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Sustainable development, Education for Sustainable Development, and the 2030 Agenda for Sustainable Development: Emergence, efficacy, eminence, and future

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Abstract

This paper aims to present a narrative of the outcome of an extensive historical literature review of global policy development and processes concerning the emergence, efficacy, and eminence of sustainable development, Education for Sustainable Development (ESD), and the 2030 Agenda for Sustainable Development (Sustainable Development Goals [SDGs]) inception to date. It starts by presenting the emergence, efficacy, and eminence of the concept and term "sustainable development" (which is integral to ESD) in terms of its historical definition, dimensions, understanding, interpretations, and challenges. It also highlights the take-up of sustainable development in terms of green growth, human development, and human agency. It then presents an overview of ESD, accompanied by a discussion of its key characteristics, approaches, and significances. The paper then highlights a semantic analysis of the development of ESD, with a special focus on some converging processes, events, concepts, discourses, and declarations that have supported the rise of ESD and shaped its status to date. Considerable emphasis is placed on the significance and nexus between environmental education and ESD. The paper analyses the crucial interconnection between education, sustainable development, ESD, the SDGs, and human development. Furthermore, the paper discusses the centrality of ESD to the global education discourse and the nexus, role, and relevance of education and particularly ESD in relation to the achievement of all the SDGs. The paper concludes by critically reflecting on the above, vis-à-vis the author's previous empirical research on higher ESD, making recommendations on the future of ESD research and practice.

KEYWORDS

2030 Education Agenda, education, Education for Sustainable Development (ESD), policy and practice, Sustainable Development Goals (SDGs), sustainable development

1 | INTRODUCTION

The first decade of the 21st century has been characterised by multi-faceted progress, environmental awareness, optimism, and innovation (Ramos, Caeiro, Pires, & Videira, 2018, p. 117). These have been coupled with the impact of continuously growing human systems, population increase, heightened global inequality, basic failures of economic systems, and worsening global environmental trends (Ramos et al., 2018). This paper presents an account of the emergence, efficacy, and eminence of the global conceptual framework including sustainable development, Education for Sustainable Development (ESD), and the 2030 Agenda for Sustainable Development (Sustainable Development Goals [SDGs]). These are global terminologies and frameworks, which are synonymous to "the way" to respond to

environmental, social, and economic system challenges, with stipulated local and global goals, guidelines, and solutions. This paper encapsulates the narrative of the outcome of a literature review of policy, processes, and practices related to these frameworks, with the trajectory of key global events, documentation, and timelines. These include the 1987 Brundtland Report of the World Commission on Environment and Development, also known as the Earth Summit, from which the widely accepted definition of sustainable development is drawn. It highlights the evolution, characteristics, and some understanding of the concept of sustainable development, as well as challenges, along with a description of its central pillars. The concept of ESD is defined and explained with its birth described in the context of Chapter 36 of *Agenda 21*, the main outcome of the 1992 United Nations Conference on Environment and Development, and in the effort to promote sustainable development through education. This paper acknowledges other recent related terminologies like Education for Sustainability, Environment and Sustainability Education, and Sustainability Education but chooses to be consistent with the use of ESD because it is most frequently used internationally, especially in the United Nations documents. Accordingly, the paper presents a semantic analysis and understanding of the development of ESD, with a special focus on some converging processes, events, discourses, and declarations that have supported the rise of ESD and shaped its status. It also presents an overview of ESD accompanied by a discussion of its key characteristics and significance. It provides a succinct analysis of the fundamental nexus between sustainable development, ESD, the SDGs, and human development. It shows the nexus between these and emphasises the role of education in achieving them. The paper discusses the centrality of ESD to the global education discourse as reflected in the 2030 development agenda on a global scale. It also brings into focus the nexus, role, and relevance of education and particularly ESD in relation to the achievement of all the SDGs, acknowledging other factors. The paper concludes with a reflection on the above, alongside the author's previous empirical research on higher ESD, and gives recommendations for the future of local and global ESD policy and practice.

2 | EMERGENCE, EFFICACY, AND EMINENCE OF SUSTAINABLE DEVELOPMENT

The term "sustainable development" from local and global perspectives constitutes the basis and ultimate goal of ESD. The concept has been present in indigenous cultures for thousands of years and in academic writings for several centuries, although the term itself is relatively new (Waas, Hugé, Verbruggen, & Wright, 2011). Between the 1960s and 1970s, the concept was used to suggest observable human interaction with the environment (United Nations Educational, Scientific and Cultural Organization [UNESCO], 2016). Key publications such as *The Limits to Growth: A report for the Club of Rome's project on the predicament of mankind* by Meadows, Meadows, Randers, and Behrens (1972) and *Silent Spring* by Carson (1962, 1994, 2002) generated global debate on the dangers and sustainability of human activities. The 1972 report of the United Nations Conference on the Human Environment in Stockholm then provided seminal ideas for sustainable governance in the context of global conversations (UNESCO, 2016; United Nations, 1972).

The term sustainable development first emerged globally in the 1980s in response to growing awareness of the need to balance social and economic development with environmental stewardship (Hattingh, 2002; UNESCO, 2002, 2005). Its initial usage at the global level can be traced to the 1980 World Conservation Strategy, which specified that sustainable development cannot be achieved without the conservation of living resources (IUCN-UNEP-WWF, 1980). The 1987 Brundtland Report of the World Commission on Environment and Development, widely referred to as *Our Common Future*, brought the term sustainable development to prominence, and it was endorsed at the United Nations General Assembly in the same year (Fincham, Georg, & Neilsen, 2004; UNESCO, 2014a, 2014b, 2016; United Nations, 1987). This report has been translated into over 20 main languages and published to ensure global accessibility.

Accordingly, although there is no single agreed interpretation of sustainable development (UNESCO, 2016), the widely accepted definition refers to "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (McKeown, 2002a; UNESCO, 2014a, p. 20; United Nations, 1987, p. 25). Sustainable development "requires meeting the basic needs of all and extending to all the opportunity to fulfil their aspirations for a better life" (United Nations, 1987, p. 25). Originally, the concept was considered as an organisational principle for global development that supports the well-being of both people and the planet, with the aim of bridging the gaps between environmental, economic, and social concerns (UNESCO, 2016). This principle has been commonly referred to as the three pillars of sustainable development, which place an emphasis on planet, prosperity, and people.

Moreover, the last few years have witnessed a gradual shift in the conceptualisation of sustainable development, with the concept presented as a principle or strategy not only for people, planet, and prosperity but also for peace and partnership, implying a win–win situation (Sachs, 2012; UNESCO, 2016; United Nations, 2015). Such a situation that exemplifies the nexus between the economic, social, and environmental dimensions of sustainability development was reviewed recently in a paper published by an international organisation, the Stakeholder Forum for a Sustainable Future, detailing an in-depth analysis of the SDGs[1] and their integration (Cutter, Osborn, Romano, & Ullah, 2015). It showed comprehensively the importance and ways of working with the SDGs effectively at various levels. Over the years, global discussions have emphasised the notion of "strong sustainability," which describes the interactions of society, economy, and environment within an interrelated and nested system (Hattingh, 2002; SARUA, 2014).

The "concept of sustainable development is not a simple one, and there is no road map to prescribe how we should proceed. Yet time is short, and we are called upon to act without delay" (UNESCO, 1997). Sustainable development is an ambitious agenda that longs to ensure that "no one is left behind" (United Nations, 2016). It has evolved over the past decades and continues to evolve in nature, understanding, uptake, adaptation, contextualisation, and critique. It is an abstract,

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[1]The SDGs are discussed in detail later.

difficult concept to define and frequently used but not a well-under-stood term (McKeown, 2002a). It has also been, for many, a contested concept and term (Huckle & Disinger in Jickling, 1992), with a vague slogan susceptible to manipulation (Jickling, 1992). Although sustainable development is a globally recognised process of change in its consistency in meeting both present and future needs, it has also been challenging, contested, contextual, unpredictable, and multifaceted. Despite the inherent opportunities it proffers, there are implicit and explicit tensions and contradictions in sustainable development and the recent associated SDGs (discussed later in the paper). In 1998, the United Nations Commission on Sustainable Development reviewed several chapters of *Agenda 21* from the Earth Summit (McKeown, 2002a; United Nations, 1992a).

It is pertinent that sustainable development involves the making of tough choices and decisions at local, national, regional, and international levels—both individually and collectively. Good governance and political will are necessary for the actual implementation of sustainable development plans and strategies in any context. Sustainable development has, therefore, become a fundamental component of policy frameworks because of its relevance in addressing challenges around the world. United Nations agencies, the international community, researchers, civil society organisations, corporate and private sectors, scientists, and bilateral and multilateral development partners have shaped the international understanding of sustainable development. In addition, it continuously requires novel and renewed partnerships and innovation from among stakeholders (UNESCO, 2002). Stakeholders, including corporate social responsibility in sustainable development, play a key role (Sidhoum & Serra, 2017). Stakeholder engagement in sustainable development-related corporate activities has been investigated and seems to lead to less damage to the environment (Salem, Shawtari, Shamsudin, & Hussain, 2017).

In the bid to conclude this section on the emergence, efficacy, and eminence of sustainable development (before discussing ESD), I focus the next paragraphs on the understanding of sustainable development in terms of green (economic) growth, human development, and agency. This is important because simply providing more education and ESD is not the only answer for creating a sustainable society, because global consumption patterns show that the most educated societies leave the deepest ecological footprints (Hopkins & McKeown, 2001; McKeown, 2002a). The fewer contributors are often the most negatively impacted by unsustainable practices. For example, the impact, adaptation, and vulnerability of climate change have been extensively documented (Intergovernmental Panel on Climate Change [IPCC], 2014a, 2014b, 2014c). There have also been scholarly discourses involving sustainability, climate change, and the green economy transition agenda (Nhamo & Mjimba, 2016).

The concept of green growth originated in 2005, from the Asia and Pacific Region at the Fifth Ministerial Conference on Environment and Development in Seoul, South Korea. At the conference, 52 governments and other stakeholders from Asia and the Pacific agreed to move beyond the sustainable development rhetoric and pursue a path of "green growth" (United Nations, n.d.). In 2011, the Organisation for Economic Co-operation and Development developed a green growth strategy.

There is no universally agreed definition of green growth (Bowen, 2012); despite this, it has been identified as an effective way of fostering economic growth and addressing environmental problems, although evaluating the practice has been difficult (Bowen, 2012; Guo, Qu, Wu, & Gui, 2018). In 2012, the World Bank published a report titled *Inclusive Green Growth: The Pathway to Sustainable Development*. On the one hand, it opines that inclusive green growth is *the* pathway to sustainable development, although there is an acknowledgement that (economic) "growth has too often come at the expense of the environment" (World Bank, 2012, p. xi). The report argues that "sustained growth is necessary to achieve the urgent development needs of the world's poor"; therefore, green growth is necessary, efficient, and affordable and is a vital tool for achieving sustainable development (World Bank, 2012). On the other hand, the Human Development Report 2016 argues that "sustainable development is an issue of social justice. It relates to intergenerational equity—the freedoms of future generations and those of today" (United Nations Development Programme [UNDP], 2016, p. 9). Consequently, the human development approach propounds that the "2030 Agenda and the SDGs are critical steps towards human development for everyone" (UNDP, 2016, p. 19).

> The human development approach reiterates that sustainable development is much broader than the protection of natural resources and the environment; that environmental degradation exerts larger, unequal impacts on poor, marginalized and vulnerable people; and that climate change affects the people and countries the most that have least contributed to it. From a human development perspective, sustainable development thus embodies social justice. (UNDP, 2016, pp. 93–94)

The 2030 Agenda for Sustainable Development has informed and contributed to the vision of the global human development approach, where indicators of both have been considered complementary and mutually reinforcing (UNDP, 2016). The human development approach also provided the platform and basis for the Millennium Development Declaration and Goals, which have invariably informed and influenced the 2030 Agenda and SDGs (UNDP, 2016). Sustainable development and ESD must, therefore, be about human development that also takes social–ecological relations into account (Lotz-Sisitka, 2011; Sen, 2009). As noted by Amartya Sen:

> If the importance of human lives lies not merely in our living standard and need-fulfilment, but also in the freedom that we enjoy, then the idea of sustainable development has to be correspondingly reformulated. ... We are not only "patients" whose needs deserve consideration, but also "agents" whose freedom to decide what to value and how to pursue what we value can extend far beyond our own interests and needs (2009, p. 251). ... We could [for example] choose to use our freedom to enhance many objectives that are not part of our own lives in a narrow sense (for example, the preservation of animal species that are threatened with extinction) .... (2009, p. 227)

In framing engagements with sustainable development concerns in this way, Sen (2009) provides an argument for foregrounding peoples' agency to deliberate the relationship between current sustainable development concerns and future generations' freedoms. He, therefore, positions sustainable development not simply as a matter of meeting needs of current and future generations (e.g., green growth) but in terms of the agency for deliberating valued beings, doings, and freedoms of current and future generations. A fundamental part of the 2030 Agenda and SDGs is recognition of the significant role that education and ESD had played and can play, particularly in providing the necessary platform and mechanisms for all humans to be active agents of change. Lotz-Sisitka (2018) noted that it is not the 17 SDGs and 169 targets that change the world but the people with the political will and ethical motives and resources to share that can and do change the world. Although it has been noted that the 2030 Agenda has come in "a time of decreasing options to sustain wellbeing within critical planetary boundaries and to deal with urgent sustainability threats, from global to local levels" (Ramos et al., 2018, p. 117), this danger in itself raises the need to create other options. McKeown (2002a) argued that

> The sustainability paradigm rejects the contention that casualties in the environmental and social realms are inevitable and acceptable consequences of economic development. ... [It is] a paradigm for thinking about a future in which environmental, societal, and economic considerations are balanced in the pursuit of development and improved quality of life.

3 | EMERGENCE, EFFICACY, AND EMINENCE OF EDUCATION FOR SUSTAINABLE DEVELOPMENT

ESD has its roots in the history of two distinct areas of interest to many stakeholders, especially for the United Nations—education and sustainable development. Before I highlight the converging processes that have influenced the emergence, efficacy, and eminence of global ESD, it seems useful to describe ESD. ESD is based on the principles and values that underlie sustainable development by ensuring the well-being of the five pillars (preferably interrelated spheres) of sustainability, including environment, society, economy, peace, and partnership (UNESCO, 2016). ESD requires the systematic or ad hoc integration, inclusion, or mainstreaming of crucial sustainable development issues and concepts into all forms and levels of teaching and learning. Such issues include climate change, food security, disaster risk reduction and management, biodiversity, poverty reduction, sustainable production and consumption, land degradation, water quality, health, plant and animal species extinction, waste management, and resource efficiency.

ESD is a dynamic concept and term that incorporates a new vision of a kind of education that seeks to empower people of all ages to take up the responsibility of creating a sustainable future (UNESCO, 2002, 2005, 2014a). ESD, therefore, makes it possible for every human being to acquire the knowledge, skills, attitudes, and values

necessary to shape a sustainable future. ESD provides knowledge, information, and facts about ever-changing planetary conditions and environmental issues, and their risks and causes. ESD empowers learners to make informed decisions and take responsible actions for environmental integrity, economic viability, and a just society, for present and future generations, while ensuring respect for cultural diversity (UNESCO, 2018). It prepares people to cope with and find solutions to problems that threaten the sustainability of the planet and social systems (UNESCO, 2007). It is interdisciplinary and transdisciplinary, meaning that no discipline can claim ESD as its own but all disciplines can respond and contribute to ESD individually and/or collectively.

ESD promotes lifelong learning experiences for all that are concrete, locally relevant, and culturally appropriate. It accommodates the evolving nature of the concept of sustainability and addresses content while taking into account context, local priorities, and global issues. ESD, therefore, responds to global needs, perceptions, and conditions, while acknowledging that satisfying local needs has international effects and consequences. ESD requires the use of participatory teaching and learning methods implemented within formal, informal, and nonformal systems of education to motivate and empower both learners and teachers to learn, reflect, change their behaviour, and take action for sustainable development. ESD consequently promotes competencies such as critical thinking, imagining better future scenarios, and making decisions in a collaborative way. It also requires far-reaching changes in the way education is delivered (UNESCO, 2014a).

4 | CONVERGING PROCESSES THAT INFLUENCED THE EMERGENCE, EFFICACY, AND EMINENCE OF EDUCATION FOR SUSTAINABLE DEVELOPMENT

Convergent Process 1: Emergence, efficacy, and eminence of Education for Sustainable Development through the 1990 Jomtien World Declaration on Education for All, 1992 Agenda 21, 1993/94 Environment and Population Education and Information for Human Development (EPD project)

Although education is integral to ESD, it has been noted that it was not shaped by the education community but rather initiated by people outside the education movement (McKeown, 2002a). Hence, the concept and content of ESD were developed by ministers, including those of health and environmental, and then handed over to educators to deliver (McKeown, 2002a). The 1990 Jomtien World Declaration on Education for All was the outcome of the World Conference on Education for All and constituted a *Framework for Action to Meet Basic Learning Needs*. The Declaration has been acknowledged to have played a significant role in the development of ESD because it propelled the understanding that "education can help ensure a safer, healthier, more prosperous and environmentally sound world, while simultaneously contributing to social, economic, and cultural progress, tolerance, and international cooperation" (World Conference on Education for All, 1990). The United Nations Conference on Environment

and Development, also known as the Earth Summit, took place in 1992 in Rio de Janeiro. This conference established a 40-chaptered *Agenda 21* as an action plan for governments and other relevant stakeholders towards the environment and sustainable development (UNESCO, 2014a, 2016; United Nations, 1992a). This was when the initial thoughts concerning ESD were captured in Chapter 36 of *Agenda 21* (McKeown, 2002a). *Agenda 21* was both a call and a mandate for a global partnership for sustainable development based on the UN General Assembly Resolution 44/228 of December 22, 1989. It was in response to nations' demand for a balanced and integrated approach to environmental and developmental concerns, presenting 18 principles of sustainability.

The term "environment and sustainable development" was used in *Agenda 21* and not "education for sustainable development." Chapter 36 of *Agenda 21* emphatically orients societies towards sustainable development through education. Education was recognised to be critical in achieving sustainable development through all the action areas described in Chapter 36 of *Agenda 21*, calling for efforts to improve learning opportunities by addressing unsustainable practices and promoting the quality of life across the globe (Tilbury, 2010; UNESCO, 2014a; United Nations, 1992a). Chapter 36, reviewed by the UN CDS (McKeown, 2002a), further emphasises three programme areas: (a) reorienting education towards sustainable development, (b) increasing public awareness, and (c) promoting training (UNESCO, 2014a; United Nations, 1992a). Chapter 36 also recommends that countries and regional and international organisations develop their own priorities and schedules for implementation in accordance with their needs, policies, and programmes. McKeown (2002a) noted that delegates of the CDS affirmed the importance of education in achieving sustainable development. However, she noted "growing frustration that education for sustainable development (ESD) was not advancing more rapidly; that no one had taken responsibility for ESD nor raised money to promote it; that no one knew where or how to start; and that people were pointing fingers at others, accusing them of not doing enough" (McKeown, 2002a). This propelled her to develop the *Education for Sustainable Development Toolkit*, published in 2000, with the help of Charles Hopkins, Regina Rizzi, and Marianne Chrystalbridge, who joined the effort later (McKeown, 2002a).

Following this, the 1992 Rio de Janeiro Earth Summit and the declaration of *Agenda 21*, the UNESCO was designated as Task Manager for Chapter 36 of *Agenda 21*, which focuses on education. This signalled a move within UNESCO's thinking related to environmental education (EE) to start merging various forms of education (including environment, population, and development) into a single, unifying concept that of "education for sustainable development." By then, UNESCO defined "environmental education" as "an interdisciplinary educational approach aimed at developing knowledge, skills, values and ethical behaviour in favour of a better quality of life and of the environment as a whole." This then serves the purpose of sustainable development as a type of development, which allows present generations to meet their basic needs without jeopardising the satisfaction of the basic needs of future generations (United Nations, 1987).

In 1994, the EPD project was launched. The project was designed to achieve "people-centred equitable and sustainable development through an integrated approach to the environment, population and development issues" (UNESCO, 1994). It was an interdisciplinary, interinstitution project with the United Nations Environment Programme (UNEP) and United Nations Population Fund in particular. This project was meant to merge different specific issues within a single, unifying concept—ESD. EPD went beyond formal teaching by proposing education via a number of channels (schools, business, the media, community organisations, and associations). Thus, EPD was situated within a general perspective of educational reorientation, or even educational reform, in direct keeping with the principles of lifelong education.

By 1996, the three programme areas of Chapter 36 of *Agenda 21* had evolved and became known as the four thrusts of ESD, with the inclusion of quality education: (a) access and retention in quality education, (b) reorienting education towards sustainable development, (c) building public awareness and understanding, and (d) training (McKeown, 2002b). The fact that education is included and is the first of these four thrusts (access and retention in quality education) is crucial because it acknowledges that quality education, and not any kind of education, is a prerequisite for all forms of development, including sustainable development. This fundamental thrust is also the crux of the 1990 Jomtien World Declaration on Education for All and constitutes the link between ESD and Education 2030. ESD is thus an essential part of a larger conversation regarding the quality of life for all (UNESCO, 2005).

Convergent Process 2: Emergence, efficacy, and eminence of education for sustainable development through environmental education and other education disciplines

> It is clear that the roots of education for sustainable development are firmly planted in environmental education. While environmental education is not the only discipline with a strong role to play in the reorienting process, it is an important ally. In its brief twenty-five year history, environmental education has steadily striven towards goals and outcomes similar and comparable to those inherent in the concept of sustainability. (UNESCO, 1997)

EE has a long history that gained international recognition at the 1970 meeting of the International Union for the Conservation of Nature and Natural Resources and the 1972 UN Conference on the Human Environment (Stockholm). Recommendation 96 of the Stockholm meeting called for the creation of an international programme on EE—interdisciplinary in approach, in school and out of school, encompassing all levels of education. The International Environmental Education Programme (1975–1995) gave practical guidance and a vision in support of this new and badly needed dimension of education. A partnership between UNESCO and the UNEP was established in the early 1970s to strengthen the International Environmental Education Programme (UNEP, 2008).

The International Conference on Environment and Society: Education and Public Awareness for Sustainability, organised by UNESCO and the Government of Greece, was designed to highlight the role of

education and public awareness for sustainability, to consider the important contribution of EE in this context, and to mobilise action to this end (UNESCO, 1997). In the resultant document by UNESCO entitled *Education for a Sustainable Future: A Transdisciplinary Vision for Concerted Action*, EE was mentioned 27 times. The Conference followed on from major meetings relevant to ESD, including one held in Tbilisi in 1977, Jomtien in 1990, Toronto in 1992, and Istanbul in 1993, as well as the series of United Nations conferences beginning in 1992 with Rio (environment and development) and followed in 1994 by Cairo (population; UNESCO, 1997). Furthermore, in 1995 Copenhagen (social development) and Beijing (women), and in 1996 Istanbul (human settlements), the 20th anniversary of the Tbilisi Conference, and the fifth anniversary of the Rio Conference, all provided a wealth of information on the situation in countries around the world (UNESCO, 1997).

Among other EE discourses, activities, and policies across the globe, the above have played a major role in influencing ESD. One such influence was the Declaration and Recommendations of the Belgrade Charter, written in the Final Report of the International Workshop on Environmental Education in 1975. Another is the first *Tbilisi Intergovernmental Conference on Environmental Education* held in 1977 under the auspices of UNESCO and UNEP. The second Tbilisi Declaration recommended that the principles, frameworks, and guidelines of EE be made accessible at local, national, regional, and international levels, and for all age groups, both inside and outside the formal school system (UNESCO, 1977). These recommendations are still valid and have not been fully explored, as noted in the following conferences: UNESCO-UNEP Congress on Environmental Education and Training in Moscow, August 1987, and the third International Conference Environment and Society: Education and Public Awareness for Sustainability, which was held in Thessaloniki, Greece (December 1997).

The Thessaloniki Declaration—a charter for the future of education for sustainability—explained that the "concept of sustainability encompasses not only the environment but also poverty, population, health, food security, democracy, human rights, and peace ... [of] a moral and ethical imperative" (UNESCO-EPD, 1997). It is worth noting that in only two of the 29 statements made in the Declaration was the term EE mentioned and that one of those references suggested that EE is referred to as education for environment and sustainability (Knapp, 2000, p. 32). Knapp (2000) therefore argued that "this scant use of the term environmental education indicates that the term is finding decreasing support in the international community.". The scant use was also a signal of a changing political economy around sustainable development and thus its educational proponents. There was significant contestation around the Thessaloniki Declaration, which has prompted scholars and practitioner such as Bob Jickling's responses and their continued argument for a strong focus on environment in ESD. Nonetheless, the Fourth International Conference on Environmental Education towards a Sustainable Future was held in Ahmedabad, India, in November 2007. By 2018, the World Environmental Education Congress had been running for 10 years.

In 1991, *Caring for the Earth: A Strategy for Sustainable Living* was published with the emphasis on "Environmental Education for

sustainable development" (IUCN-UNEP-WWF, 1980). By 2012, the Tbilisi+35 Intergovernmental Conference on Environmental Education was referred to as the Intergovernmental Conference on Environmental Education for Sustainable Development, in recognition of the fact that "environment education processes support and champion Education for Sustainable Development". This acknowledgement aimed to make explicit the important nexus between EE and ESD. The 2012 Tbilisi+35 Communiqué provided clear recommendations for governments and other relevant stakeholders on the implementation of ESD beyond 2014. Thus, EE and other education disciplines are both related to and have historically shaped and contributed to the vision of ESD through *Agenda 21*, United Nations Decade of Education for Sustainable Development (UNDESD), UN conferences, and other related global agendas. Nevertheless, it is noteworthy that in *Agenda 21*, the term "environmental education" was used only once in the 14 recommendations to promote sustainability, with the term "education for environment and sustainability" being preferred (Knapp, 2000).

From 2005 onwards, ESD began to take its place in existing core subjects and disciplines, on the basis that EE does not adequately honour the social and economic dimensions of inclusive education (McKeown & Hopkins, 2003). In addition, ESD and EE as concepts are often no longer assumed to be equal or equivalent, and the connection between them is increasingly downplayed (McKeown & Hopkins, 2003). Some countries call for a distinction to be made, and others for a convergence between EE and ESD (UNESCO, 2009). As at 1997, the Thessaloniki Declaration suggested that "environmental education be referred to as education for environment and sustainability" (UNESCO-EPD, 1997, p. 2), laying "a foundation for education for sustainability while neutralizing the term environmental education" (Knapp, 2000, p. 32). Knapp's (2000) review gives reasons why EE's position is in peril, provides a wake-up call for the EE profession, outlines strategies that must be pursued to protect the field from being consumed by another more politically correct movement, and offers a status report on the current criticisms and weaknesses of EE.

Nevertheless, in the Southern African region, particularly among the environmental educators and practitioners, the EE/ESD discourse and use is rife and uncontroversial. Here, ESD is embraced as a stand-alone concept, which articulates issues that have been grappled with since the formation of the Environmental Education Association of Southern Africa in 1982.[2] O'Donoghue (1993) presented an analysis of the conception and historical enactment of EE in Southern Africa. Some scholars still argue for and explicitly retain the EE/ESD connection, suggesting that the two concepts are more or less the same (Lotz-Sisitka & O'Donoghue, 2006; Lotz-Sisitka et al., 2015; Poeck, 2015; Robottom, 2013; Schudel, 2017). Although still referring to the EE/ESD connection, the emergence of the term Environment and Sustainability Education has been reviewed in the Southern African context (Mandikonza & Lotz-Sisitka, 2016).

In reality, the simultaneous existence and development of EE and ESD have resulted in a certain amount of confusion in policy formulation and implementation. Jickling (1992) argued that the proposed

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[2]http://eeasa.org.za/

development of the locution ESD, on the basis of the relationship between education and sustainable development, epitomises the conceptual muddle in which environmental educators found themselves in. The lack of clarity has sometimes led to inefficiencies in achieving goals and developing initiatives (Pavlova, 2011). Others use a broader ESD framework or include ESD themes and approaches in existing curricula yet refer to them as EE (Pavlova, 2011). Lotz-Sisitka (2007, p. 13), in a similar vein, making reference to scholars including Edgar González-Gaudiano, Rob O'Donoghue, Ian Robottom, Arjen Wals, and Bob Jickling, acknowledged the contestation in conceptualising the relationships in the field, stating

> Fifteen years after the Rio Earth Summit, there seems to be much uncertainty in the field as to how we should conceptualise the relationship between environment and sustainable development thinking. In some cases, authors in the journal appear to have resolved the dilemma by using both environmental education (EE)/ education for sustainable development (ESD), others traverse the terrain confidently using the concept of sustainability, while others refer to environment and sustainability as two separate, yet related, concepts, and others consider environmental education to be a vehicle for achieving sustainable development. (Lotz-Sisitka, 2007, p. 13)

Apart from EE, other education disciplines have also been instrumental in shaping the evolution of ESD. In 1996, the UN Commission on Sustainable Development adopted an international work programme on Chapter 36 of *Agenda 21*, with a call to UNESCO "to refine the concept and key messages of education for sustainable development, taking into account the experience of environmental education and integrating considerations pertaining to population, health, economics, social and human development, and peace and security." These include development education, peace education, global citizenship education (GCED), human rights education, outdoor education, nature study, conservation education, water education, geography education, social education, technology education, science education, and ethics education, all of which shaped ESD before and after 2005. Other international processes also contributed to ESD, especially in key thematic areas. For example, the Convention on Biological Diversity promotes biological diversity and its components through public education, awareness, and training (United Nations, 1992b). The emerging role of GCED as a field and as a praxis in achieving sustainable development needs to be recognised appropriately; based on the three domains of learning, cognitive, socioemotional and behavioural, GCED aims to empower learners of all ages to assume active roles, both locally and globally, in building more peaceful, tolerant, inclusive, and secure societies. Furthermore, the teachers, educators, practitioners, lecturers, and researchers integral to the above education disciplines all played (and still significantly continue to play) important and influential roles in the development of ESD within global education systems. The call to reorient education to address sustainable development, starting with a greater access to basic education, has always been made (Hopkins & McKeown, 2001).

Convergent Process 3: Emergence, efficacy, and eminence of ESD through the Earth Charter (2000); 2002 World Summit on Sustainable Development (WSSD); the Regional Centre of Expertise (RCE); the 2009 World Conference on Education for Sustainable Development; the United Nations Decade of ESD; and 2012 United Nations Conference on Sustainable Development (Rio+20)

The Earth Charter (2000) stressed that civil society's call for sustainability incorporates the general principle of "integrating into formal education and lifelong learning the knowledge, values, and skills needed for a sustainable way of life." By the 2000–2001 biennium, the EPD project became the Educating for a Sustainable Future. EPD helped prepare UNESCO's contribution to the 2002 WSSD in Johannesburg, including mobilising the non-governmental organisation community in favour of the Johannesburg Summit. The WSSD recommended ESD as a key concept in its implementation plan, highlighting the critical role education plays in sustainable development. The WSSD implementation plan suggested that sustainable development concepts, actions, and principles should be integrated into all levels of education, in order to promote education as a key agent for change (United Nations, 2002).

Following the 2002 Johannesburg Summit, the EPD unit became the ESD unit. The adoption by the UN General Assembly of the United Nations Decade of ESD (2005–2014) was renamed Section for DESD coordination. Thus, over the years, especially during the last decade, UNESCO has moved beyond the use of EE as a term to focus on ESD as a more appropriate term, providing a new direction for the education that is needed to address the current sustainability challenges of our world. In response, the United Nations General Assembly adopted UN Resolution 57/254 in December 2002, designating 2005–2014 the UNDESD (United Nations, 2002). The overall goal of the Decade was to integrate the principles, values, and practices of sustainable development into all aspects of education and learning and to encourage changes in knowledge, values, and attitudes with the vision of enabling a more sustainable and just society for all (UNESCO, 2005, 2014a, 2014b). Consequently, the United Nations General Assembly resolution 59/237 "encourages Governments to consider the inclusion ... of measures to implement the Decade in their respective education systems and strategies and, where appropriate, into national development plans" (UNESCO, 2005, p. 6). Furthermore, the General Assembly "invites Governments to promote public awareness of and wider participation in the Decade inter alia, through cooperation with and initiatives engaging civil society and other relevant stakeholders, especially at the beginning of the Decade" (UNESCO, 2005).

Under the International Implementation Scheme (UNESCO, 2005), the Decade was implemented in two distinct phases: The first phase (2005–2008) was invested in defining and promoting ESD, identifying actors, and developing partnerships. From the second phase (2009–2014), the emphasis shifted towards a renewed focus on advancing ESD in the context of quality education, with the focus on three key issues of climate change, biodiversity, and disaster risk reduction (UNESCO, 2014a). In 2005 still, the United Nations University, under the leadership of Charles Hopkins, established the RCE. In response to the UNDESD, United Nations University called for the

development of regional networks for the promotion of ESD. This multisector network of individuals, organisations, and experts uses education as a tool for creating a better society and attaining a sustainable future. They address local sustainable development issues and challenges through research and capacity development. RCEs aspire to achieve the goals of the DESD by translating its global objectives into the context of the local communities in which they operate (Global RCE Network, 2017).

In 2009, the World Conference on Education for Sustainable Development took place in Bonn, Germany. The outcome of the conference was the Bonn Declaration, which was adopted by 150 countries and 700 participants. This document represented a turning point in the visibility and understanding of ESD by ministers and provided the shift to the second phase of the Decade. The Declaration emphasised the importance of investing in ESD, referring to it as a "life-saving measure" for the future that empowers people for change (UNESCO, 2009, p. 1). The Declaration recommended promoting the ESD agenda as a contribution to education and to the achievement of quality education at national and international levels. The 2012, the United Nations Conference on Sustainable Development, also known as Rio+20, highlighted the commitment of governments to the mainstreaming of sustainable development by promoting ESD in accordance with the goals of the Decade (2005–2014).

Articles 11 and 12 of the Paris Agreement from Conference of the Parties to the United Nations Framework Convention on Climate Change emphasised the need for capacity building and education to enhance actions under the Agreement. To mark the end of UN Decade of ESD, the World Conference on ESD, tagged "Learning today for a sustainable future," took place in Aichi-Nagoya, Japan, in 2014. This produced the Aichi-Nagoya Declaration, which agreed to revisit the purpose of education systems with a view to adding a sustainable future as an overall purpose of formal education. As a follow-up to the UN Decade of ESD, the conference launched the Global Action Programme (GAP) on ESD (2015–2019). The overarching goal of GAP is to generate and scale up ESD action at all levels and in all areas of education and learning, in order to accelerate progress towards sustainable development (UNESCO, 2014a, 2014b, 2018).

Convergent Process 4: Emergence, efficacy, and eminence of ESD through the Millennium Development Goals (MDGs), post-2015 MDGs—2030 Education Agenda (post-2015 Sustainable Development Goals), GAP on ESD (2015–2019), 2017 ESD Goals learning outcomes, and the 2018 Issues and Trends in ESD

UNESCO is the lead agency on ESD, as recognised in the 2015 UN General Assembly Resolution 70/209 (UNESCO, 2018). In 2015, at the 70th Session of the UN General Assembly, Member States adopted a new global development agenda and published a document entitled *Transforming Our World: The 2030 Agenda for Sustainable Development*. The 17 SDGs and 169 target areas, which replaced the MDGs, are a set of global, regional, and national goals with an explicit path towards sustainability. Although considerable progress was made in achieving the MDGs by 2015, the recorded progress is dependent on the specific region, country, and goal (Sachs, 2012). Uneven

success[3] and considerable failures have also been experienced and recorded.[4] The achievement of many MDGs has also been attributed to the work of stakeholders and local governments (UNDG, 2014). Experiences and lessons learned in implementing the MDGs have been harnessed by the UN Member States and informed the post-2015 development agenda and the SDGs (UNDG, 2014). The current agenda unites global development and environmental sustainability in a single framework on the understanding that a healthy planet is integral to human development (UNESCO, 2016). The 2030 Agenda for sustainable development document does not refer to EE (United Nations, 2015).

In 2015 still, the World Education Forum adopted the Incheon Declaration, also known as the Education 2030 Agenda. Education 2030 emphasises the quality and relevance of education as a public good. The 2030 vision aims to transform education on the basis that education is the key driver of development and quintessential for achieving all the SDGs (World Education Forum, 2015). The vision is clearly linked to SDG 4, which aims to "ensure inclusive and equitable quality education and promote lifelong learning opportunities for all" (Open Working Group, 2014, p. 10; United Nations, 2015, p. 21). The Incheon Declaration states that "quality education fosters creativity and knowledge, also develops the skills, values, and attitudes that enable citizens to lead healthy and fulfilled lives, make informed decisions, and respond to local and global challenges through ESD" (World Education Forum, 2015, p. 2).

The SDGs developed by the international community are action oriented, global in nature, and universally applicable (Cutter et al., 2015; Open Working Group, 2014; UNESCO, 2014b; United Nations, 2014). There are 17 SDGs with 169 associated, integrated, and indivisible targets (Cutter et al., 2015; Open Working Group, 2014; UNESCO, 2014b; United Nations, 2014). These represent common action and endeavours across the board, and a universal policy agenda, pledged by world leaders, and set the path towards global human development and sustainable development. Goal 4 of the SDGs focuses on "achieving inclusive and equitable quality education and promoting lifelong learning opportunities for all." This is the aim of Target 4.7 of Goal 4:

> *By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through Education for Sustainable Development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and nonviolence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development. (Open Working Group, 2014, p. 10; United Nations, 2015, p. 21)*

[3]http://newirin.irinnews.org/dataviz/2015/7/7/millenium-development-goals-success-failure

[4]https://borgenproject.org/mdg-failures/; https://www.thenews.com.pk/print/191044-why-have-the-mdgs-failed; http://theconversation.com/how-the-millennium-development-goals-failed-the-worlds-poorest-children-44044; https://www.triplepundit.com/2015/06/study-reveals-failure-achieve-u-n-environmental-sustainability-goal/

Target 4.7 acknowledges that ESD explicitly promotes sustainable development and that, through ESD (including other education disciplines and strategies), learners can acquire the knowledge and skills needed to promote sustainable development. ESD, mentioned only once in the Education 2030 Agenda and in Target 4.7, is an indication that ESD is "not the only way" but "one good way" of achieving the SDGs. SDG Target 12.8 further aims: "By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature" (Open Working Group, 2014, p. 18; United Nations, 2015, p. 27). The quality and relevant education that ESD epitomises are key to ensuring that people have such information and awareness and are able to make the decision to inculcate corresponding lifestyles and attitudes in harmony with nature.

ESD is also indirectly linked to SDG Goal 13, which aims to "take urgent action to combat climate change and its impacts." SDG Target 13.3 is concerned with the importance of ESD as a means to "improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning" (Open Working Group, 2014, p. 19; United Nations, 2015, p. 27). It is important to note that although Targets 12.8 and 13.3 are indirectly linked with Target 4.7, Education and particularly ESD is the cross-cutting means to the successful implementation of all SDGs. The Education 2030 vision fully supports the implementation of the GAP on ESD. The GAP aims to contribute to the post-2015 Education 2030 Agenda through five priority action areas: "1. Advancing policy, 2. Transforming learning and training environments, 3. Building capacities of educators and trainers, 4. Empowering and mobilizing youth, 5. Accelerating sustainable solutions at the local level" (UNESCO, 2014b, p. 15). The Education 2030 Agenda identifies these priority areas as integral to quality education, as both prerequisites and outcomes.

In 2016, the *Global Education Monitoring Report* highlighted the importance of education in achieving all the SDGs over the next 15 years. In particular, the report highlighted the urgent need for new approaches, the importance of long-term commitments to SDG 4, and the need for drastic change in ways of thinking about education and its implication for human well-being and global development (UNESCO, 2016). This suggests that the potential of education to transform our world cannot be realised unless the education system embraces sustainable development. In 2017, UNESCO published a document entitled *ESD Goals: Learning Outcomes*. It acknowledges again that the SDGs are an ambitious and universal agenda to transform our world and ESD is a key instrument to achieve the SDGs (UNESCO, 2017). Highlighted are three clusters of learning objectives: cognitive, socioemotional, and behavioural (which resonates with that of the aforementioned GCED); topics for each SDG; and examples of learning approaches and methods. Research-based analysis of ESD processes in different learning settings (such as schools, colleges, or nonformal educational institutions) and practical experiences with ESD approaches and their critical reflection have been encouraged (UNESCO, 2017, p. 52).

In 2018, the fifth UNESCO's Education on the Move series, which reviews trends in education today and challenges for tomorrow, *Issues and trends in ESD*, was published (UNESCO, 2018). This publication presents an overview of ESD and highlights key issues related to ESD policy and practice, with topics including key ESD competencies

and themes, policy, changes in the learning environment, teacher training, youth as lead actors, scaling-up action, and the monitoring of progress towards Target 4.7 (UNESCO, 2018).

5 | CONCLUSION, REFLECTION, AND RECOMMENDATIONS FOR THE FUTURE OF EDUCATION FOR SUSTAINABLE DEVELOPMENT

This paper examines the development of the ideas and concepts of sustainable development and ESD, and the 2030 Education Agenda. In doing so, it explores the emergence, efficacy, and eminence of the discourses and events around these concepts through four historically convergent processes. These convergent processes encapsulated key (mostly) global declarations, reports, communiqués, agendas, and conferences that contributed to the emergence of ESD, mainly in the policy arena. The paper explored the crucial nexus between education, sustainable development, ESD, the SDGs, and human development. It highlights the major role that education, and particularly ESD, can play in the actualisation of sustainable development and the SDGs. A critical reflection on key determining factors for the future of a more progressive ESD and corresponding recommendations is presented.

Education can be humanity's most powerful transformation and transformative force; it can also be a conservative force. In global public policy, at least since 1945, education has been upheld as a human right and a public good (Daviet, July 2016). Education is also an essential tool for achieving a sustainable future (Hopkins & McKeown, 2001). Rethinking the purpose of education, how learning is organised, and emphasising education as a public good are global clarion calls (Daviet, July 2016; UNESCO, 2015). Education in its totality is indispensable in achieving the 2030 Agenda and the SDGs. Key questions in this regard are "What education do we need for the twenty-first century? What is the purpose of education in the current context of societal transformation? How should learning be organized?" (UNESCO, 2015). Acknowledging and embracing ESD and the synergies between quality, relevant education, and ESD are, therefore, a stepping stone to achieving Education 2030 Agenda and other global agendas. In particular, effective ESD learning processes can contribute to educational quality and relevance (Lupele & Lotz-Sisitka, 2012). However, commitment on the behalf of governments and coordinated partnerships to promote ESD at all levels and across sectors is essential for successful implementation of the agenda both in the short term and long term.

To date, ESD has been promoting the knowledge, skills, attitudes, and values that empower learners to make informed decisions and responsible actions for environmental integrity, economic viability, and a just society (UNESCO, 2018). In short, as early as 2002, it has been argued that "progress has been made in ESD" (McKeown, 2002b) and "past experience, present activities, future promise of ESD" have been highlighted (Hopkins & McKeown, 2001). ESD is placed at the centre of the 2030 Sustainable Development Agenda and has been widely recognised as a key enabler of sustainable development and an integral element of quality education (UNESCO, 2018). Efforts have been undertaken to mainstream ESD in education policies, curricula, and teacher training. The need for integrating recent

developments relevant to sustainable development into education and integrating education into sustainable development, especially around the 17 SDGs, is greater than ever. There have been many discussions about the changes in the concept of education in the 21st century. There is a growing consensus that the classic one-way delivery of knowledge by a teacher or lecturer through a written textbook in a classroom confirmed by written tests no longer fully serves the need of the learners. The roles of formal, nonformal, and informal education need to be revisited to integrate the key competencies for sustainable development, through diverse experiential learning and peer influences.

With the launch of the 17 SDGs, continents, regions, countries, institutions, and individuals are supposed to be committed to achieving progress for sustainable development more than ever. Intentional, strategic, and continuous integration or mainstreaming of sustainable development into education at all levels is also in demand. ESD by its definition and praxis is increasingly understood as the cross-cutting, multidisciplinary, interdisciplinary, and multisectoral means for sustainable development and all areas of SDGs. However, further discussion and strategic plans to place ESD with regard to the successful implementation of all SDGs are needed. The tension and contradictions inherent in the SDGs have been particularly noted during the 2018 Seedbeds for Transformation Conference in South Africa (Future Earth, 2018).

Drawing on Sen (2009), the concern for sustainable development needs to be considered in the context of people's agency to deliberate the relationship between current sustainable development concerns and unsustainable practices and future generations' freedoms. Accordingly, sustainable development and ESD should be positioned, not only as a matter of meeting the needs of current and future generations but also in terms of the agency for deliberating valued beings, doings, and freedoms of current and future generations. Hence, the take-up and implementation of ESD principles, policy, strategy, and activities should foreground valued beings, doings, and freedoms of everyone, individually and collectively.

The role of government, non-governmental organisations, institutions, sectors, civil societies, schools, higher education, teachers, and educators in this agenda cannot be overemphasised. There is need to engage strategically and concurrently with a multicontinent, multiregion, multicountry, and multilevelled programme supporting people (academics, nonacademic, schools, teachers, institutions, and government) to deliberate different ways of integrating environment and sustainability concerns into praxis at various levels, for example, in the education system through local, institutional, national, or international ESD professional training and learning programmes. The urgent need for professional development of ESD stakeholders cannot be ignored nor postponed anymore. Consequently, people's agency becomes intentionally and strategically engaged through professional learning and training and elaborated afterward, in order to enhance human development, which arguably should lead to some forms of sustainable development in the short term and long term.

The availability of institutional and national ESD-related policy frameworks and strategies can support effective ESD mainstreaming and achievement of the SDGs. The lack of such policies or their lack of practical individual and structural implementation can constrain and inhibit effective ESD mainstreaming. Furthermore, the influence of position-practice systems and its associated sphere of influence is significant for sustainable development and ESD transformations in any context. The position-practice system emphasises the sphere of influence of all human agency operating within social structures, which ultimately determines the transformation or reproduction of social structures (Bhaskar, 1979, 1989, 1998). The influence can either be enabling or constraining in the context of the transformation of social structures and scaling up of ESD action locally and globally. Arguably, only certain forms of ESD implementation process can be "easily" facilitated by certain position-practice systems without reference or dependence on others. Change proposed by or expected of agents should be considered and supported with due consideration of the agents' position-practice system and sphere of influence in time and in space.

Education is essential for improving the capacity of these people to address environmental and development issues, which are inextricably tied to sustainable development (Hopkins & McKeown, 2001). In higher education, for example, cross-faculty curriculum dialogue and capacity development approach to ESD are inevitable. Capacity building of and strategic engagement with academics from different faculties can potentially reduce or totally prevent the commonplace transdisciplinary and interdisciplinary ESD mainstreaming constraints that many academics experience during ESD change processes. If this is not included, institutional ESD learning and change processes will be slow or become completely impossible in higher education institutions. There is a real need to engage educators in constructing and contextualising policy discourse on ESD. Educators need the vision not only to adopt but also to construct, preferably through a thoughtful process of critical inquiry, reflection, and dialogue, their own understanding of sustainable development that can guide them in their curriculum planning and teaching. After all, the educators' own understanding of social, environment, and sustainability concepts, issues, and risks will shape their preferences and resultant pedagogical practices in ESD.

Professional and non-professional network structures that are aligned with the objectives of change-oriented ESD initiatives can also greatly facilitate change-oriented praxis, as these provide an enabling mechanism for deliberating feasible changes. Available ESD network structures and multilevel stakeholder engagements that are effective and productive for effective ESD mainstreaming should be identified, engaged, and maximised. In an open system marked with unpredictability, employing context-dependent and relevant multiple approaches and strategies for ESD in a learning process is required. Learning, action, and change need to be continuous, spontaneous, and dynamic in order to achieve local, national, and global sustainable development agendas.

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REFERENCES

Bhaskar, R. (1979, 1989, 1998). *The possibility of naturalism* (1st, 2nd, 3rd ed.). Sussex; Hemel Hempstead; New York: The Harvester Press; The Havester Press; Routledge.

Bowen, A. (2012). *'Green' growth: What does it mean?* London: Environmental Scientist.

Carson, R. (1962, 1994, 2002). *Silent spring* (1st, 2nd, 3rd ed.). New York: Houghton Mifflin Harcourt Publishing Company.

Cutter, A., Osborn, D., Romano, J., & Ullah, F. (2015). Sustainable development goals and integration: Achieving a better balance between the economic, social and environmental dimensions. A study commissioned by the German Council for Sustainable Development: Stakeholder Forum.

Daviet, B. (July 2016). *Education research and foresight working papers: Revisiting the principles of education as a public good*. Paris: UNESCO.

Fincham, R., Georg, S., & Neilsen, E. (Eds.) (2004). *Sustainable development and the university: New strategies for research teaching and practice*. Howick: Brevitas.

Future Earth. (2018, May 9). Seedbeds for transformation conference in South Africa. Port Elizabeth, Eastern Cape, South Africa: Future Earth https://www.facebook.com/futureearth.org/videos/1779126972110844/.

Global RCE Network. (2017, March 23). RCE vision and mission. Retrieved from Global RCE Network website: http://www.rcenetwork.org/portal/rce-vision-and-mission

Guo, L., Qu, Y., Wu, C., & Gui, S. (2018). Evaluating green growth practices: Empirical evidence from China. *Sustainable Development*, *26*, 302–319. https://doi.org/10.1002/sd.1716

Hattingh, J. (2002). On the imperative of sustainable development: A philosophical and ethical appraisal. In E. Janse van Rensburg, H. Lotz-Sisitka, & R. O'Donoghue (Eds.), *Environmental education, ethics and action in Southern Africa* (pp. 5–16). Pretoria: Human Sciences Research Council (HSRC).

Hopkins, C., & McKeown, R. (2001). Education for Sustainable Development. *Forum for Applied Research and Public Policy*, *93*(1), 25–28.

Intergovernmental Panel on Climate Change (2014a). In C. B. Field, V. R. Barros, D. J. Dokken, K. J. Mach, M. D. Mastrandrea, T. E. Bilir, et al. (Eds.), *Climate change 2014: Impacts, adaptation, and vulnerability. Part A: Global and sectoral aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge: Cambridge University Press.

Intergovernmental Panel on Climate Change (2014b). In C. B. Field, V. R. Barros, D. J. Dokken, K. J. Mach, M. D. Mastrandrea, T. E. Bilir, et al. (Eds.), *Climate change 2014: Impacts, adaptation, and vulnerability. Part B: Regional aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge: Cambridge University Press.

Intergovernmental Panel on Climate Change (2014c). In C. B. Field, V. R. Barros, D. J. Dokken, K. J. Mach, M. D. Mastrandrea, T. E. Bilir, et al. (Eds.), *Climate change 2014: Impacts, adaptation, and vulnerability—Summary for policymakers*. Cambridge: Cambridge University Press.

IUCN-UNEP-WWF. (1980). World Conservation Strategy: Living resources conservation for sustainable development. IUCN-UNEP-WWF.

Jickling, B. (1992). Viewpoint: Why I don't want my children to be educated for sustainable development. *Journal of Environmental Education*, *23*(4), 5–8. https://doi.org/10.1080/00958964.1992.9942801

Knapp, D. (2000). The Thessaloniki Declaration: A wake-up call for environmental education? *The Journal of Environmental Education*, *31*(3), 32–39. https://doi.org/10.1080/00958960009598643

Lotz-Sisitka, H. (2007). Think piece—An opening dialogue with think pieces and feature articles on learning in a changing world in this journal. *Southern African Journal of Environmental Education*, *24*, 8–18.

Lotz-Sisitka, H. (2011). The 'event' of the modern sustainable development and universities in Africa. In GUNI. In *Higher education in the world 4: Higher education's commitment to sustainabiliy: From understanding to action (GUNI series on the commitment of universities)* (pp. 41–68). London: Palgrave Macmillan.

Lotz-Sisitka, H. (2018, May 9). *Tensions and contradictions in the SDGs in Africa*. Port Elizabeth, Eastern Cape, South Africa: Future Earth https://www.facebook.com/futureearth.org/videos/1779126972110844/

Lotz-Sisitka, H., Naituli, G., Hlengwa, A., Ward, M., Salami, A., Ogbuigwe, A., … Lauriks, S. (Eds.) (2015). *Mainstreaming environment and sustainability in African universities: Stories of change*. Grahamstown: Rhodes University Environmental Learning Research Centre.

Lotz-Sisitka, H., & O'Donoghue, R. (2006). Situated environmental learning in Southern Africa at the start of the UN decade of education for sustainable development. *Australian Journal of Environmental Education*, *22*(1), 105–113.

Lupele, J., & Lotz-Sisitka, H. (2012). *Learning today for tomorrow: Sustainable development learning processes in Sub-Saharan African*. Howick: SADC REEP.

Mandikonza, C., & Lotz-Sisitka, H. (2016). Emergence of environment and sustainability education (ESE) in teacher education contexts in Southern Africa: A common good concern. *Educational Research for Social Change (ERSC)*, *5*(1), 107–130. https://doi.org/10.17159/2221-4070/2016/v5i1a7

McKeown, R. (2002a). Education for Sustainable Development Toolkit version 2.0. Retrieved from http://www.esdtoolkit.org/about.htm

McKeown, R. (2002b). Progress has been made in Education for Sustainable Development. *Applied Environmental Education and Communication: An International Journal*, *1*(1), 21–23. https://doi.org/10.1080/15330150213983

McKeown, R., & Hopkins, C. (2003). EE ≠ ESD: Diffusing the worry. *Environmental Education Research*, *9*(1), 117–128. https://doi.org/10.1080/13504620303469

Meadows, D. H., Meadows, D. L., Randers, J., & Behrens, W. W. III (1972). *The limits to growth: A report for the Club of Rome's project on the predicament of mankind*. New York: Universe Books.

Nhamo, G., & Mjimba, V. (Eds.) (2016). *Sustainability, climate change and the green economy*. Pretoria: African Institute of South Africa.

O'Donoghue, R. (1993). Clarifying environmental education: A search for clear action in Southern Africa. *Southern African Journal of Environmental Education*, *13*, 28–38.

Organisation for Economic Co-operation and Development (2011). *Towards green growth*. Paris: OECD.

Open Working Group. (2014). Open Working Group proposal for Sustainable Development Goals. United Nations.

Pavlova, M. (2011). *Environmental education and/or Education for Sustainable Development: What role for technology education?* Griffith: Griffith Research Online.

Poeck, K. V. (2015). Education as a response to sustainability issues. Practices of environmental education in the context of the UN Decade of Education for Sustainable Development. *Environmental Education Research*, *21*(4), 649–649. https://doi.org/10.1080/13504622.2014.958651

Ramos, T. B., Caeiro, S., Pires, S. M., & Videira, N. (2018). How are new sustainable development approaches responding to societal challenges? *Sustainable Development*, *26*(2), 117–121. https://doi.org/10.1002/sd.1730

Robottom, I. (2013). Changing discourses in EE/ESD: A role for professional self-development. In R. Stevenson, M. Brody, J. Dillon, & A. Wals (Eds.), *International handbook of research on environmental education* (pp. 156–162). New York: The American Educational Research Association. https://doi.org/10.4324/9780203813331.ch16

Sachs, J. D. (2012). From Millennium Development Goals to sustainable development goals. *Lancet*, *379*, 2206–2211.

Salem, M. A., Shawtari, F., Shamsudin, M. F., & Hussain, H. B. (2017). The consequences of integrating stakeholder engagement in sustainable development (environmental perspectives). *Sustainable Development*, *26*(3), 255–268.

SARUA (2014). *SARUA climate change counts mapping study: Knowledge co-production framework' (volume 1)*. Johannesburg: SARUA.

Schudel, I. (2017). Modelling dialectical processes in environmental learning: An elaboration of Roy Bhaskar's onto-axiological chain. *Journal of Critical Realism*, *16*(2), 163–183. https://doi.org/10.1080/14767430.2017.1288061

Sen, A. (2009). *The idea of justice*. Cambridge: Belknap Press of Harvard University Press.

Sidhoum, A. A., & Serra, T. (2017). Corporate sustainable development: Revisiting the relationship between corporate social responsibility dimensions. *Sustainable Development*, *26*(4), 365–378.

World Bank (2012). *Inclusive green growth: The pathway to sustainable development*. Washington, DC: The World Bank. https://doi.org/10.1596/978-0-8213-9551-6

Tilbury, D. (2010). Are we learning to change? Mapping global progress in Education for Sustainable Development in the lead up to 'Rio Plus 20'. *Global Environmental Research*, *14*, 101–107.

UNDG. (2014). *Delivering the post-2015 development agenda: Opportunities at the national and local levels*. United States of America: United Nations.

United Nations Environment Programme (2008). *Mainstreaming environment and sustainability in African Universities Partnership (2004–2008 report)*. Nairobi: UNEP in collaboration with the Environmental Education & Sustainability Unit, Rhodes University, South Africa.

United Nations Educational, Scientific and Cultural Organization (1994). *Environment and Population Education and Information for Human Development (EPD): UNESCO's interdisciplinary and inter-agency cooperation project*. Paris: UNESCO.

United Nations Educational, Scientific and Cultural Organization. (1997). *Education for a sustainable future: A transdisciplinary vision for concerted action*. Retrieved from UNESCO: http://www.unesco.org/education/tlsf/mods/theme_a/popups/mod01t05s01.html

United Nations Educational, Scientific and Cultural Organization (2002). *From Rio to Johannesburg: Lessons learnt from a decade of commitment*. Johannesburg: UNESCO.

United Nations Educational, Scientific and Cultural Organization. (2005, October). *United Nations Decade of Education for Sustainable Development (2005–2014): International implementation scheme*. Retrieved January 12, 2012, from http://unesdoc.unesco.org/images/0014/001486/148654e.pdf

United Nations Educational, Scientific and Cultural Organization (2007). *The UN Decade of Education for Sustainable Development (DESD 2005–2014): The first two years*. Paris: UNESCO.

United Nations Educational, Scientific and Cultural Organization (2009). *Bonn Declaration*. In *UNESCO World Conference on Education for Sustainable Development* (pp. 1–6). Bonn: UNESCO.

United Nations Educational, Scientific and Cultural Organization (2014a). *Shaping the future we want: UN Decade of Education for Sustainable Development (2005–2014) final report*. Paris: UNESCO.

United Nations Educational, Scientific and Cultural Organization (2014b). *UNESCO roadmap for implementing the Global Action Programme on Education for Sustainable Development*. Paris: UNESCO.

United Nations Educational, Scientific and Cultural Organization (2015). *Rethinking education: Towards a global common good?* Paris: UNESCO.

United Nations Educational, Scientific and Cultural Organization (2016). *Global education monitoring report-place: Inclusive and sustainable cities*. Paris: UNESCO.

United Nations Educational, Scientific and Cultural Organization (2017). *Education for Sustainable Development Goals: Learning objectives*. Paris: UNESCO.

United Nations Educational, Scientific and Cultural Organization (2018). *Issues and trends in Education for Sustainable Development*. Paris: UNESCO.

United Nations Educational, Scientific and Cultural Organization (1977). *Tbilisi Declaration*. In *Intergovernmental conference on environmental education* (pp. 1–4). Tbilisi: UNESCO.

UNESCO-EPD (1997). *Declaration of Thessaloniki*. Paris: UNESCO-EPD.

United Nations (1972). *Report of the United Nations conference on the human environment*. Stockholm: United Nations.

United Nations. (1987). Report of the World Commission on Environment and Development: Our common future. www.un-documents.net/our-common-future.pdf: United Nations-WCED-World Commission on Environment and Development.

United Nations (1992a). Agenda 21. In *United Nations Conference on Environment and Development* (pp. 1–351). Rio de Janeiro: United Nations.

United Nations (1992b). *Convention on biological diversity* (pp. 1–30). Paris: United Nations.

United Nations (2002). Report of the World Summit on Sustainable Development. In *World Summit on Sustainable Development* (pp. 1–174). Johannesburg: United Nations.

United Nations. (2014). Report of the Open Working Group of the general assembly on sustainable development goals. United Nations.

United Nations (2015). *Transforming our world: The 2030 Agenda for Sustainable Development A/RES/70/1*. New York: United Nations.

United Nations (2016). *Global Sustainable Development Report 2016*. New York: United Nations Department of Economic and Social Affairs.

United Nations. (n.d.). Green growth. Retrieved from Sustainable Development Goals: Knowledge platform: https://sustainabledevelopment.un.org/index.php?menu=1447

United Nations Development Programme (2016). *Human Development Report 2016: Human development for everyone*. New York: United Nations Development Programme.

Waas, T., Hugé, J., Verbruggen, A., & Wright, T. (2011). Sustainable development: A bird's eye view. *Sustainability*, *3*, 1637–1661. https://doi.org/10.3390/su3101637

World Conference on Education for All (1990). *Meeting basic learning needs: A vision for the 1990s*. New York: The Inter-Agency Commission—(UNDO, UNESCO, UNICEF, World Bank) for WCEFA.

World Education Forum (2015). *Incheon Declaration–Education 2030: Towards inclusive and equitable quality education and lifelong learning for all* (pp. 1–5). Incheon: World Education Forum.