SDG 4 "Quality Education", the Cornerstone of the SDGs: Case Studies of Pakistan and Senegal

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Abstract:

In fifteen years, sustainable development has become embedded in national strategies and the reports of major international institutions (OECD, World Bank, UNDP, etc.). It is expressed both in the context of education for sustainable development (UNESCO Decade for education and sustainable development 2005-2014) and in the context of indicators which can measure the progress achieved. The MDGs, and now the SDGs, continue to be the subject of particular attention. States are trying to achieve the targets set by the 17 MDGs by 2030, the UNDP aims to help countries which have difficulty staying on course, and NGOs are working to understand the challenges associated with these new goals. Among the SDGs, SDG 4 Education Quality is of the highest importance. Beyond the fact that education is a key variable in a country's development, SDG 4 is positioned as a key factor for change, a change which is more qualitative than quantitative because it assumes that sustainable development (and its education) leads to real changes in individual behavior.

Keywords: Climate change, Education, OMD, SDG, Poverty

In January 2016, the United Nations officially launched the 2030 Agenda for Sustainable Development. This action program, based on the 17 Sustainable Development Goals(SDGs), presented the main challenges facing the world over the next 15 years. It was to be "a roadmap for individuals and the planet [aimed at] building on the success of the Millennium Development Goals, the famous MDGs and ensuring sustainable economic and social progress throughout the world" (United Nations Report, Foreword by its Secretary-General, Ban Ki-Moon, 2016, p. c2). Unlike the MDGs, which were presented as prescriptions from the North to the South, the SDGs are intended to assess the current global situation, provide an overview through statistical methods and indicators (OECD, 2016), and identify the strengths and weaknesses, constraints and opportunities, specific to each country, and to coordinate efforts by placing them in a global context. The SDGs are neither incentive nor binding (no penalties for countries that did not apply them), they should just be integrated into States' sustainable development policies and national action plans (IDDRI, 2016). However, due to their interdependence, complexity and systemic framework, the SDGs can pose a number of challenges in the implementation of public policies, as highlighted in the latest United Nations report (2017): "This report shows that the pace of progress in many areas is much slower than necessary to achieve the targets by 2030" (United Nations report, Preface by its new Secretary-General, Antonio Guterres, 2017, p. 2).

In this paper, we focus on SDG 4 Quality Education, and seek to link it to the other SDGs, in particular SDG1 Poverty, and SDG 13 Climate change. The aim is to identify the ambition and "performance" scope of the 17 SDGs, by comparing them to the 8 MDGs and by initiating a discussion on education for sustainable development (with reference to the Decade for education for sustainable development, 2005-2015, launched by UNESCO). This should enable us to examine the challenges related to SDG 4EducationQuality -that is the place of education in primary school, wider and more equitable access to technical and vocational education and training, lifelong learning, and the better living together embodied in the values of sustainable development, but also to identify the main characteristics associated with the SDGs (primary school, low-income countries, developed regions, adult education)

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as well as the challenges in terms of educational policies (education processes, fundamental knowledge, socio-economic inequalities and gender discrimination).

In this paper, SDG 4 will be illustrated via the ESD policies promoted in Senegal and Pakistan, and by placing SDG 4 in its systemic and pedagogical dimensions in order to analyze the challenges in terms of educational policies. As such, we will establish links with other SDGs in order to identify the challenges in terms of education for sustainable development, education for climate change and education for citizenship and international solidarity. Our two case studies will use as a common thread, SDG 4and SDG 13 with reference to Senegal, and SDG 1 and SDG 4 with reference to Pakistan.

Finally, this paper aims to question the relevance and operationality of SDGs in order to identify different scenarios in terms of educational policies and education for sustainable development.

1. The long Road to Education for Sustainable Development

In fifteen years, education for sustainable development has succeeded in establishing itself in the educational landscape to the point of generating a profusion of official texts, both national and international, which recommend its implementation (Diemer, Girardin, Marquat, 2015). Resolution 57/254 adopted by the United Nations in December 2002 entrusted UNESCO with the task of leading the United Nations Decade of Education for Sustainable Development (UNDESD). In its international implementation plan for the UNDESD (2005), UNESCO defined education for sustainable development as follows: "*Education for sustainable development is the integration into teaching and learning of key themes of sustainable development, such as climate change, natural hazard prevention, biodiversity, poverty reduction or sustainable consumption. It involves the adoption of participatory pedagogical methods to motivate and empower learners to change their behavior and become actors in sustainable development*". That is why education for sustainable development promotes the acquisition of skills which enable learners to develop their critical thinking skills, imagine future scenarios, and make common decisions. The authors of the plan did not hesitate to be provocative in concluding that education for sustainable development implied "*a profound change in teaching as it is generally practiced today*". In parallel with this UN initiative, the scientific community mobilized to define, conceptualize and lay the foundations for education for sustainable development (Diemer, Marquat, 2014). We propose here to retrace these two stories to identify the challenges posed by the Sustainable Development Goals (SDGs).

1.1 Education for Sustainable Development, a United Nations Program

In the 2000s, the implementation of "education for sustainable development" in primary, secondary, and higher education programs took place at several levels: international institutions (UN, UNESCO) adopted a series of resolutions; the OECD, through its Commission, designed a general framework of proposals; various states implemented actions to integrate ESD into their national education strategies. Thus, in line with the Brundtland Report (1987) and its definition of sustainable development - "sustainable development is defined as development that meets the needs of the present without compromising the ability of future generations to meet their own needs" - ESD was conceived as a political project to promote the vision of sustainable development and to highlight the role of education in the transition to ESD (Ndiaye, Khushik, Diemer, Pellaud, 2019).

1.1.1 *The United Nations Decade of Education for Sustainable Development (UNDESD)*

The United Nations Decade of Education for Sustainable Development (2005-2014) - and its corollary, the new Post 2015 Roadmap - has played an important role in popularizing this education in both North (Diemer, Marquat, 2014) and South (Diemer, 2015) countries. The UNDESD completed a series of texts (Chapter 36 of Agenda 21, article 124) adopted at the United Nations Conference on Environment and Development (Rio de Janeiro, June 1992) and the World Summit on Sustainable Development (Johannesburg, September, 2002). UNESCO was entrusted with the responsibility of leading this Decade and developing a draft international implementation program. Three areas received particular attention: sustainability issues, the role of values, and the links between different United Nations initiatives.

- Education for sustainable development must prepare "*people from all over the world to forecast, challenge to and find solutions to issues that threaten the sustainability of our planet*" (UNESCO, 2005, p. 7). Most of these issues were addressed at the Earth Summit (Rio de Janeiro, 1992) and then redefined at the World Summit on Sustainable Development (Johannesburg, 2002). These include the problem of access to water (source of conflict), the energy issue (more specifically the slow implementation of renewable energies), biodiversity (definition of property rights in the face of

bio-piracy activities by major pharmaceutical groups in the South), and health (many populations exposed to malaria and AIDS).

In point 5, the Johannesburg Declaration recalls that all these issues are the responsibility of States, are on a spatial and temporal scale, and refer to three pillars of sustainable development - environment, society, and economy: "As such, we assume our collective responsibility to advance at the local, national, regional and global levels economic development, social development and environmental protection as independent and complementary pillars of sustainable development". The action plan detailed in point 11 of the same declaration, specifies that "the eradication of poverty, the adaptation of consumption and production patterns, as well as the management of the stock of natural resources necessary for economic and social development are key objectives of sustainable development, and are also its preconditions". The field of sustainability is thus both complex and multifaceted (waste management is mixed with the defense of human rights, poverty reduction, population migration, climate change, etc.). To address all these issues, it would be necessary to implement innovative educational strategies that could bring about profound changes in citizens' behavior.

- To trigger this change in mentalities and move into the twenty-first century, States had to rely on the values that have forged their identities. The challenge of education for sustainable development does not mean making a "clean sweep" of history and culture, confronting traditional society with techno-society, but understanding a States' own values, those of the society in which we live, and those of other societies. This is an essential aspect of education for sustainable development, "each nation, each cultural group and each individual must acquire the capacity to recognize their own values and to evaluate them in the context of sustainability" (UNESCO, 2005, p. 8). It is difficult to draw up an exhaustive list of values, a certain number of them refer to ideas of justice (human rights, equity, equality), respect (for others, for nature), emotions (sympathy, empathy, apathy), principles (participation, solidarity, precaution, responsibility). In addition, there could be a lengthy discussion on the values that should be introduced into educational programs. Education for sustainable development emphasizes above all the question of the transmission of values, this intergenerational heritage must enable us to identify locally relevant and culturally appropriate values, which leads to the fourth pillar of sustainable development, culture.

- Education for sustainable development must be placed among UNESCO's other initiatives. These include the Millennium Development Goals (MDGs), Education for All (EFA) and the United Nations Literacy Decade (UNLD). All these initiatives include basic education, wishing both to extend it to all continents (especially Africa) and to improve its quality.

Table 1: Programmes and Goals from UNESCO

Programmes	MDG	EFA	UNLD	ESD
Goals	**8 Goals** 1. Eradicate extreme poverty and hunger 2. Achieve universal primary education 3. Promote gender equality and empower women 4. Reduce child mortality 5. Improve maternal health 6. Combat HIV/AIDS, malaria and other diseases 7. Ensure environmental sustainability 8. Establish a sustainable partnership for development	**6 Goals** 1. Expand and improve all aspects of early childhood care and education. 2. Ensure 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. 3. Ensure that the learning needs of all young people and adults are met through equitable access to appropriate learning and life-skills programmes. 4. Achieve a 50% improvement in levels of adult literacy by 2015, especially for women, and equitable access to basic and continuing education for all adults. 5. 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. 6. Improve all aspects of the quality of education and ensuring excellence of all so that recognized and measurable learning outcomes are achieved by all, especially in literacy, numeracy and essential life skills.	**3 Goals** 1. Mobilize a stronger commitment to literacy; 2. Strengthen the effectiveness of the implementation of literacy programmes; 3. Mobilize new resources for literacy.	**4 Goals** 1. Facilitate networking, linkages, exchanges and interactions betweenESD stakeholders, 2. Contribute to improving the quality of teaching and learning in education for sustainable development, 3. Assist countries to make progress towards the achievement of the Millennium Development Goals through efforts on education for sustainable development, 4. Provide countries with new opportunities to integrate education for sustainable development into their education reform efforts.

ESD is central to UNESCO's initiatives, as it is not limited to the educational field alone. Indeed, it refers to the social, cultural and institutional fabric of each country. It emphasizes the values and principles conveyed by sustainable development. It leads to a profound reform of teaching practices. Finally, it introduces the participation of partners at all levels (local, regional, national, international) and from all spheres (governments, civil society, NGOs, private sector). The concepts of governance and stakeholders thus emerge as the 5th pillar of sustainable development. At the national level, ministries of education provide a policy framework for ESD (formal education) and mobilize resources (including providing teachers and trainers with the knowledge and information needed to put ESD into practice); NGOs facilitate exchanges on good practices (informal education); the media work to raise public awareness of sustainable development and ESD, etc.

The overall assessment of the actions carried out during the United Nations Decade of Education for Sustainable Development has not yet been made, but initiatives from countries in the South have revealed some key points (UNESCO, 2014).
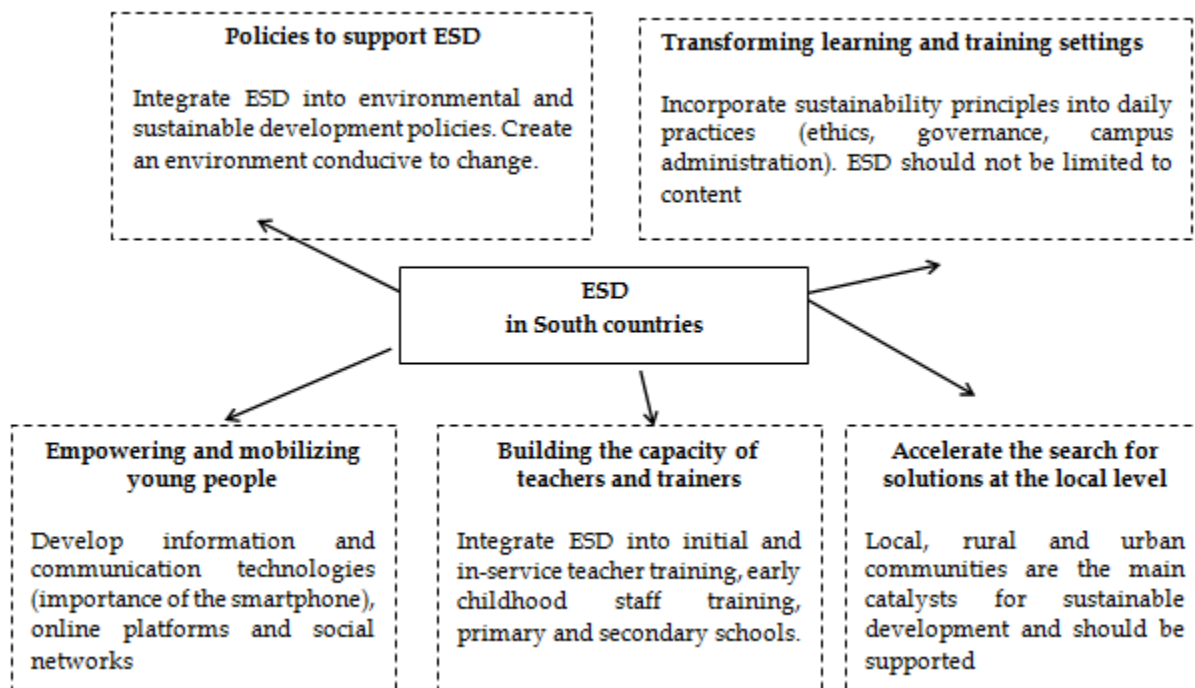
(i) Education for sustainable development has stimulated teaching innovation. Education policies (including curriculum reform) have encouraged learning for sustainable development in many countries, from early childhood education to training in the private sector. Siraj-Blatchford (2014) referred to the Matarajio project in the Rift Valley (Kenya), which was based on the ecological legacy of Wangari Maathai, an environmental activist and Nobel Peace Prize winner. Children were able to learn and exchange information about environmental issues, while participating in various practical activities on the appreciation, preservation, and management of woodlands. Ackbarally (2013) noted that nearly 250,000 primary and secondary school students in Mauritius were learning about climate change and the environment. Finally, higher education is not to be outdone, the regional network Integration of Environment and Sustainability into the African University Partnership Program (MESA) brings together 77 African universities in 32 African countries.

(ii) Sustainable development education succeeds in investing and bringing together all levels and fields of education, particularly between formal, non-formal, and informal education. Tostan (2013) described the Solar Power project, carried out by the NGO Tostan in Africa, which empowers rural women to go to the "Barefoot College" for a training program in solar energy engineering. On their return, these women can train other women from neighboring communities, so multiplying the effects of the program (58 solar engineers trained) and giving each of them a livelihood. Through this project, women have a renewable energy source and are becoming entrepreneurs in their communities, which helps to strengthen community-led development (452 solar panels installed in 9 villages in Senegal).

(iii) Development education has highlighted the role of stakeholders and partnerships in the implementation of educational programs. In the public sector, the Government of Mongolia and the Swiss Department of Development and Cooperation have signed a cooperation agreement to promote a sustainable future through ESD. This project involves 752 schools, teacher training institutions, and departments of education - 500,000 children and 26,000 teachers are involved in the project (SDC, 2013).

1.1.2 The 2015 Roadmap, a global action program for ESD

The lessons of the Decade and the challenges ahead have guided the Global Action Program for ESD (resolution 37C/12). Five priority areas for action have been identified: (i) policies to support ESD, (ii) transformation of learning and training settings, (iii) capacity building for teachers and trainers, (iv) youth empowerment and mobilization, (v) accelerating the search for sustainable solutions at the local level.

While these 5 priority action areas constitute a call for commitments (over 5 years) from all stakeholders to support the implementation of ESD worldwide, they place ESD in a framework of good practice (UNESCO, 2012). In other words, ESD is still descriptive and no methodological framework seems to be proposed, although the issue of SD themes, values and skills is at the forefront.

1.2 Education for sustainable development, a theoretical framework?

It is difficult to design a universal framework for education for sustainable development, as each country must define its own objectives, priorities, program of action, and assessment method. Economic, environmental, social, religious, and cultural conditions are such that ESD can take different forms. Nevertheless, it is possible to specify the essential characteristics of education for sustainable development and to define the contours of its theoretical framework. ESD is a complex issue and the way it is implemented is a challenge for all countries. In the following, we would like to set out a methodological framework for ESD (Diemer, Girardin, Marquat, 2015).

1.2.1 ESD and the concept of "education for"

In recent years, *education for* has entered our educational system. This phenomenon has become so widespread, in France and Europe, that the list continues to grow (environmental education, media education, health education, biodiversity education, climate change education, etc.) as a result of incursions into inter- or trans-disciplinarity. How can such a craze be explained? Is this a fashionable phenomenon or is it a real desire to transform our education system? Lebeaume (2004), Lange and Victor (2006), Simonneaux (2006), Legardez and Alpe (2013), Lange (2015) do not hesitate to oppose *education for* to traditional teaching. Unlike the latter, which refers to compartmentalized disciplinary content (scientific knowledge is stabilized) and place the teacher at the heart of knowledge transmission, *education for* which is based on the knowledge of the various actors in formal/informal education, proposes to build a model of social and ethical competencies, uses a trans-disciplinary approach (Diemer, 2014), and aims at a critical and committed pedagogy in action (Diemer, Marquat, 2014; Diemer, 2015).

Legardez and Alpe (2013) have specified the four important features of this difference from classic education: their thematic, non-disciplinary and "transversal" nature (according to the terminology of the French Ministry of Education); their close relationship with socially lively issues; the important place they give to values; and their objective of changing behavior, to prepare for action. This flourishing of education has challenged our relationship to teaching and education, and is a real challenge for institutions in charge of teacher training. Education for sustainable development would imply nothing less than a fundamental change in teaching as it is generally practiced today.

1.2.2 ESD as a conceptual framework

ESD has a conceptual framework (Diemer, 2013; Diemer, Ndiaye, Khushik, Pellaud, 2019) characterized by societal challenges (also referred to as controversial issues); an introduction to Systems Thinking, a Transdisciplinary approach; 5pillars of sustainable development (environmental, social, cultural, economic, governance); spatial and temporal scales; a system of values and broad principles (responsibility, precaution, participation, solidarity).

(i) ESD includes a growing list of societal issues (biodiversity, climate change, energy, water, production and consumption patterns, food, human rights, human health, governance, urbanization, sustainable mobility, etc.). ESD is integrated into many global frameworks and conventions: Article 6 "Education, training and public awareness" of the United Nations Framework Convention on Climate Change (1992); Article 13 "Public education and awareness" of the Convention on Biological Diversity; point 18 "Education and training" of the Hyogo Framework for Action 2005 - 2015 for Disaster-Resilient Nations and Communities; and the 10-year framework of programs on sustainable consumption and production 2012 - 2021 "Lifestyles and sustainable education"

(ii) ESD introduces Systems Thinking. A complex situation requires a global vision of the context, which means considering all the factors involved in the problem being addressed, while placing the problem within a broader framework (Morin, 2005). Complexity introduces the notions of interactions, interference, and uncertainty. ESD involves the use of Systems Thinking that focuses on interacting elements (feedback loops) and irreversible processes (time delays).

(iii) ESD requires a transdisciplinary approach. Education for sustainable development is fueled by the explosion of disciplinary research (importance of fundamental knowledge related to sustainable development), advocates openness between disciplines (interdisciplinarity), and advocates research to bring knowledge together between disciplines (transdisciplinarity). Transdisciplinarity is situated both between disciplines, across disciplines, and beyond disciplines (Nicolescu, 1996). It is supposed to construct its own content and methods in order to capture a multidimensional reality, structured at multiple levels (Piaget, 1972).

(iv) ESD is based on the 5 pillars of sustainable development. In addition to the three well-known pillars of the Brundtland Report (environmental, social and economic), the cultural and governance pillars are to be added. Culture, and more specifically cultural diversity (UNESCO, 2001, 2005), plays an important role in the understanding, acceptance, and diffusion of sustainable development. This means the need to apply a culturally sensitive education model, so that local populations can both take ownership of ESD and contribute to its enrichment. Governance introduces the notion of stakeholders (Freeman, 1984). It rehabilitates the intentionality (competence to act) and justifications of actors in a reciprocal determination of doing and saying (Boidin & al, 2014).

(v) ESD is part of spatial and temporal scales. Time introduces the generational effect (this is the definition in the Brundtland report) but also looks at the past (refusal to forget), and the future (forward-looking approach, scenarios). The global must be connected to the local based on the principle of subsidiarity (this point is particularly important when talking about territories and the enhancement of indigenous knowledge).

(vi) Finally, ESD is based on a system of values and broad principles (sustainability). These values (respect for the environment, empathy, respect for others, self-esteem, etc.) should make it possible to empower individuals, to train responsible citizens (education for eco-citizenship) to be capable of projecting themselves into the future, to become involved in a genuine social project, to understand the full complexity of the socio-economic, ecological, cultural, and ethical factors that determine the entire sustainability of development (UNESCO, 2009). Principles such as responsibility, solidarity, precaution, and participation now define the philosophy of sustainable development.

Figure 2: Sustainability Framework
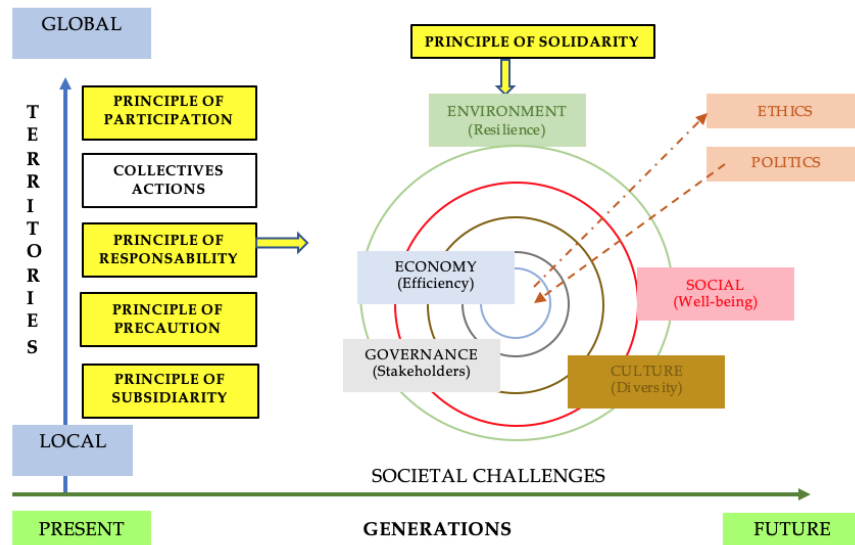
Source: Diemer (2011, 2012, 2013, 2015)

From this conceptual framework, it is possible to propose a methodological framework for integrating ESD into a learning process.

1.2.3 ESD as a methodological framework

In the following, we seek to identify a methodological framework for education for sustainable development. This framework has been associated with a model called REDOC for Representations, Pedagogical Methodology, DidacticTools and Skills (Diemer, Marquat, Bigohe, 2014; Diemer, Kerneis, Marquat, 2014; Diemer, 2015; Diemer, 2017).

Figure 3: REDOC Model
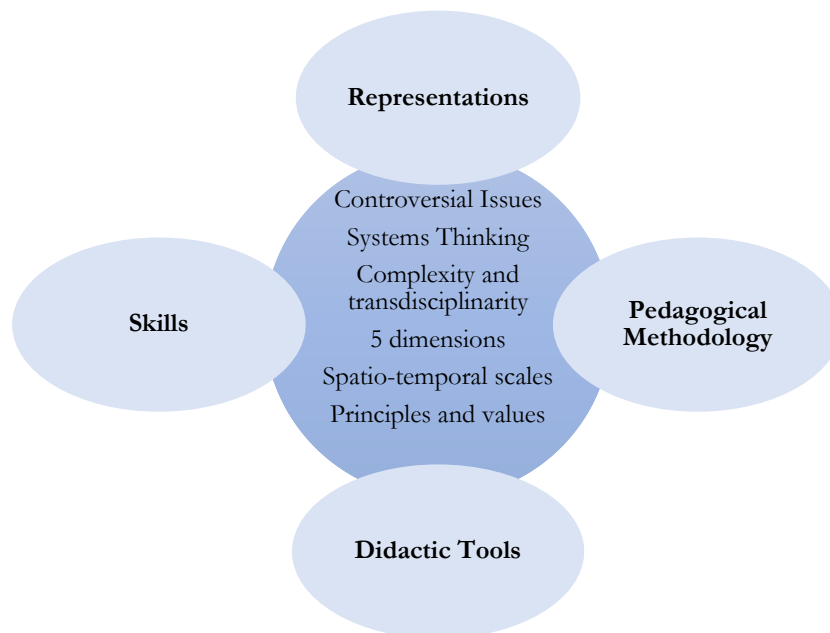
Source: Diemer, Marquat, Bigohe (2014)

- "Representation" is the first step in the model. Representation refers to the mental elements that are formed by our actions and that inform our actions. It is characterized by a process of construction and functioning which is distinct from other ways of thinking (Danic, 2006). The notion of (social) representation includes a certain number of features such as symbolism, imagination, cognition, action and interaction, etc. : "Social representation is a process of perceptual and mental elaboration of reality that transforms social objects (persons, contexts, situations) into symbolic categories (values, beliefs, ideologies) and confers on them a cognitive status allowing them to grasp aspects of ordinary life by reframing our own behaviours within social interactions" (Fischer, 1987, p. 118). The aim is to bring out the representation of sustainable development held by teachers, pupils and citizens by using different techniques such as questionnaires, interviews, focus groups, or speechanalysis by software such as TROPES.

- Pedagogical methodology is the second step of the model. There is a broad consensus that the pedagogical practices of education for sustainable development are based on the teacher's active construction of his or her own skills (Vygotsky, 1934; Piaget, 1937; Meirieu, 1987, Astolfi, 1997...). Socioconstructivism is a relevant theoretical framework for studying ESD (Doise and Mugny, 1981; Cole, 1991). Each teacher builds his or her own knowledge, skills, attitudes and values in a socialized context (family, village, friends, colleagues, working conditions, social, etc.). ESD invites us to pay particular attention to cultural and educational contexts in cognitive processes. It is this concern for "global thinking, acting locally" that has led us to focus on the following 4 pedagogical modalities (Diemer, Claveau, Marquat, Montéro, 2016) for ESD:Critical pedagogy (Freire, 1974), Project-based pedagogy (Hubert, 1999), Exploration of the living environment (Life scanning (Sauve, 1997), and Mindfulness (Hant Thich Nhat, 2011)

Figure 4: Interactive and complementary methodologies in Education for Sustainable Development
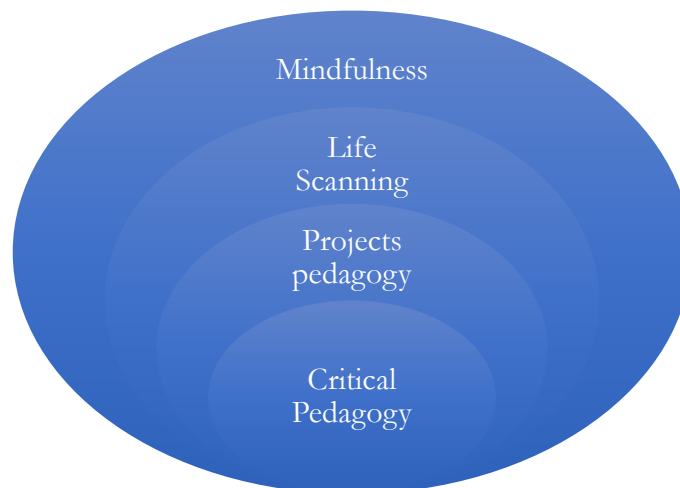
Source: Claveau, Diemer, Montero, Pellaud (2016)

- The use and design of teaching tools is the third step of the model. ESD uses innovative tools which enable teachers to interact with their students e.g. photography, storytelling, comic strips, theatre, discussions, and mind mapping of controversial issues are interactive tools which make it possible (i) to collect learners' representations (to "free up" speech and facilitate exchanges during focus group sessions), (ii) to identify tools which resonate with local practices, (iii) to analyze the possibilities for integrating the tools into a phase of accompanying learners in Education for Sustainable Development.

- The last step of the REDOC model addresses skills, a fundamental issue in education for sustainable development. Several of the competences targeted by ESD are derived from the key competences of the education framework, namely acting autonomously, interacting with one's environment, interacting effectively with others, etc. UNESCO's work on competences is based on the report Learning: the Treasure Within (1996), which contains the following pillars: (i) learning to know, (ii) learning to do, (iii) learning to be, (iv) learning to live together, (v) learning to transform oneself and society. Of course, each country will seek to give priority in its education system to skills that are consistent with its cultural, social, environmental, and economic specificities. However, there are skills which are related to the pedagogical objectives and modalities of ESD: critical analysis (ability to ask questions, seek answers,

debate, choose, argue), systemic thinking (ability to analyze and understand complex situations, to accept several points of view and partial solutions), transdisciplinary approach (ability to mobilize several fields of knowledge, the know-how to connect and discuss them), collaborative decision-making (know-how to collectively build an optimal solution for all, get stakeholders to converge, develop a common vision of a project), a sense of responsibility (act responsibly, ability to assume responsibilities and take charge of missions). It should be noted that in all these skills, there is an interaction between mobilized knowledge, attitudes, and values.

1.2.4 ESD, a matter of good practices and field actions

Beyond the purely theoretical question, it should be recalled that education for sustainable development refers both to good practices (UNESCO program) and to actions in the field. ESD projects focus on a number of criteria such as the needs of populations, a consideration for shared values (cultural and universal), the presence of partnerships from the local society, the development and dissemination of information and communication through networks. They emphasize a fundamental point of education for sustainable development: the reflective approach. It is an essential component for developing the skills leading to autonomy and responsibility. Reflexivity is "the subject's ability to consider his own activity in order to analyze its genesis, processes or consequences, in other words, the practice of reflexivity constitutes the possibility for any social actor to examine his situation and his action" (Bertucci, 2009). This practice makes it possible to move forward by regularly looking back, by asking questions such as: Does the approach meet the objectives set? Is it effective? Does it allow the community of actors to be involved? What are the consequences?

2. ESD in Pakistan and Senegal

While education for sustainable development - through UNESCO's programs - has spread widely in both the North and the South, national programs have not always made ESD a priority in education policy. Teacher education remains a key variable for the implementation of ESD, and in the absence of a real willingness of teacher education institutions to integrate ESD into teacher training program, little real progress has been made.

This is the case, in particular in Pakistan, which has seen the implementation of scattered initiatives such as the UNESCO Associated Schools Network (ASPnet), courses on ESD as part of master's program (Educational Sciences), the spontaneous participation of a few universities (e.g. University of Punjab in the International Network of Teacher Training Institutions. More than 60 ASPnet schools have developed peace and sustainable development education programs to share contextualized knowledge on respect and cultural diversity with teachers, students, parents, and the community at large. A pedagogical initiative on ESD was proposed by the Institute of Education, Lahore College for Women University (Kalsoom & Khanam, 2017). The objective of this program was to raise awareness among student teachers of the concepts of Sustainable Development (SD) and Education for Sustainable Development (ESD) in order to strengthen their awareness of the notion of sustainability. As part of this initiative, undergraduate student teachers carried out 11 weeks of local work. This work included field surveys on sustainability issues (effect of socio-economic context on education, challenges faced by female students in higher education, environmental awareness of pre-service teachers, culture of teacher training institutions).

Although there are individual or institutional efforts related to the implementation of ESD in teacher education, ESD is only tentatively entering Pakistan's education policy. The analysis of various documents such as education policy (Government of Pakistan, 2009), provincial education sector plans (Government of Balochistan, 2013, Government of Punjab, 2013-2017), the B. Ed.Honors curriculum (Higher Education Commission, 2012) or national professional standards for teachers (Ministry of Education, 2009), do not reveal education for sustainable development as a national priority. This virtual absence of ESD in national systems contrasts with initiatives on other topics. For example, environmental education, economics, human rights and citizenship have been included in the B. Ed.curriculum. Civic responsibility, social cohesion and tolerance are mentioned in national education policy, the education sector plan and national professional standards (Diemer, Khushik, 2020).

According to Kalsoom, Qureshi and Khanam (2018), this low emphasis on ESD has generated two types of problems: (i) the knowledge of student teachers of sustainability issues and their attitudes and behaviors towards sustainability fall short of expectations; (ii) a lack of research on ESD-related issues. Kalsoom, Qureshi and Khanam (2018) analyzed a database of ESD-related research-based articles written by Pakistani authors. The databases consulted were Springer, Taylor and Francis, as well as 4 national education journals. They found more than 2,500 articles on ESD, but no empirical studies on ESD have been conducted by Pakistani authors.

They analyzed 353 articles that were published in national journals from 2004 to 2016 and concluded that no articles had been published on ESD. Pakistani researchers would appear to have little or no exposure to research related to the concepts of sustainable development and education for sustainable development.

The history of ESD in Senegal is different from Pakistan. Senegal's commitment to taking into account the protection of the environment and natural resources is demonstrated, on the one hand, by its adherence to most international environmental treaties and conventions, and on the other hand by the adoption of the first Environment Act in 1983 (Act No. 83-05 of 28 January 1983). As environmental concerns became more complex, Senegal tried to adapt by reviewing the legal environment and by adopting a new environmental law in 2000: Law No. 2001 - 01 of 15 January 2001. In this text, there is a clear national desire to make education a lever, a means of addressing environmental challenges.

Article L 7 of the said code clearly states: "The State guarantees all citizens the right to environmental education. In this context, public and private institutions responsible for teaching, research, or communication must participate in the education, training, and awareness-raising of populations on environmental issues: by integrating into their activities programmes to ensure a better knowledge of the environment; by promoting the capacity building of environmental actors".

Following the Paris Conference and the launch of the Sustainable Development Goals (SDGs), Senegal launched a draft constitutional law in April 2016 to reiterate its commitment and willingness to pursue its economic development with concern for the environment, while making education the pillar of this strategy. On 13/06/2016, following a referendum, Senegal included the concept of sustainable development in its constitution for the first time, as can be seen in the articles below:

Art. 3 - An article 25-1, 25-2 and 25-3 are added after article 25 of the Constitution, as follows
Art. 25-1. - Natural resources belong to the people. They are used to improve their living conditions. The exploitation and management of natural resources must be transparent and in such a way as to generate economic growth, promote the well-being of the population in general and be environmentally sustainable.

Art. 25-2. - Everyone has the right to a healthy environment.

The defense, preservation, and improvement of the environment is the responsibility of the public authorities. Public authorities have an obligation to preserve, restore essential ecological processes, provide for the responsible management of species and ecosystems, preserve the diversity and integrity of genetic heritage, require environmental assessment for plans, projects or programs, promote environmental education and ensure the protection of populations in the development and implementation of projects and programs with significant social and environmental impacts.

Art. 25-3 Every citizen has the duty to preserve the country's natural resources and environment and to work for sustainable development for the benefit of present and future generations.

The will to use schools to provide solutions to environmental problems, and to move towards sustainable development, is very real. Already in 2000, Senegal hosted the World Education Forum. The Dakar Framework is the collective expression of the international community to act to achieve the goals and objectives of universal education for all in a sustainable manner.

At the sectoral level, the Ministry of the Environment has set up the CEFE: the Environmental Education and Training Unit. It is the logical extension of the Environmental Training Program (ETP), the primary education component of the Sahel Education Program (PES), funded by the European Union by a grant for the decade 1990-2000. In the same year, the Ministry of National Education launched the PDEF, the Education and Training Development Program. In 2005, this was followed by a redesign of the programs through a skills-based approach in which the environment and sustainable development are present. This was also duringthe United Nations Decade for Sustainable Development, when Senegal was strongly committed to UNESCO, the leader of this program.

The Senegalese educational guide for elementary education has integrated education for sustainable development into the basic education curriculum (Ministry of National Education, 2015). It is a sub-domain (like the discovery of the world) of the field of Education for Science and Social Life, subdivided into two components: living in one's environment, and living together.

The guide emphasizes interdisciplinary competence, which aims "to integrate basic concepts, preventive measures, observation techniques and good behavioural habits in situations of human relations and practical solutions to problems related to the environment and living conditions in the immediate environment" (2015, p. 316). The pedagogical approach is centered around 4 interdisciplinary levels (level 1: adapt interdisciplinary competence to disease and hygiene problems) and 4 integration situations of these same levels (level 1 integration situation: one-off learning and integration learning).

The sub-domain "living in one's environment" is broken down into basic skills and criteria (relevance, accuracy, exhaustiveness, conformity, feasibility), and appropriation of the competence (meaning, components). In practice, this means training students to observe their environment, identify problems, and propose appropriate solutions. Competence emerges in situations where students propose appropriate solutions to problems in the immediate environment.

The sub-domain "living together" repeats this same dichotomy, but it is a question of familiarizing students with the fact that they are attentive to the problems which arise from human relationships within their environment (circle of friends, classmates, games) and proposing fair solutions. It is also about promoting good behavior towards others (parents, adults, elders, friends, classmates). Competence manifests itself in situations where the student adopts or proposes good behaviors.

2. When Sustainable Development interacts with Education for Sustainable Development, the challenges of SDGs

While UNESCO is now associated with education for sustainable development (ESD), it should be recalled that ESD's origins date back to the early 1970s with the Stockholm Conference and the popularization of the concept of eco-development (Diemer, 2015; Berr and Diemer, 2016). However, ESD only gained real recognition at the United Nations Conference on Environment and Development (UNCED), better known as the Earth Summit (Rio de Janeiro) in 1992). At the end of the various negotiations, UNCED published Agenda 21, which proposed a detailed plan of action at the global, national, and local levels for United Nations agencies, governments, major non-governmental and civil society organizations, and networks to reduce the effects of human activity (UNESCO, 2009, p. 7). Following the publication of Agenda 21, a number of international institutions embarked on the path of sustainable development and its education.

Since 2005, the OECD has been offering a range of work in 6 main themes: sustainable consumption and production, climate change and sustainable development, sustainable trade and foreign investment, subsidy reform and sustainable development, education for sustainable development, and environment and health. From an organizational point of view, the OECD has developed a tool, the RAEDD (Annual Meeting of Sustainable Development Experts), which aims to "encourage the integration of sustainable development issues into the activities of OECD committees, share best practices of OECD member countries in sustainable development strategies and engage with non-member countries" (OECD, 2011, p. 4). More specifically, with regard to the theme of education for sustainable development, the OECD has focused on "assessing learners' knowledge of environmental issues, identifying the influence of education on behaviour and determining the conditions necessary for the development of appropriate learning environments" (OECD, 2011, p. 66). The Education Policy Committee (EPC) oversees the overall direction of the work on education for sustainable development.

The EPC focuses on sustainable school facilities, innovative learning environments, the role of higher education in sustainable development, learners' understanding of the impact of environmental concerns, and improving social outcomes through education.

Various committees and working groups have contributed to the thinking on ESD.

- The Centre for Effective Learning Environments (CELE) focused on the physical learning environment by exploring how to develop sustainable educational facilities, the cost/benefit ratio of such facilities, and how they support teaching and learning activities.

- The Program on the Management of Higher Education Institutions (IMHE) has carried out a project on higher education and the development of cities/regional areas. These include the contribution of higher education (HEI) research to regional innovation, the role of teaching and learning in the development of human capital and skills, the contribution of HEIs to social, cultural and environmental development, and the role of HEIs in building regional capacity to operate in an increasingly competitive global economy (OECD, 2009).

The Higher Education for Sustainable Development report (2010) presented the results of an international study on how higher education institutions are addressing sustainable development.

- The Program for International Student Assessment (PISA) assessed 15-year-olds enrolled in an educational institutioninternationally. The evaluation carried out in 2006 served as the basis for the report *Green at Fifteen? How 15 years Olds perform inenvironmental science and geoscience in Pisa 2009*. The latter presents an analysis and information on the factors that raise students' awareness of environmental sciences, their attitude towards the environment, and the correlation between this attitude and environmental science results. In conclusion, the report notes that education systems must improve their performance to ensure that, in all sectors of society, future citizens can exploit their potential to understand environmental issues.

- In 2008, the OECD set up a workshop on education for sustainable development. This horizontal program on sustainable development was organized in cooperation with the Directorate of Education and the Division for Consumer Policy and the Directorate of Science, Technology and Industry. It has made it possible to identify and widely disseminate to organizations and countries good practices concerning national strategies, curricula, and school practices in education for sustainable development (education and awareness-raising on sustainable consumption and production).

- The Centre for Educational Research and Innovation (CERI) has launched a project to study the characteristics and effectiveness of new learning environments and their contribution to sustainable development.
In its Education at a Glance report (2014), the OECD highlighted the essential role that education and skills play in promoting social progress.

In 2015, the United Nations General Assembly (UN) adopted the final document "Transforming our World, the Agenda for Sustainable Development to 2030" devoted to the adoption of the post-2015 development agenda. This sustainable development program was presented as an action plan for humanity, the planet, and prosperity. The eradication of poverty in all its forms and dimensions was seen as the great challenge facing humanity (UN resolution, General Assembly of 25 September 2015). The 17 sustainable development goals (SDGs) and 169 targets today reflect the scope of this new program and its ambition. They also raise the question of the place of education, and in particular education for sustainable development, in anti-poverty programs.

2.1Philosophy and usability of SDGs

The ambition and scale of the United Nations sustainable development agenda for 2030 leaves no doubt. The SDGs are a follow-up to the Millennium Development Goals (MDGs), both to build on their success and to go beyond them.

Figure 5: From MDGs to SDGs

Source: United Nations (2015, 2018)

- Build on success - because the MDGs led to progress in several important areas (UN report, 2015). Goal 1 aimed to eradicate extreme poverty and hunger.

In 2015, 14% of the population in developing countries lived on less than $1.25 a day, compared to nearly 47% in 1990. Globally, the number of people living in extreme poverty has more than halved, from 1.9 billion in 1990 to 836 million in 2015. Goal 2 aimed to achieve universal primary education. The number of out-of-school children of primary school age has halved worldwide, from 100 million in 2000 to 57 million in 2015. In developing regions, the net enrolment rate in primary education reached 91% in 2015 compared to 83% in 2000. Goal 3 promoted gender equality and the empowerment of women. In all developing regions, the target of eliminating gender disparity in primary, secondary and tertiary education has been achieved. In South Asia, 74 girls attended primary school for every 100 boys in 1990. In 2015, 103 girls were enrolled for every 100 boys. Goal 4 focused on reducing under-5 mortality. The under-5 mortality rate dropped from 90 to 43 deaths per 1000 live births between 1990 and 2015. Nearly 84% of children worldwide received at least one dose of measles vaccine in 2013, up from 73% in 2000.

Figure 6: Millenniun Development Goals
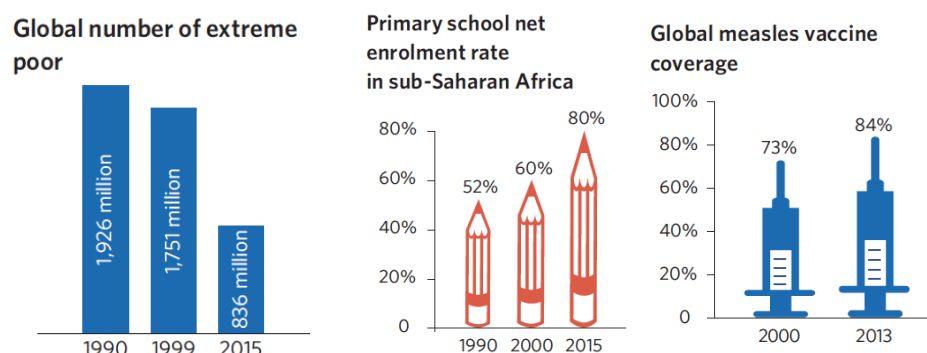
Source: United Nations Report (2015)

Goal 5 aimed to improve maternal health. The maternal mortality ratio decreased from 380 to 210 deaths per 1000 live births between 1990 and 2013. The number of births worldwide attended by skilled health personnel increased from 59% to 71% between 1990 and 2014. Goal 6 aimed to combat HIV/AIDS, malaria and other diseases. New HIV infections fell by 40% between 2000 and 2013 to 2.1 million cases. More than 6,200,000 malaria deaths were prevented between 2000 and 2015, mainly among children under five in sub-Saharan Africa. Goal 7 aimed to ensure environmental sustainability. In 2015, 91% of the world's population used an improved drinking water source compared to 76% in 1990. The proportion of the urban population in developing regions living in slums increased from 39.4% in 2000 to 29.7% in 2014. Goal 8 aimed to establish a global partnership for development.

The amounts that developed countries have spent on official development assistance increased from 81 billion to 135 billion between 2000 and 2014 (an increase of 66%). The number of mobile phone subscriptions increased tenfold,from 738 million in 2000 to 7 billion in 2015.

- Go beyond them - because despite these successes, progress has been uneven across regions and countries, resulting in significant gaps. (i) Gender inequalities persist. Despite declining poverty rates in Latin America and the Caribbean, the proportion of women to men in poor households has increased from 108 women per 100 men in 1997 to 117 women per 100 men in 2012. Women face discrimination in access to work, economic assets and participation in decision-making. (ii) Climate change and environmental degradation tend to undermine progress, and it is the poorest who suffer. Water scarcity affects 40% of the world's inhabitants. Global carbon dioxide emissions doubled from 1990 to 2015. (iii) Conflict is still the main threat to human development. By the end of 2014, conflicts had forced nearly 60 million people to abandon their homes. (iv) Millions of people still suffer from hunger and lack access to basic services. 800 million people continue to live in extreme poverty. 57 million school-age children are not in school.

In a way, both in substance and in form, the SDGs are different from the MDGs. Unlike the MDGs, which presented themselves as prescriptions from the North to the South (see the report Taking Stock of the global Partnership for Development, 2015), the SDGs concern countries in the North and the South. According to the FAO (2015), they offer a vision of a more just and prosperous world. They should make it possible to assess the current global situation, provide an overview through statistical methods and indicators (OECD, 2016), and identify the strengths and weaknesses, constraints and opportunities, specific to each country, to coordinate everyone's efforts by placing them in a global context.

The SDGs are neither incentives nor binding (no penalties for countries that do not apply them), they should just be integrated into States' sustainable development policies and national action plans (IDDRI, 2016). However, the word "just" hides a major difficulty, because of their interdependence, complexity and systemic framework, the SDGs pose a number of problems in the implementation of public policies. Thus, and in accordance with the principles of sustainable development, the 17 SDGs are indivisible (tackling the threat of climate change influences the way we manage our natural resources; achieving gender equality or better health helps to eradicate poverty, consolidating peace reduces inequalities and contributes to flourishing economies), and it is as such that they must be analyzed and learned from over the long term.

Systems dynamics (Forrester, 1968) or System Thinking (Meadows, 2008) can be used to understand the links and interdependencies between the different SDGs (SDG 17 Systemic issuesseems relevant to integrate SDGs). Positive loops amplify the system (exponential logic), so that if agricultural production increases, it increases growth, which reduces famine, which reduces poverty. Negative loops regulate the system. Less poverty increases the quality of education, which in turn reduces inequalities. This depiction of the SDGs shows that it is difficult to anticipate the effects of a public policy, especially one designed to improve the benefits of education, and it helps to understand the scenarios behind each measure. Thus, the quality of education seems to depend on poverty reduction, which in turn depends on economic growth. In the case of developing countries, this increase in growth may be at the expense of responsible consumption (this is one of the main findings that can currently be made in these countries, which are not yet able to meet the goals ofSDG 12).

Finally, the SDGs include global environmental issues (Agenda 21 and the 3 international conventions on climate, biodiversity and desertification) which were not part of the MDGs. Thus, the SDGs place climate change at the heart of the sustainable development debate and make UNDP the leader of sustainable development within the United Nations.

Figure 7: System Thinking and SDGs
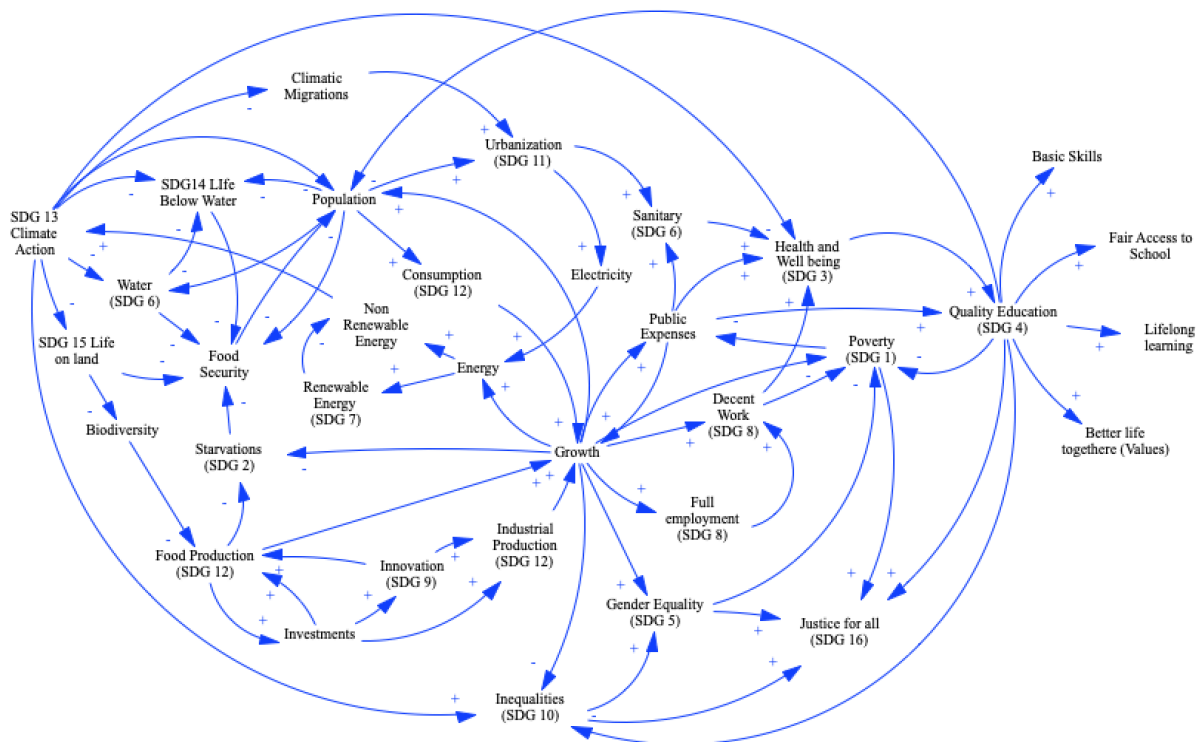
Source: Diemer, Ndiaye, Khushik (2017)

- the United Nations resolution and the launch of the sustainable development program (SDG) for 2030 coincided with another historic agreement, reached in 2015 at the Paris Conference on Climate Change (COP21).

The Paris agreement with the Sendai Framework for Disaster Risk Reduction, ratified in Japan in March 2015, define a set of common standards and achievable targets for reducing carbon emissions, managing risks related to climate change and natural disasters, and building resilience capacities (Aubert & al, 2017).

- The SDGs, which came into effect in January 2016, guide UNDP policies and funding for the next 15 years. As a result, UNDP is uniquely positioned to contribute to the implementation of the SDGs through its activities in 170 countries and territories. Its strategic plan focuses on key areas, including poverty reduction, democratic governance and peacebuilding, climate change and the risk of natural disasters, and economic inequalities. UNDP supports governments in integrating the SDGs into their national development policies and projects. Through these previous development initiatives, UNDP has gained valuable experience and political expertise to support developing countries in achieving the targets set by the SDGs for 2030.

2.2 SDG and Education, the perspective of SDG 4

Education for sustainable development, and the skills implied, is based on4 major issues whichare relevant for most developing countries: health (associated with sanitation, access to water, and access to health services), the environment (associated with population density in urban areas and waste), and food (provision of school canteens). These societal challenges are then integrated into the basic curriculum of the main national program (e.g. Senegal's pedagogical guide) and the SDGs, thus introducing a final issue, education (itself reflected in SDG 4). However, the education issue cannot be limited to a simple analysis of curricula; in many developing countries, the quality of education is conditioned by a social, political, religious, and economic context. Transportation and access to school can take time for both students (long walking hours) and teachers (2 to 3 hours a day to get to class). There are inequalities between urban and rural areas. The number of students per class can be as high as 80 in primary school. Despite circulars in developing countries that set the number of students at 35 or 50, reality overwhelms the texts and makes it difficult for any of the pedagogical innovations (e. g. critical pedagogy, mindfulness, project pedagogy) associated with education for sustainable development.

*Figure 8: ESD, SDG and Socio-political context*
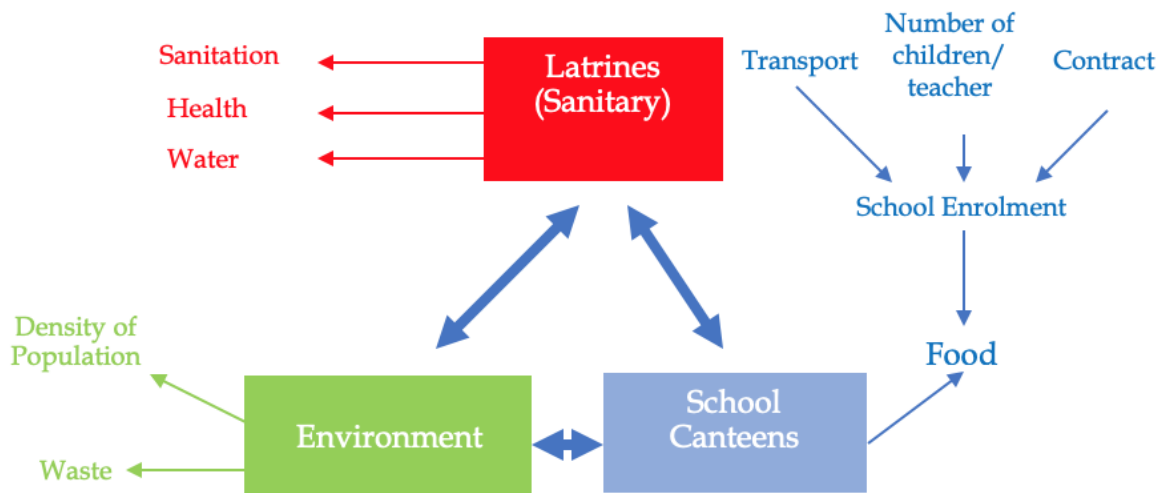
Source: Diemer (2017)

Finally, teacher contracts are not homogeneous and uniform. There are a large number of contracts and therefore a significant range of skills: from the civil servant teacher (who has received teacher training and has been able to benefit from a few hours of training in education for sustainable development) to the contract teacher paid by the village (who has had to forge a culture of education for sustainable development himself).SDG 4 aims to ensure that all people have access to quality education and lifelong learning opportunities. This objective focuses on the acquisition of basic and higher-level skills at all stages of education and development; broader and more equitable access to quality education at all levels, as well as to technical and vocational education and training, plus the knowledge, skills and values required to live in a productive society.

This SDG is a reminder that there are numerous situations which prevent children from going to school: children may live in rural areas, may be affected by poverty, or may have parents with little or no education (SDG Report, 2016).

Figure 9: SDG 4, Quality Education
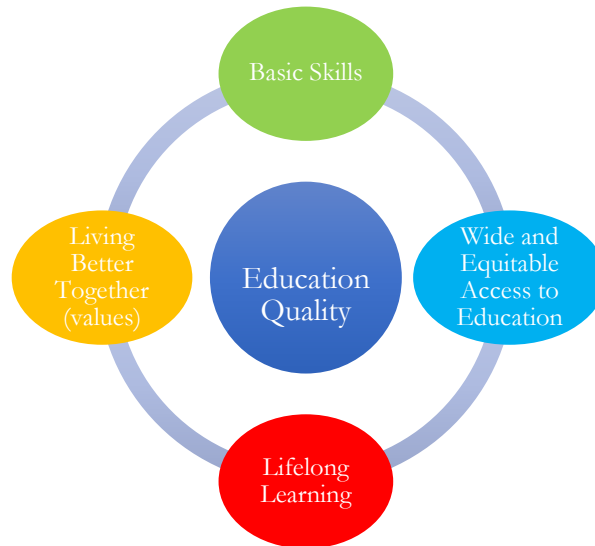
Source: Diemer (2017)

However, and this may be where the expectations and outcomes of SDG 4 need to be qualified, the fact that the quality of education may influence several targets (acquisition of basic skills such as literacy and numeracy, good physical, social, emotional and mental health development) somewhat obscures the reality of the facts. Indeed, education quality is influenced by the context. Thus, primary school poses the problem of enrolment and access to the education system, low-income countries point out that an improvement in education requires the eradication of poverty, and argue that developed countries must increase their efforts on basic knowledge, and adult education (e.g. lifelong learning) must not be prevented by gender issues.

Figure 10: Targets of SDG 4
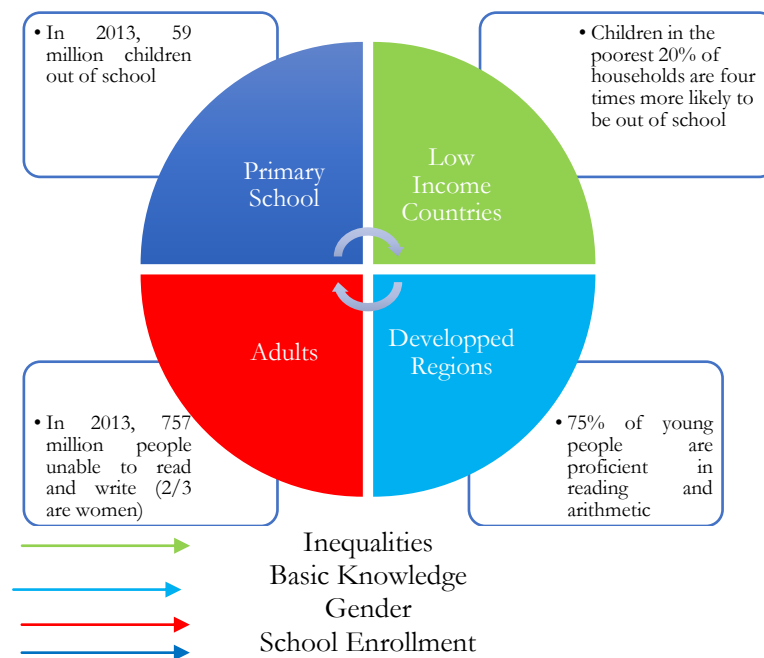
Source: Diemer (2017)

Inequalities, gender, schooling, and basic knowledge are the target variables of SDG 4, and are expressions of the systemic nature of sustainable development (inequalities corresponding to SDG 10 and gender to SDG 5). This link between SDG 4 and complex and systemic thinking allows us to reaffirm the strong link between education quality and education for sustainable development. In a way, SDG 4 and ESD are positioned at the crossroads of a triptych composed of basic needs, relationship with nature, and living together.

<center>*Figure 11*: *Challenges of SDG 4 and ESD*</center>
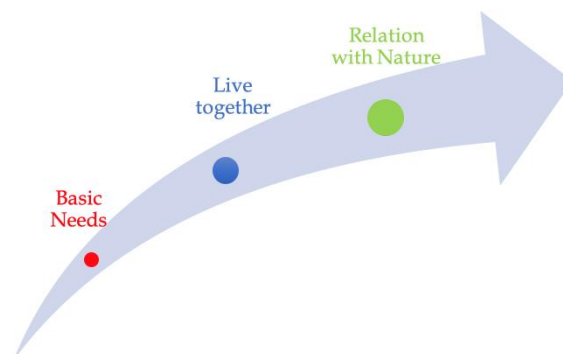
This is where the challenge lies for both developed and developing countries.

2.3. What position for the countries of the South?

By adopting a universalist position, the United Nations has made poverty a global cause. The SDGs apply to both North and South countries, but sufficient and necessary conditions must be created to ensure that such targets do not melt like snow in the sun. Indeed, beyond the occasional statements, "*We are determined to eradicate poverty and hunger everywhere in the world by 2030; to combat inequalities within and between countries; to build peaceful and just societies, where everyone has a place; to protect human rights and promote gender equality and the empowerment of women and girls; to protect the planet and its natural resources in a sustainable manner*" (United Nations, 2015), sustainable development program should be integrated into the national strategies of individual States.

2.3.1 The implementation of SDG 4 and SDG 13: the case of Senegal

The Global Partnership for Sustainable Development Data (GPSDD) was launched in September 2015, on the margins of the United Nations General Assembly during which the Sustainable Development Goals (SDGs) were adopted. In early 2016, the UN Statistical Commission recommended some 231 indicators for the MDGs, but for many developing countries, data are not available. Senegal was one of the first African countries to join the GPSDD in September 2015. One of the objectives of the GPSDD is to support developing countries in implementing a roadmap, involving different stakeholders, to harness the data revolution for sustainable development. Although the Senegalese authorities acknowledge an alignment between national policies and the SDGs, it must be admitted that there are still many challenges to be addressed. While Senegal has performed well against SDG 13, for SenegalSDG 4 has only seen marginal improvements.

SGD 4 is associated with several targets and indicators. Indicator 1 identifies the "Proportion of children under 5 years of age whose development is on track in health, learning and psychosocial well-being, by gender". It should be noted that the MICS Early Childhood Development Index defines "on track" as the percentage of children aged 36-59 months who are developing in at least three of the following four areas: literacy-calculation, physical, socio-emotional and learning. Other measures use different definitions, with different empirical and conceptual perspectives of how best to define "being on the right track". There is not yet a globally accepted definition of "being on the right path to development". Defining and measuring "being on the right development path" should be an objective for the next phase of development of this indicator. Indicator 1 is a general measure of children's development and school readiness. Data available for global monitoring are generally collected from individual data through direct assessment of children in many regional or national assessments, or reported by mothers/primary caregivers or teachers. These data are then used to calculate an indicator that represents a composite measure across a range of agreed-upon characteristics in the areas of health, learning, and psychosocial well-being.

Indicator 2 measures the "rate of participation in organized learning activities (one year before the official primary school entry age), by gender". This is the percentage of children in the given age group who participate in one or more organized learning programs, including programs which offer a combination of education and care. Indicator 2 includes participation in early childhood education and primary education. The age range varies according to the official age of entry into primary education. An organized learning program consists of a sequence of educational activities designed to achieve pre-determined learning outcomes, or to accomplish a specific set of educational tasks. Early childhood and primary education programs are examples of organized learning programs.

Early childhood and primary education are defined in the 2011 revision of the International Standard Classification of Education (ISCED 2011). Early childhood education is usually designed using a holistic approach to support children's early cognitive, physical, social, and emotional development and to introduce young children to organized education outside the family context. Primary education provides learning and education activities designed to provide learners with basic skills in reading, writing, and mathematics and to establish a solid foundation for learning and understanding in the main areas of knowledge and personal development. It focuses on learning at a basic level of complexity with little or no specialization.

Table 3: SDG 4 Indicators

Year	Indicator		
	Participation rate in organized learning activities (one year before the official primary school age) Male &Female	Participation rate in organized learning activities (one year before the official primary school age) Male	Participation rate in organized learning activities (one year before the official primary school age) Female
SENEGAL			
2010	13.8	13.1	14.5
2011	15	14	15.9
2012	15.7	14.7	16.7
2013	15.5	14.7	16.4
2014	17.6	16.6	18.6
2015	17.3	16.2	18.3
2016	M (?)	M (?)	M (?)

Sources: ECDI, EDI, IDELA, MELQO et ICARO

The official age of admission to primary education is the age at which children are required to start primary education in accordance with national legislation or policies. When more than one age is specified, for example, in different regions of a country, the most common official age of admission (i.e. the age at which most children in the country are expected to start primary school) is used to calculate this indicator at the global level.

In the context of this article, we take a closer look at the link between SDG 4 and SDG13. We believe that this issue is very important because it could make it possible to institute education about climate change - an education that is increasingly advocated by UNESCO. According to the 2016 Senegal national monitoring report on the SDGs (September, 2017), significant progress has been made in SDG 2 (eradicating hunger), SDG 11 (sustainable cities) and SDG 13 (urgent action to combat climate change and its impacts). This performance is based on a causality that leaves no doubt about the recommended scenario: the development of the agricultural sector must stimulate strong growth in agricultural yields, coupled with a reduction in inequalities in terms of income (SDG 10, redistribution policy), which should make it possible to improve food security indicators and thus increase the performance againstSDG 2 "Zero hunger". Public expenditure on climate change adaptation (SDG 13) and waste management (SDG 11) would be the main causes of the performance of these two SDGs.

These successes are in contrast to the lack of improvement againstSDG 4 (education) and SDG 12 (responsible production and consumption). Indeed, these two SDGs have only made marginal progress, which is not up to expectations. In our opinion, they are symptomatic of choices that, in a systemic way, can affect the future of our societies. For education (SDG 4), the national report points out that if the trend continues, Senegal will only achieve 30% of its target by 2030. The report indicates that demographic inertia may be the main obstacle to the achievement of SDG4, it is therefore recommended to identify the levers that affect education system (i.e. to have a systemic approach) and to act in the expected direction.

In the case of SDG 12, the modest results may be partly due to economic growth driven by sectors using a significant amount of high-tech programmed obsolescence products (mobile phones, tablets).

This illustration of Senegal and its approach to the SDGs is not to apportion blame, it simply reflects the state of affairs. It is possible to achieve the same objective by different strategies. The current strategy is focused on productivity and growth gains, with the hope that these benefits will be systematically reflected in other drivers of development, rather than on behavioral change induced by climate change education or responsible consumption. The challenge is therefore significant, as most primary school teachers interviewed between 2015-2016 did not make a link between SDG 13 and SDG 4. Only 20 out of 150 teachers have integrated SDG 13 into a global strategy for education for sustainable development (Diemer, Ndiaye, Khushik, 2018).

2.3.2 The implementation of SDG 1 and SDG 4: the case of Pakistan

Pakistan is mainly characterized by a large population (207.78 million inhabitants) and a high birth rate (2.7%). As well as this situation, typical of many developing countries, it also has a very low literacy rate, 58% (NEMIS-AEPAM, 2016); 30% of the population lives below the poverty line;the gross national income per capita is less than $1,500 US (current $); and Pakistan has an HDI of 0.538. Poverty and illiteracy are a combination of evils that drive the majority of young people and children to extremism, violence, or criminal activities. The deteriorating environment, air pollution, recent winter smog, urbanization, contaminated water, terrorism, regional/provincial conflicts, food security, inflation, inequality, access to education, loans, security issues, soil fertility, deforestation, and corruption underpin the long list of challenges facing Pakistan today. These challenges have made Pakistan a very vulnerable country which is dependent on humanitarian aid from major international institutions and/or NGOs.

There is no doubt that education plays an important role in achieving the objectives of well-being and life satisfaction, which are symbols of a society working towards sustainable development. Although there is a controversial debate on the type of education necessary and sufficient to achieve the SDGs, all stakeholders agree that multifaceted education is needed, including education for sustainable development and not conventional education. In a country like Pakistan, which has not been able to achieve the goal of universal primary education over the past decade, the challenge is significant and says a lot about the prospects for achieving SDG 4. According to the 2015 Education for All report, 6.7 million children are still not at school, 62% of whom are girls. Access to schooling is a prerequisite for the implementation of ESD, so it is essential to ensure that as many children as possible go to school and stay in school up to the middle level.

In what follows, we have chosen to focus on the link between SDG 1 (no poverty) and SDG 4, but this perspective would be insufficient and biased if we did not revisit the MDGs, and in particular MDG 2 "Achieve universal primary education". MDG 2 aimed to achieve 100% primary school enrolment, 100% completion of grades 1-5 and a literacy rate of 88% (Pakistan report, 2013). The Pakistan results were very disappointing. Primary school enrolment and completion rates increased until the mid-2000s, then slowed to 57% and then reduced to 50% in 2011/2012. The literacy rate reached 58%, however, this overall figure conceals wide disparities between men (70%) and women (47%). In 2013, a national action plan was launched to accelerate progress towards MDG 2 so that the target can be reached by 2015. Unfortunately, this action plan could not be implemented despite many initiatives to encourage school enrolment. The TAWANA (Healthy) project provided edible oil, pulses and rice to families to increase the school enrolment rate of children in rural areas. Girls received small allowances to encourage them to enroll and stay in school up to secondary level. From 2008 to 2015, incentives were given to students by providing them with free textbooks from the first to the tenth grade. The National Assembly of Pakistan has established a working group of elected members to review progress towards the MDGs. All these efforts have not been successful, so Pakistan has not achieved the MDGs (32% of children aged 5-9 years were still not at school in 2015).

In the official documents of the Pakistani government (national MDG report 2011 and 2013), there was mention of an inclusive, coherent, and collaborative strategy to achieve ambitious goals. This was part of an action plan, the Millennium Acceleration Framework (MAF), developed by the United Nations Development Programme (UNDP) to accelerate progress on the MDGs, particularly for countries that did not achieve the 2015 targets. While all successive Pakistan governments have sought to achieve the MDGs under international pressure, no single administration has actually defined a list of priorities or taken concrete measures.

Many reasons have been given by Pakistan governments to explain these failures: the military coup of October 1999, which changed the current regime and reduced efforts in the education system; the 2005 earthquake, which caused population displacements and disrupted the deployment of education policy; the post-2005 situation characterized by an increase in terrorist attacks and military operations in the north-western part of the country; the major flood of 2010; and the 2015 earthquake in the western province of Baluchistan. In addition to these natural disasters and human conflicts, internal problems such as corruption, incompetence of ministerial services, lack of monitoring mechanisms, accountability issues, political interference in educational institutions, absences of teachers, and unavailability of basic facilities (water, electricity, toilets) in schools should also be highlighted, and last but not least, the country's extreme poverty.

Poverty is a well-known phenomenon in Pakistan, with 29.5% of its population living below the poverty line ($1.25 per day is an international indicator of the poverty line). The triangle MDG - ODD - Poverty illustrates Pakistan's past and present situation. The close relationship between SDG 1 and SDG 4 reflects a well-known causality in developing countries, with poverty forcing large numbers of children to work to support and contribute to family income. Pakistan has a clearly visible poverty, despite a very flourishing economy (growth rate of 5.3% in 2016/2017, and a GDP close to 300 billion dollars). Some economists at the Karachi Centre for Social Policy and Development (SPDC) (Sabir, 2016) see it as a threshold effect, as growth is not yet strong enough to reduce poverty (figures in the order of 6% to 8% are put forward as being high enough to bring about a significant reduction in poverty). In other words, the salvation of education and the optimistic prospects for achieving the targets of SDG 4 are conditioned not by the Pakistani government's desire to improve its education system but by an objective of economic growth. Given the above-mentioned facts and the review of the SDGs, it would seem to be very difficult for Pakistan to prioritize ESD goals or synchronize its 2025 vision with that of the SDGs. The educational agenda is on the priority list (SDG 4), however no mechanism or reference framework has been proposed to implement such a program and achieve the targets within a reasonable timeframe. Most of the targets in SDG 4 are internal challenges. In 2015, the Pakistan government proposed an inclusive strategy, aimed at learning from the past and forging a challenging agenda, calling for (1) the formation of national and provincial working groups on the SDGs to obtain provincial input on national priority setting, (2) the establishment of dedicated SDG offices within the Ministry of Planning and Development to allow stakeholder consultation at the federal and provincial levels, (3) consultations and commitments at national level with all key stakeholders, including the business and media sectors, (4) strengthening national data sources through innovative and creative information technologies at all levels.

For a sustainable development program to be effective and bring about change for society, it must be based on the following four basic elements: (i) an ambitious vision for the future firmly rooted in human rights and universally accepted values and principles, including those set out in the Universal Declaration of Human Rights and the Millennium Declaration, (ii) a set of concise targets to achieve priorities, (iii) a global partnership for development to mobilize means of implementation, (iv) a participatory monitoring framework to integrate all stakeholders in decision-making.In Pakistan, the challenges posed by SDGs 1 and 4 can only be met through a three-pronged approach: coordinating and engaging all stakeholders (including NGOs) in a policy of poverty eradication through education; identifying and prioritizing the essential social development program tailored for each province; and redeploying and allocating appropriate resources through rigorous monitoring and control mechanisms. While poverty is not inevitable, it can very quickly become so if the country's population no longer has reason to hope for change.

Conclusion

If education for sustainable development has spread widely in developed and developing countries, it is mainly due to the United Nations program, set up by UNESCO from 2005 to 2014. During this decade, education for sustainable development became institutionalized so that it has become part of the basic curricula proposed by national guidelines or pedagogical guides. At the same time, development education has merged into the mainstream of education, breaking with the traditional disciplinary approach. It has generated a great deal of activity on the social representations of learners and teachers, on appropriate pedagogical approaches, didactic tools, and the skillsmobilized. The REDOC model today claims such a heritage, positioned in both the social and educational sciences, it constitutes a *modus operandi* to initiate changes in behavior or lead us to understand our differences. If education remains a factor of socialization, it is in diversity and not in homogenization that we must seek the keys to our future. The MDGs, then the SDGs, have boosted our appetite for complex and systemic thinking, for societal issues, for the values that a sustainable society must embody.

For some countries, like Pakistan, the SDGs are a long journey fraught with pitfalls and frustrations, for others, like Senegal, they are benchmarks against which to measure progress and continuously improve expected results. While the SDGs make education a priority target and have chosen to link education for sustainable development to SDG 4 Education Quality, they still struggle to advocate real change in society. Sustainable development risks once again preferring compromises to revolutions, at the risk of pushing back to 2050 the hopes of many citizens of the world.

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