries have been invited to develop programmes for sustainable development to increase access to productive resources, public services and institutions, in particular land, water, employment opportunities, credit, education and health ; to promote women's equal access to and full participation in, “*on the basis of equality with men, decision-making at all levels, mainstreaming gender perspectives in all policies and strategies, eliminating all forms of violence and discrimination against women and improving the status, health and economic welfare of women and girls through full and equal access to economic opportunity, land, credit, education and health-care services*” (United Nations, 2002). The challenge is significant: children are the agents of behavioural change, so national governments have to ensure that boys and girls will be able to complete a full course of primary schooling and will have equal access to all levels of education.

Education as training, capacity-building and skills enhancement are aimed also to promote the development of small and medium-sized enterprises, to develop awareness-raising programmes on the importance of sustainable production and consumption patterns, to provide information for the population about available energy sources and technology or to protect/manage the natural resources base of economic and social development. Finally, the JPOI called on the various governments to “*create and strengthen networks for science and education for sustainable development*” (United Nations, 2002) and to follow the recommendations proposed by the Dakar Framework for Action on Education for All.

2.4. United Nations Decade of Education for Sustainable Development (2005 - 2014)

Following the Johannesburg plan where education was taken as an indispensable element for sustainability, the United Nations designated its agency UNESCO to lead this initiative at global level. United Nations Decade of Education for Sustainable Development (2005 – 2014) (DESD) aimed at integrating the principles and practices of sustainable development into all aspects of education and learning, to encourage changes in knowledge, values and attitudes with the vision of enabling a more sustainable and a just society for all (UNESCO, 2014). UN DESD marked an essential milestone to achieve progress against a sustainable global society. Its goal was to integrate knowledge to protect people and the planet and live a healthy sustainable life as a being of planet earth. This document provides a foundation in the field of ESD. For the advancement and progress evaluation UN endorsed a Global Action Program to work. The initiative of decade of education for sustainable development is evidence in the domain of ESD which proves significant advancement at global level. By its vision, aim or purpose, objectives, approach and nature many nations states reported changes in legal structures, policies, priorities and pedagogies. Participatory learning, critical thinking and problem based learning approaches are taking importance in the field of education. DESD initiative was a successful evidence in implementation of the ESD agenda at global level by acting through local level. Key focus of the DESD approach was content and purpose of education at all levels. Its initial strategy was to create networking to expand the agenda to larger scale through networks. Along with the principal DESD initiative some other parallel platforms were introduced such as RCE (Regional centres of expertise) and GUPES (Global Universities partnership on environment and sustainability). It was designed in a broad scope and far-reaching effects on the countries especially developing countries in order to transform their whole educational system in accordance with ESD guidelines.

ESD empowers learners to take informed decisions and responsible actions for environmental integrity, economic viability and a just society for present and future generations, while respecting cultural diversity. It is about lifelong learning, and is an integral part of quality education. ESD is holistic and transformational education which addresses learning content and outcomes, pedagogy and the learning environment. It achieves its purpose by transforming society. DESD was considered as the most effective agenda for promoting the ESD objectives to achieve sustainability at a higher level.

The focus of the 2009 progress report prepared by the M & E Expert group was to track the progress and evaluate its achievement at the midpoint of the programme. The 2009 report was a mid-term review after five year of efforts on advocating the agenda of global challenges. Overall after this report it was observed that with the passage of time and starting from the initiative more and more people are in the surge of a sustainable world. It motivates the objectives of such initiatives to continue until a significant change in the world. It is because this programme will continue for the next five years.

Chapter three of the report of the DESD emphasis more on meaning of ESD to create a common understanding about the concept. Consensus on the definition of the concept is rather difficult but following the principles and purpose of ESD a common meaning can be derived. *ESD is a process of learning based on the principles of learning and practice about sustainability.* Five types of learning have been discussed in the report (UNESCO, 1990) such as learning to know, to be, to live together, learning to do and learning to transform oneself. Overall the concept of

ESD in the chapter is defining it as a dynamic concept by keeping its huge scope and flexibility to fit in every context, culture and country in the world.

On one hand, another important point is discussed in the report about the relationship between ESD and other adjectival projects or programmes such as global education, environmental education, AIDS education, Education for all, UN Literacy day as well as MDGs (Millennium Development Goals). Although, the objectives of these initiatives resemble the objectives of ESD. On the other hand, it creates confusion among practitioners about the clear scope of ESD because at one stage all of these domains interlinked and mixed with each other. It can be considered as the strength of ESD because its scope covers the majority of academic domains to rapidly influence at a greater level. It is also a reality that all issues are interlinked poverty and quality of life cannot be separated from quality education. This nature of challenges makes ESD a dynamic and wide scope approach to deal with all types of issues and challenges for people and planet in the present and future. It seems this approach is becoming a foundation in transformation of current policies to new policies to achieve sustainability.

On the onset of DESD, implementation of the agenda was a complicated and difficult task. UNESCO took advantage of its already in place networks, mechanisms and partnership to start implementation. Later on with the passage of time the UN established special mechanisms and frameworks in order to operationalize the concept of ESD within a decade.

Here it's interesting to discuss ESD integration in formal and informal educational policies around the world. Some countries implement it by integrating into curriculum, some by adopting certain activities in extra curricula activities. ESD in this report focused on primary and secondary formal education as an institution and target for integration of DESD agenda into every section and level of education schools. It also considers formal primary schools the way to cope with challenges human beings face at all times at global level. At the same time, it is also argued that sustainable development is adding more burden on the students through an already overcrowded curriculum. That was the key question reviewed during the review of DESD that how the education system integrates ESD agenda in a way that it can be a part of already in place curriculum, training and practice. Learning outcomes are important in ESD and what we are expecting from education to teach. Some learning outcomes were used to evaluate the progress of ESD in that particular decade. It is observed in this report that some poor regions stressed on some social issues such as peace, poverty, equality etc. Informal and non-formal education is also an important component of the ESD. Illiteracy is still a bigger challenge when about 10 million children remain out of school.

A very important and relevant discussion has been covered in the DESD review report in which is emphasis on continuing research on ESD to bring evident evidence to convince the countries which are lagging behind achieving targets in time to contribute to the cause. For the success of the ESD agenda UNESCO recognized research and key strategy along with other seven strategies. Therefore, this research is also focusing on a few of the focused areas of ESD such as policy review and learning. Review report highlighted some obstacles identified during the exercise by the key stakeholders that partners lack clarity about the concept of ESD and environmental education. Methods, content, curriculum, scope, funding and clear roles and responsibilities were also discussed in the report in order to expand the agenda at higher levels. It seems that similar challenges still exist in some countries where there is a need to define the concept and its scope of ESD to avoid confusion among people. It is recognized that non-governmental organizations and other platforms associated with and without UNESCO played a vital role in promoting ESD agenda besides the constraints of funding and other resources. Overall this report contributed to the clarity for the meaning, methods, research, development, approaches etc. for widespread understanding in the domain of sustainable development.

The previous report was a review exercise where we observe certain initiatives and challenges in order to pace up the agenda. In this stage, the decade of education for sustainable development was officially closed but its mission is still continuing until the achievement of the maximum percentage of the set target.

Higher Education Sustainability Initiative (HESI, 2015)

At the Rio+20 Conference, the Higher Education Sustainability Initiative (HESI) has been created as a partnership of several sponsor UN entities (UNESCO, UN-DESA, UNEP, Global Compact, and UNU). Over 300 universities from around the world joined the network and signed the TOR (Terms of Reference) intended to clarify the role and the responsibilities of the various actors involved in HESI. All the members of the network have been committed to work and promote implementation of the SDGs by supporting higher education in their pursuit of integrating sustainable development into teaching, research, curricula, outreach and sustainability practices by HESI (2018):

- 1° Teach sustainable developments across all disciplines of study, including through online based platforms.
- 2° Engage with students on campus and seek to represent and support their interests through the group.
- 3° Encourage research and dissemination of sustainable development knowledge.
- 4° Green campuses and support local sustainability efforts.
- 5° Engage and share information with international networks.
- 6° Outline an advocacy agenda that would see partners make contributions towards either systemic, sectoral or thematic issues relating to the SDGs with governments and other stakeholders.
- 7° Explore innovative practices from other sectors / Partners that seek to deliver transformative change around this agenda.

2.5. The Global Action Programme (GAP) of UNESCO (2014)

As a follow-up to the United Nations Decade of ESD (2005-2014), UNESCO launched the Global Action Programme (GAP) on ESD. The overall goal of the GAP is to generate and scale up actions in all levels and areas of education and learning to accelerate progress towards sustainable development. GAP has identified five priority areas to advance to ESD agenda: policy support, whole-institution approaches, educators, youth, and local communities. UNESCO has established five Partner Networks, each corresponding to the five priority areas, as one of its main implementation mechanisms of GAP. The Partner Networks will create synergies for the activities of their members and catalyse actions by other stakeholders.

Keeping the disasters situation of the planet earth where climate change, social inequalities, economic crisis, shrinking of natural resources and a long list of challenges convinced the global community to take decisive actions and convinced that education is the only tool which can contribute in the cause for long term sustainable development. The final report of DESD demonstrates some major steps in contributing and advancing the implementation of the agenda. It reorients learning, teaching, knowledge, information, communication, values, skills, decision making, mobilizing masses, creating awareness in all three dimensions of ESD social economic and environment. It is believed and observed during the decade long interaction of different stakeholders that the top leadership of every country seems convinced and committed to the cause which advanced in progress of achieving their agenda. This initiative also contributes in advancing the quality of education with reference to sustainable development. A solid foundation has been laid for ESD at the end of the DESD, achieved by raising awareness, influencing policies and generating significant numbers of good practice projects in all areas of education and learning (UNESCO, 2014).

Access to education is the major thrusts of DESD agenda and same is prioritized in this effort. It is prioritized because without the access of education in formal setup how could one realize the benefits of ESD. This article is focusing on the formal educational setup or institutions.

It is important to highlight and discuss how DESD transformed education which is evidence for the next step of planning and implementation.

The 2014 final DESD report highlights major trends and findings learned from the past one decade at different levels. It founds ESD as an enabler for sustainable development by shaping the vision for future generations.

Education and sustainable development agenda are reinforcing each other in all three dimensions of ESD social, economic and environmental. Many countries transformed policies, strategies, tools, education curricula etc. to achieve SD agenda. Partnership and political institutions observed instrumental in advancing educational agenda during the decade. Partnership was an observed key effective mechanism to implement the agenda on a large scale to achieve maximum objectives within the limited time frame. Formal education at primary and secondary level achieved significant progress towards agenda within ten years of duration. If this pace progresses, which is although a little slow in achieving objectives, it will bring significant contributions in the human present and future. Change reported by member states specially in transforming curricula and pedagogy. UNESCO observed encouraging evidence through the QME report to demonstrate progress in educational approaches all across member states and other countries of the world.

Overall UNESCO witnessed many challenges and obstacles in implementation of the ESD agenda at high scale. Some countries found it very responsive and interested in implementing ESD objectives, others seemed more reluctant to change curriculum and educational approaches. During the Decade, a variety of implementation strategies were reported from member states. Many initiatives and projects were introduced and implemented. One example is the Australian whole school approach which focused on four basic pillars for integrating ESD, governance policy and capacity building, community partnership and relationship, school facilities and teachers teaching and training and curriculum.

The Muscat Agreement (2014)

The growing international recognition of Education for Sustainable Development (ESD) as an integral element of quality education has been recognized by the MUSCAT Agreement (Global Education For All Meeting: Oman, 12 - 14 may) and the proposal for Sustainable Developments Goals (SGDs) developed by the Open Working Group of the UN General Assembly on SDGs (OWG).

The Muscat Agreement reaffirmed that “*Education is a fundamental human right for every person. It is an essential condition for human fulfilment, peace, sustainable development, economic growth, decent work, gender equality and responsible global citizenship*” (UNESCO, 2014). The post-2015 Education Agenda has to empower learners to take informed decisions and responsible actions for environmental integrity, economic viability and a just society see Table 1. Education must be a stand-alone goal in the broader post-2015 development agenda and be integrated into other development goals. The Muscat Agreement supported “*Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all*” and translated this goal into global targets.

Table-1. Overarching goal and global targets from Muscat Agreement.

Target 1: By 2030, at least x% of girls and boys are ready for primary school through participation in quality early childhood care and education, including at least one year of free and compulsory pre-primary education, with particular attention to gender equality and the most marginalized.
Target 2: By 2030, all girls and boys complete free and compulsory quality basic education of at least 9 years and achieve relevant learning outcomes, with particular attention to gender equality and the most marginalized.
Target 3: By 2030, all youth and at least x% of adults reach a proficiency level in literacy and numeracy sufficient to fully participate in society, with particular attention to girls and women and the most marginalized.
Target 4: By 2030, at least x% of youth and y% of adults have the knowledge and skills for decent work and life through technical and vocational, upper secondary and tertiary education and training, with particular attention to gender equality and the most marginalized.
Target 5: By 2030, all learners acquire knowledge, skills, values and attitudes to establish sustainable and peaceful societies, including through global citizenship education and education for sustainable development.
Target 6: By 2030, all governments ensure that all learners are taught by qualified, professionally-trained, motivated and well-supported teachers.
Target 7: By 2030, all countries allocate at least 4-6% of their Gross Domestic Product (GDP) or at least 15-20% of their public expenditure to education, prioritizing groups most in need; and strengthen financial cooperation for education, prioritizing countries most in need.

Source: Muscat Agreement (2014).

2.6. The Sustainable Development Goals (2015 - 2030)

United Nations general assembly resolution 70/1 approved Sustainable Development Goals (2015-2030) as follow up agenda of Millenium Development Goals (2000-2015) and a global development agenda with larger scope and scale then, the previous agenda to achieve global progress towards a sustainable future of people and the planet. This global challenge is a paradigm shift from the policy and planning to implementation of this agenda by aligning it with the national goals of countries' strategic plans. Its scope broadens its scale and engages almost all countries to incorporate objectives into planning policy to achieve goals on large scale.

These SDGs are an urgent call for action in a global partnership strategy. They address a simple message to developing and developed countries: the end of poverty and inequalities requires a holistic and systemic approach aimed at integrating issues related to water, energy, urbanization, transport, climate, technology, food, air quality, health, education...

3. SDGs ISSUES FOR PAKISTAN: TRANSFORMING THE SDGS INTO NATIONAL GOALS AND TARGETS

Pakistan obliged the global community commitment and signed the global agenda 2030 for the betterment of the people of Pakistan and the planet as a whole (Diemer & Khushik, 2020). Soon after acceptance of the challenge during the Paris summit 2015, the government of Pakistan unanimously adopted SDGs through its national parliament resolution and started working on it in February 2016 to become the first country to initiate the process of policy and planning at high level national forums.

Planning, Policy and implementation of SDGs in Pakistan

After experiencing challenges in the previous development agenda's (MDGs, EFA, Polio) or global issues fails to achieve the targets, therefore, this time Pakistan developed a national level SDGs framework to implement SDGs see Figure 1. It is discussed and approved at a high-level government policy and decision making forum. This framework provides a basic foundation for the baseline and indicators against each and every target to track, monitor and evaluate the progress. It is called the national SDGs framework which includes five critical pathways (CPW5) that would converge to reduce regional inequality by fostering inclusive and sustainable development. In this critical pathway, strategy a comparative criteria model was adopted to prioritize SDG targets. Width, depth, multiplier, level of urgency, low structural change is required, low resources required and relevance for the provinces. Major regular data collection instruments have been modified and aligned with the new tracking target and reporting against targets. Apart from the above discussed framework, there are a number of other initiatives that have been taken since 2015 to address the global agenda.

SDGs are as important as the future of Pakistan because all SDGs are targeting contemporary challenges which are similar to Pakistan and human beings are facing all around the world. Change of policy and enabling environment was considered as the first step in achieving the agenda 2030. Below section is discussion about the first step of policy guidelines regarding SDGs. Pakistan addressed all 17 SDGs in resolution passed in its national assembly on 16 February 2016 by giving it a legislative initiative but keeping its internal context and limited resources in mind, it prioritized the SDGs to achieve targets. Gradually Pakistan started working on all SDGs targets on a regular basis to map the implementation challenges. Below is the brief discussion on the progress of Pakistan on mainstreaming SDGs into its planning, policy and implementation. According to an official report of voluntary national review (Pakistan's implementation of the 2030 agenda for sustainable development) (Pakistan's, 2019) introduced four means of implementation:

1. Institutional mechanism for the SDGs.
2. Localizing the goals.
3. Monitoring and reporting mechanism.
4. Critical challenges.



Figure-1. Sustainable development goals and targets.

Source: National SDGs framework for Pakistan 2018.

For addressing the first mean of implementation establish institutes to deal with the SDGs, Pakistan’s government established separate desk/unit/institute for sustainable development goals as a unit at federal level in the capital of the country Islamabad in order to create a focal office for, planning, communication, coordination, cooperation, data collection, information sharing, research, policy formation and mainstreaming the SDG agenda in order to recommend framework of action to align next planning from national to local level. This was established as a separate desk/unit/institute for all above tasks because of non-achievements and learning from the challenges and failures in achieving MDGs targets. This desk has a diverse group of experts on various fields to provide policy advice to the government in order to align planning with SDGs targets.

Another report (SDG-4, 2017) mentioned three priority areas according to the UNDP recommended approach to mainstream the SDGs in national level agenda. These are Mainstreaming, accelerating and policy support. In this approach giving more understanding on mainstreaming by establishing institutional mechanisms. With the help of the UNDP ministry of planning, development and reform and planning and development departments in the provinces/regions launched a joint five years’ project “national initiative for sustainable development goals” to institutionalise 2030 agenda for coordination and implementation.

The Ministry of federal education and professional training (MoFEPT) is an umbrella organization which is responsible for planning, implementation, reporting, communication, coordination, development and dissemination among other regions/provinces educational departments and ministries. The SDG unit works under this ministry jurisdiction and domain.

Since late 2015, Pakistan has been struggling to develop a framework of action to mainstream SDGs agenda into its next planning for the future for the whole country. Pakistan has already a vision 2020 to 2025 plan for the development of the country. However, this plan is reviewed by the ministry of planning, development and reform in order to align its objectives with the SDG agenda. The state of Pakistan owns this global agenda and considers it as its national development agenda but there are some priority areas in the context of Pakistan which are more important for Pakistan. Taking all stakeholders on board, creating new ventures of public private partnerships, policy reviews etc.

In December 2017, the federal SDG unit prepared a first data reporting gap report in order to create a baseline benchmark. This baseline will be followed for next planning. Initially, it was a complex and multi-layered exercise in a country like Pakistan where there are several horizontal and vertical tiers involved in the process of development. SDGs were selected on the basis of urgent importance. On the next step review of policies, plans, theoretical and empirical exercise was done and found that the key issue is availability of data. This data gap demonstrates a huge unavailability of information on several SDGs. Some of the targets of education have data but unreliable and other targets such as 4.7 have no data. After this report SDG unit decided to develop a list of recommendations to the government departments to make modifications in some regular state level surveys to collect information on the progress against SDGs on a regular basis. Since then all relevant government official departments such as Bureau of Statistics, state bank of Pakistan, finance ministry, ministry of educational planning and development and federal SDG support unit gathering data on a regular basis to monitor and track progress against all targets. Therefore, the Government of Pakistan aligned the 12th five-year plan in accordance with the SDG agenda to reflect its commitment with the purpose. *Pakistan has designed a comprehensive National SDG Framework which was approved by the National Economic Council (NEC), the country's highest economic policy-making forum, in March 2018. This Framework sets baselines and targets for SDG indicators and will feed into the SDGs' Monitoring and Evaluation Framework. The framework is now guiding the provinces and federally administered areas to determine their development priorities, based on local needs (SDG-4, 2017).* Further, to institutionalize the agenda, thematic clusters and technical committee formulated at district level to channelize the priorities according to SDGs. Overall Pakistan established a mechanism starting from legal framework, planning, implementation, monitoring evaluation and reporting.

Apart from legislation, planning, designing frameworks, projects, plans, reporting etc. raising awareness is also taken as another front to mobilize masses in order to create ownership of agenda. In 2017 the local government representatives summit was one of the forums. Civil society, academia and all other stakeholders and segments of society taken on board to spread scope and sharing roles and responsibilities in order to rapid results. Following section focuses on only one SDG about education SDG4.

SDG4 implementation challenge

The following SDG4 statement demonstrates an aim for the global community to achieve educational targets for every individual on the planet. Goal 4 is comprehensive, holistic, ambitious, aspirational and universal, and inspired by a vision of education that transforms the lives of individuals, communities and societies, leaving no one behind (SDG-4, 2017). SDG4 is a common cause to address unfinished agenda of previous global targets for education such as MDG2 and EFA. Its approach is rights based focusing education as a basic human right. Objectives is to include every person without any discrimination of race, religion, sex, age, color ethnicity, language, political affiliation, origin, birth and culture etc. Another feature of this target is that it is an universally owned aim. It is also important that it is widely seen within the context of development. This is why this target is relevant and important for the context of a country like Pakistan, because it is a diverse country in all above characteristics therefore it is owned and tried to be implemented locally. Another characteristic of this aim is to include all tiers of education, formal, non-formal and informal, but this effort only focuses on formal education because of its wider scope and scale. In implementing the new agenda, the focus should be on efficiency, effectiveness and equity of education systems.

“Ensure inclusive and equitable quality education for all and promote lifelong learning opportunities for all”.

To further make the aim achievable the agenda 2030 document contains it's seven sub-targets in order to make it more feasible, measurable and achievable.

3.1. By 2030 Ensure that All Girls and Boys Complete Free, Equitable and Quality Primary and Secondary Education Leading to Relevant and Effective Learning Outcomes.

Keeping the focus and clarity here, this effort specifically addresses only the first target because without entry in the educational institute in other words access, achieving SDG 4 targets are impossible. Equity and inclusion are two basic components of SDG4.

All provinces/regions and areas of Pakistan legally incorporated and achieved targets at legal level to mainstream SDG4.1 in the legal educational framework. "SDG 4.1 Policies and legislation that guarantee at least 12 years of free, publicly funded, inclusive and equitable quality primary and secondary education (SDG-4, 2017)". According to Pakistan's SDG4 gap analysis report 2017, all regions, provinces started legislation after national assembly resolution. Already in places education sector plans, policies, projects, programmes aligned with the SDG4 objectives except, northern areas and Azad Jammu and Kashmir. Although all responsible institutes were regularly guided from federal and provincial SDG units in order to align all official planning, implementation and data collection documents with agenda 2030 targets.

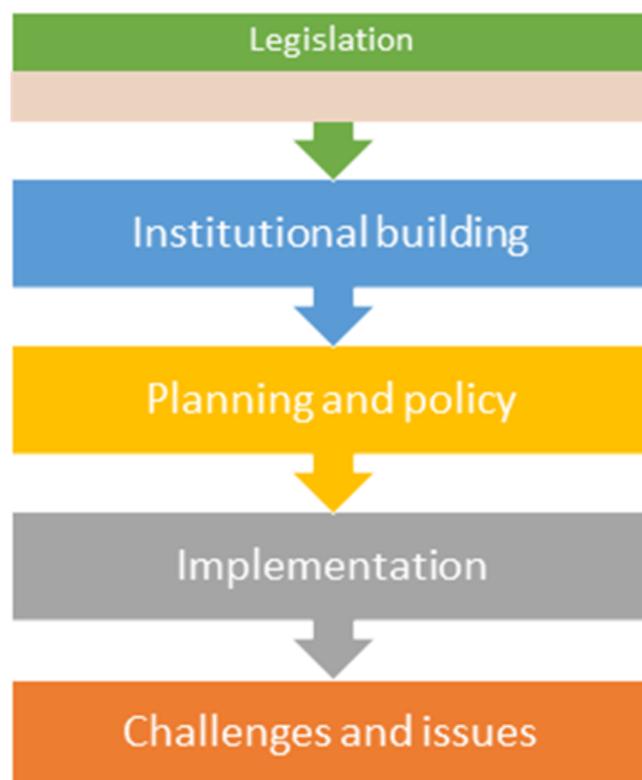


Figure-2. Institutional process to challenge SDG 4.

On the educational front Pakistan faced and still faces lots of internal, external, local, national, global challenges and issues in implementation of SDG4 agenda throughout the country see Figure 2. Many of these challenges and background history are already discussed above for example, its dynamic nature, multicultural context, poor socio-economic status, all types of disparities, inequalities, corruption and so on. Another long list of issues is discussed in detail above in the introduction section. Similarly, SDG4 has identical challenges to achieve targets in a given time frame in a proper manner.

An approach recommended in the Incheon framework of action 2015 that Building on the lessons of EFA and the MDGs, states should invest in and scale up innovative, evidence based and cost-effective approaches that enable all individuals to gain access to, participate in, learn through and complete a quality education, with a special focus on those who are the hardest to reach in all contexts (SDG-4, 2017).

Strengthening policies, plans, legislation and systems, emphasizing equity, inclusion and gender equality, focusing on quality and learning, promoting lifelong learning, addressing education in emergency situations.

Table-2. Main streaming SDG 4.1 target in regions/provinces.

SDG 4.1	Balochistan	KP	Punjab	Sindh
Policies and legislation that guarantee at least 12 years of free, publicly funded, inclusive and equitable quality primary and secondary education.	Provincial legislation enacted guaranteeing 10 years of free, publicly funded education.			
Define standards and review curricula to ensure quality and relevance.	National standards and curriculum developed.			
	Curriculum Implementation Framework and capacity assessment; quality textbooks.	Omitted from current ESP.	Includes development of standards for curriculum review.	Emphasis on research-based and contextualized curriculum, with curriculum authority, Curriculum Implementation Framework.
More robust, comprehensive assessment systems to assess learning outcomes.	Shift towards critical skills assessment and developing capacity to conduct diagnostic assessment.	Omitted from current ESP.	Review assessments for curriculum-based assessments; assessment for system diagnosis.	Focus on formative assessment and improved examinations. Curriculum-based assessment.
Strengthen institutions, school leadership, and governance.	Develop supportive political leadership, decentralized governance and managerial efficiency.	Improved data and developing district level management skills.	Strengthening management especially in rural areas.	Capacity building of head teachers and district planners, improved monitoring. Induction training for head teachers.
Alternative modes of learning and education for out of school children and adolescents.	Develop policy framework, expand programmes and build capacity.	Not included.	Develop formal linkages between NFE and education departments.	See SDG 4.6.
Foster bi and multilingual education.	Develop school language policy and capacity to teach in mother tongue.	None, but there is debate in the province on English vs mother tongue education.	Language policy balancing Urdu and English.	Sindhi and Urdu language education already exists.

Source: SDG4 gap analysis report (2017).

SDG 4 is as important as the other SDGs of the 2030 agenda however Pakistan's approach for targeting these SDGs especially through education is believed to be committed with the promise made in Paris conference 2015. As

it is discussed above in the section of education and sustainability where we have observed a long history of debate and discourse on education for sustainable development. Research proved that there is consensus among all folks of life that education, especially quality education which focuses on values and principles of ESD is the long term sustainable solution of the contemporary challenges human beings are facing. It is considered as the only solution for the challenges human beings are facing at the moment and in the near future. Therefore, Pakistan's approach to education and SDG4 is also prioritized in the national SDG goals framework for short-term national goals to achieve results as per set time frame.

Apparently, literature and educational policies and plans demonstrate similar thinking in decision makers of Pakistan. New National Education Policy and National Curriculum Framework laid the foundations for the achievement of this SDG target (SDG-4, 2017). Although a cycle of problems and challenges and its interconnected nature among each other emphasis more on education because it is the only tool which suggests long term sustainable solutions for many problems of Pakistan is facing today. This school of thought believes that focusing and prioritizing education can bring a sustainable transformation in the society as a whole. Therefore, keeping this thought in observation, the UN widened the scope of SDGs and included many other topics to address the global challenges. Although it is a challenge for the state to operationalize the SDG4 objective from policy/agenda to practice. Following table of framework from the national SDGs framework technical guidelines suggested one of the pathways to achieve agenda 2030 along with education on top of the priority in the short-term national goal.

With regards to achieving targets of SDG4, Pakistan is facing severe challenges, 22 million children aged 5 to 10 years are out of school, access to education is still a major challenge, along with it, there are many internal and external challenges and issues such as corruption, infrastructure (basic facilities - building, furniture, stationary, electricity, water and toilet), inequalities, disparities, quality curriculum, qualified teachers, teachings methods, conducive environment, budget and so on etc. Apart from these internal educational challenges, some external challenges are poverty, illiteracy, cultural barriers, unawareness about education, political interference etc. Along with these issues, the education sector in Pakistan is one of the heavily focused areas along with some other SDGs. The greatest number of legislative frameworks relate to SDG 16 ('Peace, Justice and Strong Institutions'), SDG 8 ('Decent Work and Economic Growth') and SDG 4 ('Quality Education') (Pakistan, 2017; Pakistan, 2019). Keeping the above discussion and Pakistan's context as a case study in mind, this study focus only on the first ESD thrust of improving access to quality basic education (Diemer, Khushik, & Ndiaye, 2020) and attainment, which is a one of the greatest challenges for Pakistan's primary level education and simultaneously the primary target of SDG4 in agenda 2030. To achieve 2030 targets of education, here we only discuss access to education because it is the primary reason for education in Pakistan also, without attending an educational institute, it will be impossible to achieve the ultimate objective of education for sustainable development and overall SDG4.

Therefore, ESD put access to quality basic education on top of the priority list. If millions of children are out of school, then talking about ESD significance is useless.

Figure 3 presents the dynamics of bad quality of education in Pakistan. We use here System thinking and Causal Loops Diagram to enlighten the loops (R1, R2, R3, R4) which reinforce the bad quality of the education system and the loops (B1, B2, B3, B4, B5, B6) which balance the system. These last loops identify the relevant driving forces to change the system and induce a higher quality of education. This is the systemic challenge of SDG4 for Pakistan.

Loop R1 describes a well-known causal chain in developing countries. Growth in economic activity (GDP) is challenged by growth in population. GDP/capita declines, which increases poverty and inequality. The quality of education deteriorates, this effect is reinforced by three other loops, loop R2 which results in an increase in the number of children per class, loop R3 which integrates the consequences of climate change on teaching conditions (higher temperature in infrastructures), loop R4 which specifies that an increase in poverty leads to a decrease in the quality of education.

It is possible to balance these effects via loops B1, B2, B3, B4 and B5. Loops B1, B4 and B5 relate more specifically to an improvement in the status of women. Loop B1 includes a mechanism for regulating the population through family planning and information on women's rights. Loop B5 relies on micro-credit to develop women's economic activities (entrepreneurial status) and enable them to access bank loans. Loop B4 introduces the idea that the existence of school canteens promotes the emancipation of women and the presence of children in school. Loops B2 and B6 consider that the State must invest in school infrastructure in primary and secondary schools, but also in higher education (an increase in the birth rate will result 18 years later in a massive flow of students to university). This public investment must also take the form of teacher recruitment, which could reduce the number of children per class. It should be noted that the recognition of a real status for women (B3) can only improve girls' access to school.

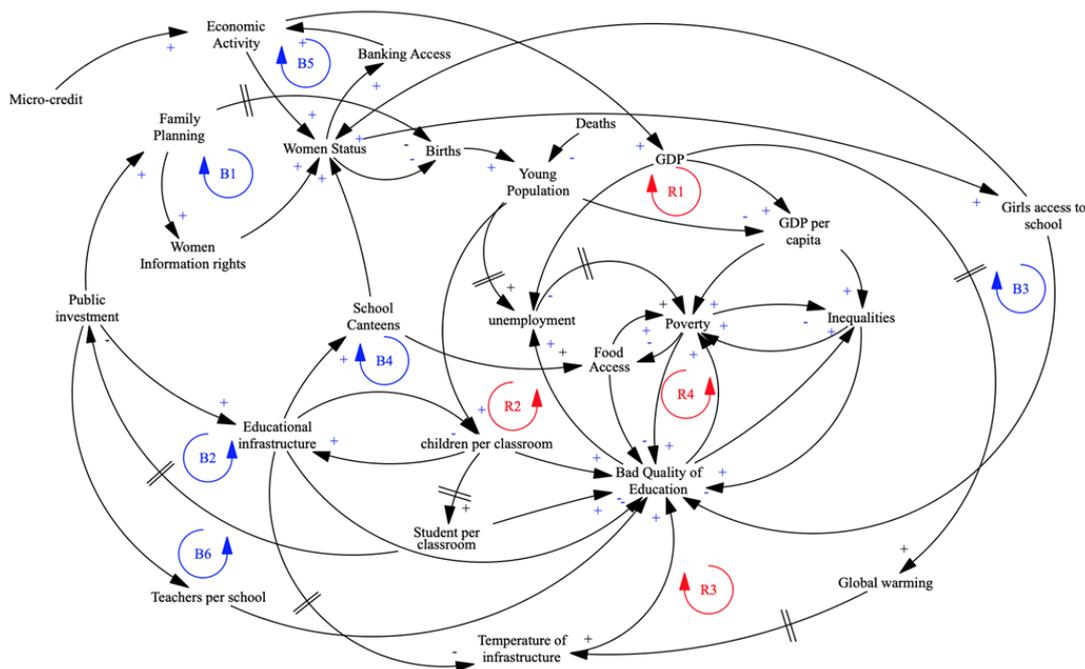


Figure-3. The dynamics of bad quality education.

This presentation in the form of a Causal Loops Diagram (CLD) reinforces the idea that education is not only a key driver for introducing more sustainability into the development process, it is also a set of leverage points that should be gradually removed. The identification of these leverage points is the condition for improving the quality of education in Pakistan.

4. CONCLUSION

UNESCO's best suited statement about importance of quality education which said that "education is at the heart of the 2030 Agenda for Sustainable Development and essential for the success of all SDGs (UNESCO, 2015)". In the literature and previous global targets and plans emphasis on education as an indispensable tool to achieve progress in many ways such as global citizenship, responsible and productive citizens, critical decision making minds, a generation living with peace and harmony with nature etc. In this effort, sustainable development goal 4 is thoroughly reviewed and assessed in the context of a country which is dynamic and unpredictable in many means. Apparently, Pakistan is still struggling to manage progress in the educational front, at least to attract pupils to access education. Some similar factors such as GDP, poverty, basic facilities, and teacher quality etc. are reportedly challenging to achieve the agenda 2030 objectives. Outcome can only be possible when we put relevant and enough input. It is understood by the CLD diagram that education is a key tool to achieve educational targets.

Funding: Research article has received funding from the European Union's Jean Monnet Program (ERASMUS +).

Competing Interests: The authors declare that they have no competing interests.

Acknowledgement: Both authors contributed equally to the conception and design of the study.

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