European Journal of Alternative Education Studies
ISSN: 2501-5915
ISSN-L: 2501-5915
Available on-line at: www.oapub.org/edu

DOI: 10.46827/ejae.v6i2.3803 Volume 6 | Issue 2 | 2021

ENVIRONMENTAL EDUCATION AND SUSTAINABILITY: AN ANALYSIS OF THE RELATIONSHIP BETWEEN PEDAGOGY AND NATURE IN ITALIAN AND INTERNATIONAL DOCUMENTS[i]

Alessandra Natalini[ii]
Graduated Primary Teacher,
Education Sciences,
University of Roma Tre,
Rome, Italy
and
Primary School Teacher,
Rome, Italy

Abstract:
In a general sense, environmental education can be understood as a process that leads to a better understanding of the relationship between man and the natural environment, and sustainability as the possibility for those who come after us to be able to do the same things we can do today. Environmental education and sustainability as such imply collaboration between all social actors in the prevention and resolution of environmental problems. Direct contact with nature in education implies the assumption of a holistic approach, which sees in the relationship between economics, politics, society and ecology a useful tool for educating the new generations, as already widely noted by prominent early 20th century pedagogues such as Giuseppina Pizzigoni. Environmental education is therefore a type of holistic and lifelong education, including education "about, for and through" the environment, the importance of which has grown over time, partly as result of increasingly frequent environmental disasters. These have been followed by various measures, such as the Tbilisi Declaration, the Declaration of the Rights of Nature, the Brundtland Report, the Kyoto Protocol, the Aahrrus Convention, Agenda 2021, Agenda 2030 and so on, in which environmental education and sustainability have been strongly linked to educational processes, so much so that, in Italy, they have been treated in an interdisciplinary key and borrowed in the National Indications (MIUR, 2012) and the National Indications and New Scenarios (MIUR, 2018), as well as in the 2014 Environmental Education Guidelines for Sustainable Development. The contribution, starting from data considerations, focuses on the construction of attitudes, behaviours and conducts in school contexts related to care and protection, as well as environmental

[i] EDUCAZIONE AMBIENTALE E SOSTENIBILITÀ: UN'ANALISI DELLA RELAZONE TRA PEDAGOGIA E NATURA NEI DOCUMENTI ITALIANI ED INTERNAZIONALI

[ii] Correspondence: email drana@hotmail.it

awareness, which are combined with those of protection and teaching capable of reading and preserving the environment from the perspective of sustainability.

Keywords: environmental education, sustainability, sustainable development, education

1. The importance of learning "from, with and through" the environment in the relationship between pedagogies and nature through Italian and international measures

Environmental education is "*the process that enables us to gain a better understanding of the relationships that exist between man and the natural environment and that allow life on this earth*" (Pennisi & Zavalloni, 1992, p. 9). It must be used to create a new culture, starting with the education of future generations, which can give rise to cognitive, affective and protective behaviour towards the environment (Iavarone *et al.*, 2017), so that they learn to reason and make responsible choices to become active citizens. The relationship between society, politics and education is central to future development and must move from the idea that environmental protection is an end and a value in the idea of "common good", understood as a space of participation and heritage that guarantees and promotes the well-being and human progress of all citizens (Parricchi, 2015). In the awareness that it is "*time to realise that we are citizens of the world, that we belong to the world, that the world does not belong to us*" (Pennisi & Zavalloni, 1992, p. 11), educational professionals can contribute to nurture this work of education. There is an inseparable link between man and nature, since the former is an integral part of the latter, but, at the same time, it is necessary to consider that the Earth's availability and resources are not infinite and it is, therefore, necessary to recycle correctly and learn to consume and waste less in order to pollute less. Already in the past, and even more so today, a new culture and new lifestyles are essential with reference to put an end to the imbalance between man and the environment and the related problems. This awareness has gradually spread to a growing number of European countries, so much so that on 6 May 1968 the Council of Europe drew up and adopted the *European Water Charter*, which recognised that water is "*a precious commodity, indispensable to all human activities*" (Council of Europe, 1968, pp. 1-2), without which there would be no life.

The availability of fresh water, in fact, is not inexhaustible and, for this reason, it is essential to "*preserve them, control them and, if possible, increase them [...] the protection of water implies an important effort of scientific research, training of specialists and of public information […] water is a common heritage whose value must be recognized by all. Everyone has the duty to economize and use it with care*" (Council of Europe, 1968, pp. 1-2). A common resource, water must be protected through international cooperation.

Subsequently, the *Tbilisi Declaration* was drafted, an international UNESCO document at the end of the first world intergovernmental conference on environmental education, held in Tbilisi (Georgia) from 14 to 26 October 1977. In this Conference some educational suggestions were introduced and cultural for the implementation and

implementation of concrete forms of environmental education. Especially, this document defines the general objectives of environmental education, namely: to help raise awareness of the existence of economic, social, political and ecological interdependence; give everyone the opportunity to acquire a sense of values, active interest and the skills necessary to protect and improve the environment; create new types of behavior of individuals and society towards the environment.

From these documents it is clear that other general objectives are included in environmental education, such as: knowing the natural environment that surrounds us; perceive and discriminate the salient features of natural environments; research and discover biotic and abiotic components of ecosystems and their relationships; build attitudes and behaviors such as: respecting all living beings, taking an interest in their living conditions, appreciating natural environments and feeling responsible for the environment in which one lives. On the other hand, with regard to the guiding principles to be inspired by that allow us to define environmental education, we can mention a few:

1) consider the environment in its entirety;
2) consider education a continuous process (from pre-school to school and out-of-school level);
3) adopt an interdisciplinary approach;
4) examine the main environmental problems from a local, national, regional and international perspective;
5) focus education on current and future environmental situations;
6) insist on the value and need for local, national and international collaboration to prevent and solve environmental problems;
7) systematically study development and growth plans from an environmental point of view;
8) give students of all ages the opportunity to make decisions and accept the consequences;
9) raise awareness of the environment, acquire knowledge, ability to solve problems and identify the symptoms and real causes of environmental problems;
10) emphasize the complexity of environmental problems and develop skills for the solution of these problems;
11) use different educational environments, methods, practical activities and personal experiences.

Environmental education in this sense appears as a form of integral and lifelong education, in which the encounter with the natural environment involves unforeseen events that can positively revolutionize the initially planned educational program. The essential and integrated modalities consist of:

1) *educate on the environment*: teach to understand the fundamental elements and structure of the natural environment;
2) *educate for the environment*: encourage participation in the problems of the natural environment and the construction of an environmental ethics;

3) *educate through the environment*: use the natural environment to learn knowledge and concepts and build basic skills.

In the eighties, in many European states, initiatives were launched for the integration of traditional education systems with proposals for studying the environment. 1987 was declared "European Year of the Environment", while in 1989 the Ministero della Pubblica Istruzione [Italian Ministry of Education] issued a circular on environmental education, indicating among the tasks of the school that of raising awareness and creating a new environmental culture (Pennisi & Zavalloni, 1992, pp. 56-61).

This is also due to the fact that many researches have underlined, in this sense, how today's children grow up poor in direct experiences, in limited, limiting and artificial spaces, with little chance of encountering nature even in the simplest manifestations (Louv, 2005; Wells & Lekies, 2006; Chawla, 2006a; Chawla, 2006b, 57-58). For this reason, it is becoming increasingly important to promote environmental education from the early stages of schooling (from kindergarten) in the awareness that "*doing environmental education presupposes the active involvement of adults in the experience of knowledge and awareness. For the child to learn to appreciate natural environments […] it is advisable to prepare intentional situations of direct and frequent encounter with different natural realities, on which to talk, reflect*" (Pennisi & Zavalloni, 1992, p. 51).

The teacher, as an active mediator, must therefore possess adequate key skills that enable him to achieve these objectives directed to the deepening of the main teachings of ecology and to the knowledge of the environment in which the school is located, its cultural history. and social issues and its most evident problems. This implies the acquisition of the willingness to change one's deep-rooted habits and ways of relating to the natural environment, that is, the willingness to be educated together with children. Furthermore, the teacher must develop the ability to co-design, collaborate and work together with others, to communicate, through special meetings, with parents to promote debate and awareness on environmental issues, as well as the ability to collaborate with experts and with the services of the territory, the ability to observe the child, leaving room for questions, triggering individual and collective research processes, promoting critical thinking and environmental education experiences connected to the interests of children and in continuity with the knowledge already developed (Pennisi & Zavalloni, 1992, pp. 66-68). It emerges from what has been said that only by educating the adults of tomorrow will it be possible "*to live without destroying or significantly altering the environment around us, it will be possible to apply the concept of sustainability: allowing those who will come after us to do the same things that we can do today*" (Vanzo, Trabuio, & Delloste, 2007, p. XIX). It is a question here of supporting an idea of environmental education in which nature is seen as a model and "teacher", which requires time and commitment, which educates children in observation and patience and which allows them to be active protagonists of the process. learning.

Already in the past, traditional pedagogues such as Rousseau, Pestalozzi, Fröbel, Montessori and especially Pizzigoni (Natalini, 2021), have emphasized the importance

that the natural environment plays in education, by virtue of the benefits it brings to man and to its educational value and elevation of the spirit. These aspects still remain after some time, the backbones of environmental education, if we think, in particular, of the way in which the ecological problems and environmental disasters that characterize our century are addressed today. In fact, industrial and technological development have led to a strong expansion of private consumption and progressively induced an increase in the pollution of water resources - air and soil - with evident environmental disasters, such as, for example, pollution. of mercury in the Minamata sea in Japan in 1953, the dioxin contamination in Seveso in Italy in 1977, the explosion of the reactor of the Chernobyl nuclear power plant in 1986 etc.

Following these disasters, in 1983 in New York the United Nations General Assembly promulgated the Charter of the Rights of Nature, a document aimed at guiding the attitude of each State towards nature and towards the environmental heritage in order to respect them and preserve them from degradation caused by wars or other acts of hostility (Vanzo, Trabuio, & Delloste, 2007, pp. 44-45).

After the Second World War, the fallout of radioactive substances due to atomic bombs, pesticide damage, oil spills at sea and all the other negative effects of the growing development process led, in 1972, the "Club di Roma" to underline in the Report on the limits of development, also called the *Meadows Report*, the need to put limits on the growth of consumption in order to slow down the destruction of the environment. In fact, this Report emphasizes how the development of scientific and technological research is potentially capable of increasing progress (improving health, extending life expectancy, economic development, etc.), but also, if not adequate, destruction or threats to the natural environment (pollution and other negative effects of industrialization). Through graphs and mathematical calculations to predict the future condition, it was found that the five fundamental and interconnected elements of the world system, i.e. population, industrialization, pollution, food production and exploitation of natural resources, grow exponentially, leading to an uncontrollable decline, if no action is taken to restore ecological and economic stability (Meadows et al., 1972, pp. 20-33).

In 1987, another group called the "World Commission on Environment and Development" (WCED), chaired by Gro Harlem Brundtland, presented the *Our Common Future Report*, also called the *Brundtland Report*, in which we spoke for the first time about "sustainable development", that is sustainable development capable of satisfying "*the needs of the present without compromising the ability of future generations to satisfy their own needs*" (Ferri *et al.*, 2016, pp. 12-13), integrating the economic, social and environmental components, i.e. the integrity of the ecosystem, economic efficiency and social equity.

In all cases, sustainable development has limitations due to technology, the social organization of natural resources and the ability of the biosphere to absorb the effects of human activity. Furthermore, it is to be conceived as a process of change, in which the exploitation of resources, investments, technological development and institutional changes live in harmony with each other, and which implies painful choices, a political will capable of taking incident measures, a population growth in harmony with the

productive potential of ecosystems. This means striving to satisfy basic human needs and aspirations for a better quality of life for all citizens with the aim of guaranteeing equal opportunities in access to resources and the protection of natural systems (use of natural resources in compliance with the of their regeneration, conservation of plant and animal species and reduction of the negative impact on the quality of water, air, soil and other natural elements) (The World Commission on Environment and Development, 1987, pp. 16-17).

This *Report* also indicates the main objectives in line with sustainable development, namely: relaunching growth, changing the quality of growth; meet the essential needs of work, food, water and sanitation, ensure a sustainable level of the population, preserve resources, new orientation of technology, consideration of both the environment and the economy in decisions (The World Commission on Environment and Development, 1987, p. 46). Finally, the following is underlined: "*Education and communication are vitally important in order to impress each individual of his or her responsibility regarding the healthy future of the earth. The best way for students to recognize that their action can make a difference is to have projects organized by the school or community on which the students can work. Once convinced that they can help, people tend to change both their attitude and their behavior. New attitudes towards the environment will be reflected in decisions at home and in corporate boardrooms around the world*" (The World Commission on Environment and Development, 1987, p. 95).

In 1991, *Caring for the Earth: a strategy for sustainable living* was published by The World Conservation Union (IUCN), United Nations Environment Programme (UNEP) and WorldWide Fund for Nature (WWF). The document states that "*sustainable living depends on accepting the duty to seek harmony with other people and with nature. The guiding rules are that people must share with others and care for the Earth. Humanity must not take from nature more than nature can fill. This means adopting lifestyles and development paths that respect and work within the limits of nature*" (The World Commission on Environment and Development, 1987, p. 95). It also states that children and "*adults should be educated in the knowledge and values that will enable them to live sustainably. This requires environmental education, as well as social education. The former helps people to understand the natural world and to live in harmony with it. The second imparts an understanding of human behaviour and an appreciation of cultural diversity*" (The World Commission on Environment and Development, 1987, p. 53).

In 1992, the ONU World Conference on Environment and Development or "Earth Summit", held in Rio de Janeiro, sounded the alarm especially about deforestation and the destruction of the Amazon rainforest, the source of biodiversity, which is defined as the variability among living organisms of any ecosystem (terrestrial, marine and aquatic) and the ecological complexes of which they are part; This includes diversity within species, between species and of ecosystems, including all hierarchical levels of known living forms and the relationships they are able to establish with their environment. In addition to its inestimable intrinsic value, biodiversity offers humanity direct and indirect benefits, such as: provisioning (food, medicine, raw materials and water), regulating

(climate control, protection from extreme events), supporting (oxygen production and soil formation), and cultural and recreational services. This conference led to the drafting of the United Nations Framework Convention on Climate Change for the reduction of greenhouse gas emissions and led to the subsequent drafting on 11 December 1997 of the Kyoto Protocol, which stipulated that the emissions of pollutants had to be reduced by approximately 8.65% compared to 1990 emissions and that industrialised countries had to reduce their greenhouse gas emissions by 5% in the period 2008-2012.

The *Rio Conferenc*e also produced the *Agenda 21* document, which is a "programme of actions" to be carried out at both local and global level for the 21st century for sustainable development and in which some basic principles are stressed, such as the importance of public participation and of the entire community, continuous monitoring, transversality of the concept of sustainability and partnerships between the public and private sectors. In Italy, on 28 December 1993, the Ministry of the Environment drew up the *Nazionale per lo Sviluppo Sostenibile in attuazione dell'Agenda 21* [National Plan for Sustainable Development in implementation of Agenda 21], which provided for "*actions in production sectors such as industry, agriculture and tourism, in basic infrastructure (energy and transport) and in the waste sector, a terminal problem in production and consumption processes in the richest economies*" (Ministry of the Environment, 1993, p. 2). It should also be remembered that, following the 2002 World Summit on Sustainable Development held in Johannesburg, the United Nations General Assembly proclaimed the "Decade of Education for Sustainable Development" (DESS) for the period 2005-2014, a campaign that entrusted UNESCO with the coordination of many initiatives and that included among its aims "*to raise awareness among governments and civil societies throughout the world of the need for a more equitable and harmonious future, respectful of others and of the planet's resources, enhancing the role that education [...] education [...] understood in a broad sense as education, training, information and awareness-raising*" (UNESCO, 2019).

We can therefore speak of a "*culture of sustainability*" as "*a culture based on the prospect of sustainable development from which all the peoples of the planet, present and future, can benefit, and which provides for forms of protection of a social nature, such as the fight against poverty, human rights and health, which are integrated with the mutually supportive requirements of conservation of natural resources and ecosystems*" (UNESCO, 2019). In this direction, it is possible to summarise the founding elements of education for sustainable development in terms of:

1) interdisciplinarity;
2) the acquisition of the values underlying sustainable development;
3) the development of critical thinking and problem-solving;
4) the use of a variety of teaching and interactive methodologies (hands-on experience, open-air activities, games, and the use of multimedia and artistic materials etc.);
5) shared decision-making and active participation;
6) the importance of the local context (UNESCO, 2011).

2. Sustainable development, environmental education and environmental protection

Actions to promote sustainable development have come from many quarters and at different levels, most of which have emphasised how a real change in the situation can come about precisely by means of educational processes, training and raising the awareness of all citizens.

In recent decades, in fact, ecosystems have been characterised by fragmented habitats that are no longer able to provide space and nourishment for individual species. In fact, several causes have been identified as being among the main causes threatening biodiversity: pollution, habitat loss and fragmentation, invasive exotic species (i.e. species from other countries, transported by man, which have characteristics that are such as to supplant native and endemic species), anthropogenic interventions on the environment that interrupt the migratory flows of certain species, climate change and over-exploitation of natural resources. In order to prevent the situation from getting worse, it is a priority for humans to start implementing responsible and respectful choices towards the environment, such as the case of the "Red List", produced worldwide by the International Union for Conservation of Nature (IUCN) and used as a tool for the knowledge of species, as well as for their categorisation into endangered species for their protection (Ministero dell'Ambiente e della Tutela del Territorio e del Mare [Ministry of the Environment and Protection of Land and Sea], 2014, 135-140).

Also in 1992, the European Union ratified Directive 92/43/EEC "Habitats", in which Europe expressed its desire to safeguard biodiversity through a network called "Natura 2000" to ensure the long-term maintenance of natural and semi-natural habitats (such as areas of traditional agriculture, used forests, pastures, etc.) and species of flora and fauna that are threatened or endangered at Community level. This network consists of Sites of Community Interest (SCI), which are designated as Special Areas of Conservation (SAC), in which human activities are not excluded provided that the owners of these areas ensure their sustainable management by maintaining a balance between human and natural activities. The Ministry of the Environment and Protection of Land and Sea adopts the National Manual for the Interpretation of Habitats and SCIs lists according to biogeographical regions. In Italy, these sites make up about 19% of the national territory and 4% of the marine territory. Protected areas, i.e. territories rich in biodiversity and artistic, archaeological, historical, etc. assets, are increasing, testifying to the desire to keep alive the relationship between man and nature and the protection of the Earth's enormous wealth. In fact, by 2000, Italy had already protected a total of 132 habitats, 87 species of flora and 99 species of fauna (including 21 mammals, 9 reptiles, 14 amphibians, 25 fish, 30 invertebrates) and around 380 species of birdlife, while state nature reserves and national parks cover around 1,600. There are 24 National Parks, 28 Marine Protected Areas, Marine Reserves and a Cetacean Sanctuary, 148 Protected Reserves and 134 Regional Parks (Ministry for the Environment, Land and Sea, 2000).

In addition to the terrestrial environment, special attention should be paid to the protection of water, which covers about 70% of the Earth's surface, although only about

Ĭ1% is actually available as fresh water, which feeds rivers, lakes and underground aquifers, while some is not available because it concerns water trapped in glaciers. It must also be considered that this quantity of fresh water is not distributed uniformly over the earth's surface, but is distributed according to different climatic, geological and hydrogeological characteristics.

In the same way, the oceans are also fundamental to the planet's balance and perform functions necessary for the life of living beings, such as the fundamental role they play in the water cycle (evaporating from the sea, rising in the atmosphere and then precipitating to the ground in the form of rain and returning to the sea via the rivers) and in climatic variations, as well as keeping the air temperature within tolerable values for living beings and mitigating day/night and seasonal temperature changes by absorbing heat radiated by the sun and releasing it slowly, supporting the carbon cycle by absorbing and fixing part of the carbon dioxide, and being a source of sustenance for humans. This water heritage and marine ecosystems, however, are at risk due to pollution (industries, fertilisers, etc.) and intensive fishing by wasteful human activity, inadequate wastewater treatment systems and climate change, which has greatly altered rainfall patterns, leading to critical situations due to water scarcity and consequent population migration.

As the main and fundamental component of the environment, water must be safeguarded through appropriate policies and by promoting the involvement of all citizens, since the water problem is an international issue, so much so that there are international institutions, such as IMO (International Maritime Organization) to minimize the impacts of maritime transport; FAO (Food and Agriculture Organization) to ensure sustainable fishing criteria and levels and UNEP (United Nation Environment Programme) for environmental protection in general etc., to preserve the historical relationship between man and the natural environment. To this end, binding standards and rules have been established in many countries, including the Marine Strategy Framework Directive (MSFD) 2008/56/EC issued by the European Parliament and the Council of the European Union, which came into force in Italy with Legislative Decree no. 190/2010. 190/2010, in which in order to prevent degradation and restore damaged ecosystems, each State must develop and implement its own marine strategy to maintain a good environmental status by 2020 through mainly citizen participation (Ministero dell'Ambiente e della Tutela del Territorio e del Mare, 2014, pp. 155-156). The urgency of protecting the environment, especially biodiversity, also emerged when the "Convention on the Promotion and Protection of the Intangible Heritage" was born on 17 October 2003 at the 32nd session of the UNESCO General Conference, which came into force on 20 April 2006 and was ratified by Italy with Law No. 167 of 27 September 2007. The main objectives of this Convention are to identify, document, preserve and transmit the cultural intangible heritage of peoples. The term 'intangible cultural heritage' refers to the set of practices, representations, expressions, knowledge and skills, tools, objects, spaces and environments, social customs, rituals and festive events, etc., which are an integral part of the cultural heritage of communities, passed on from generation to generation and

which guarantees a sense of identity and ensures continuity (Ministry for the Environment, Land and Sea, 2003).

Protecting the natural environment is particularly important in our century, when alarming data are emerging, as highlighted by the State of the World, published by the Worldwatch Institute in Washington, concerning the health of planet Earth, which is marked by problems, such as the rise in temperature caused by the greenhouse effect, i.e. the increase in the concentration of carbon dioxide and other gases that retain heat in the lower layers of the atmosphere, leading to other problems, including rising sea levels, melting glaciers and desertification. The latter is characterised by land with low and unpredictable rainfall, large differences between daytime and night-time temperatures, soil with little organic matter and little water, where plants and animals adapt to drought or unfavourable conditions, as they would otherwise die out, leading in turn to other negative consequences. Once the line between arid zones and extreme desertification has been crossed, it is difficult to turn back, as it may not take five hundred years to restore 25 cm of land, while it takes far fewer years to destroy it.

The main causes of desertification are climatic variations, excessive cultivation and grazing, deforestation, incorrect irrigation systems, while the consequences are the accentuation of climatic variations and the problem of water scarcity, the intensification of 'environmental' migration, and the radicalisation of the phenomenon of poverty. However, we should also consider the problem of the thinning of the ozone layer, which acts as a shield against ultraviolet radiation that is harmful to many living beings, the increase in smog and related acid deposition, a term used to describe rainfall with increasingly high levels of nitric acid and sulphuric acid, which contaminate food and have corrosive effects on monuments, soils and ecosystems, and, finally, deforestation, which causes serious damage, such as the extinction of many living beings, as forests are habitats rich in biodiversity that perform vital functions, helping to regulate the hydrogeological aspect of river basins, helping to regulate the climate at local level and intervening in the moisture cycle due to their properties of storing solar energy and being important sources for wood and paper production (as well as having a recreational role). This deforestation is also due to changes in land use and the lack of restrictions on access to resources and clearly defined property rights, especially in tropical forests, such as in India and the Amazon Rainforest, 'the lung of the earth'. With reference to the latter, this leads to multiple socio-cultural discomforts for the local populations, who live off the forest resources and depend on them for rituals and traditional ceremonies, also in terms of dignity and identity; these populations are in fact forced to emigrate to the cities, losing their cultural and human baggage. The environmental problem is therefore a worldwide problem, involving a wide range of problems and domains and implying the adequate exploitation of resources, especially non-renewable ones, and the use of sustainable energy or the preference for acts that avoid risks to nature by all countries through worldwide cooperation (Vanzo, Trabuio, & Delloste, 2007, pp. 46-48).

In this regard, it is interesting to recall the 2010 presentation of the *Universal Declaration of the Rights of Mother Earth* by Bolivia's President Evo Morales at the United

Nations, which states that Mother Earth is an indivisible and vital community of interdependent and interrelated beings with a common destiny, a source of life, food, teaching, and which provides everything we need to live well. Considering that we are all part of Mother Earth, it is clear that we all enjoy, along with it, rights such as: the right to life and to exist; the right to be respected; the right to maintain its identity and integrity as differentiated, self-regulating and related beings; the right to water as a source of life; the right to clean air; the right to integral health; the right to be free from pollution, contamination and toxic or radioactive waste; and the right not to be altered.

Furthermore, Article 8 of that Declaration states that "*human education should develop the full potential of human beings so as to promote love for Mother Earth, compassion, understanding, tolerance and love among all human beings and between human beings and other beings, and the observance of the fundamental freedoms, rights and duties of this Declaration*" (Rete Clima, 2010). Finally, the ONU launched a call for cooperation to reclaim degraded land in the International Year of Soils 2015 and since 1970 has established 'Earth Day', a day to celebrate the environment and the preservation of Planet Earth.

From the 1990s onwards, the relationship between social sustainability and environmental society began to be emphasised, identifying above all reciprocal links between poverty, social inequality and environmental degradation. It is stated that poor people make unsustainable choices and are less inclined to invest in the protection of resources. Similarly, specific studies have pointed out that poverty is not the main cause of environmental degradation, as in many cases the poorest segments of the population do not have access to productive resources, and this limits their role in environmental impact compared to the richest. Moreover, the presence of other determinants of environmental degradation, such as institutional and market failures, interest protection and bureaucratic inertia, leads to the reflection that environmental degradation itself in turn leads to increased poverty and social inequalities, forced migration of rural populations into metropolitan slums, conditions of high instability and social imbalance and increased pressure on urban centres (Ferri et al., 2016, pp. 103-107).

A part of the literature, on the other hand, dwells on showing how economic growth does not ensure sustainability (as richer countries often reduce environmental degradation by shifting polluting production to poorer countries), but, on the contrary, its loss, ends up generating anxiety at the individual level, as the happiness of the population is linked to the protection of social capital. This makes it important to take a holistic or interdisciplinary approach to sustainability, which, in turn, is intrinsically linked to the preservation of the human species itself (Ferri et al., 2016, pp. 40-44). An 'integrated sustainability model' is therefore being pursued today, as shown by the story of Sister Doroty Stang, who crossed the paths of the Amazon rainforest with a backpack containing maps, a Bible and precious documents to fight against land grabbing (practices of grabbing large irrigated and cultivable rural areas by multinationals and investment funds in poor countries, leading to the export of production to investor countries, the expulsion of rural populations to metropolitan slums, monoculture that replaces local fauna and flora, leading to their disappearance, and soil erosion) and who

was killed for this in 2005. Sister Doroty fought for the preservation of the Amazon rainforest and the dignity of local people, going so far as to implement a practice of 'reverse hospitality' (whereby even the poor can offer hospitality), as well as founding 39 schools in 39 years, based on a link between literacy and a sustainable economy.

She dedicated her life to training the community in a sustainable economy and teaching farmers to produce sustainably, supporting them in eliminating injustice and fighting for the defence of human rights, so much so that, in 1997, the Brazilian government was prompted to launch specific sustainable development projects (Ferri et al., 2016, pp. 109-126). In conclusion, it seems clear that "*the only viable path seems to be the one that makes possible a development capable of satisfying needs while respecting values such as life, health and the beauty of nature*" (Ferri et al., 2016, p. 77).

3. 2030 Agenda and education

The 2030 Agenda for Sustainable Development "is a programme of action for people, planet and prosperity signed in September 2015 by the governments of the 193 UN member states. It encompasses 17 Sustainable Development Goals [...] The official launch of the Sustainable Development Goals coincided with the beginning of 2016, guiding the world on the path to be taken over the next 15 years as countries committed to achieving them by 2030". This document lists common goals related to issues important for sustainable development and concerning all countries and individuals, no one excluded or left behind in order to ensure and promote sustainability.

Below are the 17 Goals of the 2030 Agenda.

- Goal 1: End all forms of poverty in the world. Poverty is not only the lack of income or resources to live on, but also all its manifestations, such as hunger, malnutrition, social exclusion, etc., as 863 million people still live in poverty.
- Goal 2: End hunger, achieve food security, improve nutrition and promote sustainable agriculture. Agriculture, forestry and fisheries need to be well managed in order to provide nutritious food for all, generate adequate incomes and above all protect the environment. Today, however, soils, rivers, oceans, forests and related biodiversity are at risk due to climate change and the resulting natural disasters, so much so that some 795 million people worldwide are undernourished and malnutrition causes 45% of deaths in children under five.
- Goal 3: Ensure health and well-being for all and all ages. Ensuring healthy lives and well-being for all and at all ages makes it possible to achieve sustainable development, even though more than 6 million children still die before their fifth birthday, mainly in sub-Saharan Africa and South Asia, and AIDS is the leading cause of death among adolescents (aged 10-19) in Africa and the second most common cause of death among adolescents worldwide.
- Goal 4: Provide quality, equitable and inclusive education and learning opportunities for all. Significant improvements in literacy have been achieved, in recognition that quality education is key to improving lives and achieving

sustainable development, although primary school enrolment in developing countries has reached 91%, still 57 million children are excluded especially in sub-Saharan Africa and 50% of children of primary school age do not attend school, particularly in conflict-affected areas.

- Goal 5: Achieve gender equality and empower all women and girls. Despite progress in gender equality and women's empowerment, many women and girls are still discriminated against or forced to suffer violence, while promoting a sustainable economy requires ensuring women's equal access to education, health care, decent work, as well as participation in decision-making, political and economic processes. About two-thirds of developing countries have achieved gender parity in primary education, although in sub-Saharan Africa, Oceania and West Asia, girls still face obstacles in accessing primary.
- Goal 6: Ensure the availability and sustainable management of water and sanitation for all. Access to clean drinking water is essential for life, yet millions of people still die from diseases due to poor water supply, sanitation and hygiene levels. Some 2.4 billion people worldwide lack access to basic sanitation and 1.8 billion people use contaminated drinking water sources, as more than 80% of the wastewater produced by human activities is discharged into rivers or seas without purification systems.
- Goal 7: Ensure access for all to affordable, reliable, sustainable and modern energy systems. Energy is a major contributor to climate change, accounting for about 60% of global greenhouse gas emissions, so low-carbon energy production and the development of sustainable energy service technologies are important. Even today, one in five people do not have access to modern electricity and 3 billion people depend on wood, coal or animal manure for cooking and heating.
- Goal 8: Foster sustainable, inclusive and lasting economic growth, full and productive employment and decent work for all. Indeed, a sustainable economy requires the creation of quality jobs and decent working conditions, yet global unemployment has risen from 170 million in 2007 to nearly 202 million in 2012 and nearly 2.2 billion people live below the $2 a day threshold.
- Goal 9: Build a resilient infrastructure and promote innovation and fair, responsible and sustainable industrialisation. Infrastructure, technological progress and the related industrialisation process are key to sustainable development, as infrastructure provides access to markets, jobs, health care, information, education, etc., even though some 2.6 billion people in developing countries face impediments to continued access to electricity.
- Goal 10: Reduce inequality within and between nations. There are currently great disparities in access to health, education and other services, and income, and it has been shown that such inequality damages economic growth, the quality of relationships in the public and political spheres, and an individual's sense of satisfaction and self-worth. In particular, between 1990 and 2010, income inequality increased by 11% in developing countries.

- Goal 11: Make cities and human settlements inclusive, safe, durable and sustainable. Cities are important centres for economy, culture, social development, but they also face issues that can damage the territory and its resources, such as traffic, lack of funds to provide basic services, housing shortages, deteriorating infrastructure, etc. Today, some 3.5 billion people live in cities, 828 million people live in slums and cities are responsible for 60-80% of energy consumption and 75% of carbon emissions.
- Goal 12: Ensure sustainable patterns of production and consumption. Sustainable consumption and production aim to "do more and better with less", thus improving quality of life and well-being by reducing resource use, degradation and pollution. Indeed, it should be noted that energy use in OECD (Organisation for Economic Co-operation and Development) countries will continue to rise by a further 35% by 2020 and that 1.3 billion tonnes of food are wasted every year.
- Goal 13: Promote action, at all levels, to combat climate change. Climate change is a global issue, caused mainly by human activity and with devastating consequences for the planet. From 1880 to 2012, the global average temperature increased by about 0.85°C and from 1901 to 2010, the global average sea level rose by 19 cm, while global carbon dioxide emissions have increased by about 50% since 1990.
- Goal 14: Conserve and sustainably use the oceans, seas and marine resources for sustainable development. The sea has always played a central role in trade, transport, food, climate, etc. The oceans cover three quarters of the earth's surface. The oceans cover three quarters of the Earth's surface, contain 97% of the Earth's water and are characterised by rich biodiversity. In addition, oceans absorb about 30% of carbon dioxide and the impact of human activities on them includes pollution, depletion of fish stocks and loss of natural habitats.
- Goal 15: Protect, restore and promote sustainable use of the earth's ecosystem. Forests cover 30% of the earth's surface and are essential, providing safe food and shelter for living species, combating climate change and rich in biodiversity. 13 million hectares of forests are lost every year due to drought and land degradation and some 1.6 billion people depend on them for their livelihoods and of the 8,300 known species of animals, about 8% are extinct and 22% are at risk of extinction.
- Goal 16: Peace, justice and strong institutions. The creation of peaceful and inclusive societies is needed to ensure sustainable development and universal access to justice and to build accountable and effective institutions. Primary school dropouts in conflict-affected countries reached 50% in 2011, showing the impact of unstable societies on education.
- Goal 17: Strengthen the means of implementation and renew the global partnership for sustainable development. The sustainable development agenda requires partnerships between governments, the private sector and civil society to achieve its goals. These inclusive partnerships based on shared values and goals are needed at global and local level to transform the current situation, kick-start

long-term investments in key sectors such as sustainable energy, infrastructure and transport, information and communication technologies, etc., and strengthen institutions for review and oversight of legislation. Funds for development assistance were $135.2 billion in 2014 (UN, 2015).

Figure 1: *Sustainable Development Goals (SDGs).*
Source: The 2030 Agenda for Sustainable Development (2015)

In the 2018 *Indicazioni nazionali e nuovi scenari* [National Indications and New Scenarios] the emphasis is placed on basic skills for education for citizenship and sustainability, so much so that the contents of the UN 2030 Agenda are taken up, emphasising that goal number 4 is the one that directly involves schools and that, in general, education fully contributes to the achievement of all the goals of that Agenda, fostering the development of cultural, methodological and social competences that strengthen conscious global citizenship and equip young citizens with tools to act consciously in the society of the future (MIUR, 2018) in the perspective of lifelong learning (Dozza & Ulivieri, 2016). In this sense, pedagogical reflection is called to support the forms of educational design (Iavarone et al., 2017), which push to look at change within an idea of the environment capable of contributing to the planetary civilisation of today and tomorrow (Malavasi, 2005) in the perspective of an "*environmental citizenship*" (Natalini, 2020).

4. The natural environment in the *Indicazioni Nazionali per il curricolo della scuola dell'infanzia e del primo ciclo d'istruzione*

In the 2012 *Indicazioni Nazionali per il curricolo della scuola dell'infanzia e del primo ciclo d'istruzione* [National Indications for the curricula of the pre-school and first cycle of education] issued by the Ministry of Education, Universities and Research (MIUR, 2012, p. 8), it is stressed, first and foremost, that "*the education system must form citizens capable*

of consciously participating in the construction of broader and more composite communities, be they national, European or global". It is therefore clear that one of the school's tasks is to contribute to the formation of an active, unitary and at the same time plural citizenship, and to "*spread awareness that the major problems of the current human condition [...] can be addressed and resolved through close cooperation not only between nations, but also between disciplines and between cultures*" (MIUR, 2012, p. 9). Environmental degradation, climate chaos and the unequal distribution of resources are among the most urgent issues to be addressed, and nature is included among the 'objects of knowledge'. In fact, one of the aims of the nursery school is to initiate children into citizenship, which implies "*laying the foundations of ethically oriented behaviour, respectful of others, the environment and nature*" (MIUR, 2012, p. 18) and the emphasis is placed on the outdoor space considered part of the learning environment, where learning takes place through action, exploration and contact with objects and nature (MIUR, 2012, p. 19). Specifically, in the field of experience 'the self and the other', it is emphasised that it is crucial for the child to observe nature and living things, in their birth, evolution and extinction and the environment around them. In the "body and movement" field of experience, it is stressed that outdoor games help children to exercise and become aware of their bodies. Finally, in the field of experience "knowledge of the world", the exploration of objects and materials and the observation of the life of plants and animals becomes central to enabling children to develop personal ideas; and animal and plant organisms become a "living model" for understanding elementary processes and the variety of ways of living, as well as the continuous transformations of the environment (MIUR, 2012, pp. 20-24).

Similarly, in primary school, the need to promote a sense of responsibility in children, which translates into taking care of the environments they frequent, both natural and social, is highlighted (MIUR, 2012, p. 26), but it is evident how the natural environment becomes a rich source of learning and reflection, which allows deep interdisciplinary connections. In fact, with regard to the historical field, it is stated that it is vital to recognise and explore the historical traces present in the territory and to learn about history by focusing attention on the main themes that concern all the problems of human life on the planet, such as the use of energy sources, defence against adverse natural elements and the progressive transformation of the natural environment, especially as a result of technical development (MIUR, 2012, p. 449). With regard to geography *Indicazioni Nazionali* [National Indications] states that the need to understand the processes of progressive transformation of the environment by man or by natural causes of various kinds. The history of nature and that of man, however, take place at different times: the long times of nature intertwine, often configuring, with the much shorter times of man. Geography also shares the planning of actions to safeguard and recover the natural heritage, so that future generations can benefit from a healthy environment. Recycling and waste disposal, the fight against pollution, the development of renewable energy production techniques, the protection of biodiversity, adaptation to climate change: these are themes of strong geographical relevance, where the link with scientific and technical disciplines is essential.

The point of convergence leads to territorial education, understood as the exercise of active citizenship, and environmental and development education. The presence of geography in the curriculum contributes to providing the essential tools to make pupils autonomous and critical, able to take responsible decisions in the management of the territory and environmental protection, with a conscious look to the future. (MIUR, 2012, p. 48). With regard to science the importance of carrying out concrete experiences in classrooms, laboratories or natural spaces and other environments is looked at; and among the goals for the development of competences at the end of primary school there is the recognition of the main characteristics and ways of life of animal and plant organisms, having attitudes of care towards the school environment, appreciating and respecting the value of the social and natural environment. In this context, the following learning objectives are also identified at the end of the third year of primary school:

- to observe significant moments in the life of plants and animals, identify similarities and differences in the development paths of animal and plant organisms;
- to observe the characteristics of soils and waters by going outdoors;
- to understand natural environmental transformations and atmospheric phenomena, to recognise and describe the characteristics of one's own environment and to understand the functioning of complex organisms and one's own body in relation to environments (MIUR, 2012, pp. 56-57).

Even in the field of physical education, the natural environment is of great importance, just think of what is stated in the *Indicazioni Nazionali* [National Indications], in which it is reported that it is important for motor activity to be about the importance of physical activity in the natural environment, where it is said that this represents "*a key element for an integrated educational action, for the formation of future citizens of the world, respectful of human, civil and environmental values*" (MIUR, 2012, p. 65).

It is evident from the above that much of what is contained in the Guidelines is the result of the past achievements of what Giuseppina Pizzigoni, the forerunner of environmental education, but also the precursor of the idea of nature as a teacher of life, strongly advocated.

In the 2014 Guidelines on Environmental Education for Sustainable Development, education for sustainable development is defined as a "*project in which to promote the skills necessary to question existing models, to improve them and to build new ones together*" (Ministero dell'Ambiente e della Tutela del Territorio e del Mare [Ministry for the Environment and Protection of Land and Sea], 2014, p. 7) and sustainability is able to "*activate virtuous processes of overall change in behaviour and lifestyles. An approach to the environment based on the value sphere before the cognitive one*" (Ministero dell'Ambiente e della Tutela del Territorio e del Mare, 2014, p. 7).

The *Linee Guida* [Guidelines] are the starting point for creating new educational pathways for sustainable development and for the acquisition of holistic competences, i.e. pathways that are integrated into the curriculum of the different levels of education and that are the result of interdisciplinary approaches. Among the competences that the

educator must possess are "*the holistic approach, the integration of thought and practice, imagining change by exploring alternative futures, achieving transformation through changes in the way of learning and in learning support systems*" (Ministero dell'Ambiente e della Tutela del Territorio e del Mare, 2014, p. 8). The educational pathways developed in that document cover eight themes, including "*Protection of water and the sea"; "Protection of biodiversity: Flora and Fauna"; "Sustainable food" and "Waste management"* (Ministry of the Environment and Protection of Land and Sea, 2014, pp. 8-9). In these Guidelines, environmental education is defined as a "*process whereby individuals gain awareness and attention to their environment; acquire and exchange knowledge, values, attitudes and experiences, as well as the determination that will enable them to act, individually or collectively, to solve current and future environmental problems*" (Ministero dell'Ambiente e della Tutela del Territorio e del Mare [Ministry of the Environment and Protection of Land and Sea], 2014, p. 13).

Alongside the issues of biodiversity and water protection, as shown above, other environmental education issues, such as climate change and pollution, are addressed in this document. With regard to these aspects, it must be considered that, following the industrial revolution, the quantity of gases in the atmosphere, which allow sunlight to filter through and retain heat, has progressively increased, which has led to an increase in the temperature of the planet and consequent climate change. Especially human activities and especially the burning of fossil fuels to produce electricity, heat and fuels (coal, oil, natural gas) have increased the concentration of carbon dioxide, which can be significantly reduced by preserving the planet's forests and green areas, as plants absorb carbon dioxide for their life cycle. The consequences of these climate changes are significant, such as melting glaciers, rising sea levels (in the last 100 years, sea levels have risen by 10-25 cm and by 2100 they could rise by up to 88 cm) and an increase in the frequency of weather events such as typhoons, floods, droughts, etc., so much so that in 1992, the year of the *World Meteorological Conference on Climate Change* (WSSE), the *World Meteorological Conference on Climate Change* (WSSE) was held in Rome, So much so that in 1992, the year of the Rio Conference, the *United Nations Framework Convention on Climate Change* (UNFCCC) was approved, with the aim of stabilising and reducing greenhouse gas emissions and mitigating the negative impact of human activity on the climate, while in 1997 the *Kyoto Protocol* was approved, which came into force on 16 February 2005 and committed the countries of the European Union to reducing emissions by 2012.

Subsequently, at the G8 summit held in July 2009 in L'Aquila, the most industrialised countries agreed to reduce carbon dioxide emissions by 80% by 2050 and for the first time the need to avoid a rise in global temperature of more than 2°C (the temperature above which climate change is considered irreversible) was recognised, including by the United States.

This aspect is of fundamental importance if we consider that all living beings, including man, need to obtain energy from the environment in order to carry out their vital functions, and these primary energy sources can be renewable, such as vegetable fuels (e.g. wood, sun, water, wind, etc.) or non-renewable, i.e. limited and involving

combustion processes with often harmful emissions, such as fossil fuels. In order to reduce emissions, therefore, it is essential to promote renewable sources of energy and energy efficiency with the consequent reduction in energy consumption, especially that of industry, as well as protecting forests and woodlands to absorb carbon dioxide.

Another pollution-related problem is waste management, which in Italy is regulated by Legislative Decree no. 152/2006 "Environmental regulations", in which waste is classified according to its origin or hazardousness. It seeks to promote waste prevention and reduction and to strengthen the institutions involved in waste management, recycling and safe disposal through the participation of each citizen, who must adopt responsible behaviour such as limiting the use of products with excessive packaging and carrying out proper separate collection, which turns waste into a resource. Lastly, there are ecological islands for recycling waste and waste-to-energy, a process in which waste is burned at high temperatures, producing energy and heat. It should be borne in mind that it is mainly in cities that most polluting emissions and waste are produced, so greater attention to sustainability in urban areas is needed, creating sustainable cities, i.e. based on a harmonious relationship between the social system and the environment, starting with environmental education in schools in order to promote ecological behaviour and sustainable consumption styles, as well as regulation and technological innovation (Ministero dell'Ambiente e della Tutela del Territorio e del Mare [Ministry of the Environment and Protection of Land and Sea], 2014, pp. 167-181).

In the European Union, environmental education has become an integral part of the curricular activities of primary and secondary schools, since the study of the environment, understood as lifelong learning, is to all intents and purposes fundamental to preparing pupils to build a sustainable future and society. There are many initiatives at international level on the subject of environmental education, such as the International Network for Discussion and Research WEEC (World Environmental Education Congress), a network with thousands of members worldwide, including scientific institutions, bodies and individual personalities, which since 2003 has periodically organised a World Environmental Education Congress attended by university lecturers, government officials and officials from international organisations, NGOs, journalists, politicians and businesses. It is also worth mentioning the "Aarhus Convention", an international treaty (signed in the Danish city of Aarhus and entered into force on 30 October 2001) aimed at guaranteeing citizens transparency and participation in decision-making processes concerning the environment and based on three pillars: guaranteeing citizens access to environmental information; encouraging public participation in decision-making activities with possible effects on the environment; extending the conditions for access to justice.

Environmental education is strongly linked to the formation of active citizens, as the collaboration of all citizens is necessary to improve the situation of our planet and the quality of life of each one. Consequently, it is important to start in kindergarten to develop ethical and respectful behaviour towards others, the environment and nature. For environmental education, schools can take advantage of the specialist support that

can be offered by the public administrations in charge of environmental protection (Ministry of the Environment and Protection of the Land and Sea, ISPRA and its regional and provincial agencies, Park Authorities, Managers of Marine Protected Areas, Carabinieri CCTA, Harbour Offices, etc.), local authorities and local authorities), local authorities and associations working in the field of environmental protection in order to motivate students and make them aware and responsible protagonists of the learning process (Ministero dell'Ambiente e della Tutela del Territorio e del Mare [Ministry of the Environment and Protection of Land and Sea], 2014, pp. 13-18). In particular, it is necessary to underline that there are "Environmental Education Centres" (CEA), i.e. structures that form a network on the territory and that deal with environmental education especially in relation to the different territorial contexts in which they are inserted (hilly, mountainous, coastal, urban, etc.), becoming a reference point for schools, educational agencies, local authorities and local companies that are interested in sustainability. In fact, together with these, the CEAs carry out educational paths, educational stays, information and research initiatives in order to allow participation and sharing of knowledge and issues related to sustainable development through direct experiences, the elaboration of hypotheses and their verification, which stimulate the acquisition of a sense of responsibility by the people involved. The first municipal CEA in the Municipality of Rome was opened in March 2003 in collaboration with Dipartimento X, il Servizio Giardini, l'Istituzione Biblioteche e la Scuola Media [Department X, the Garden Service, the Library Institution and the 'Ferruccio Parri' Middle School], in order to disseminate an environmental culture.

It is clear that environmental education is the first step and an indispensable element in ensuring that man regains the awareness of being an integral part of nature and feels part of it. According to the Convention on the Rights of the Child, approved by the General Assembly of the United Nations on 20 November 1989 and ratified by Italy on 27 May 1991 with Law no. 176, Article 29, point 1, paragraph e, states that one of the aims of education is to "*develop respect for the natural environment in children*" (UNICEF, 1989, p. 16). We conclude this chapter with the words of Pope Francis in his encyclical letter *Laudato si* on the care of the common home, which encapsulates exactly the characteristics of the current panorama and in which he emphasises that "man does not create himself. He is spirit and will, but he is also nature" (Pope Francis, 2015, pp. (Pope Francis, 2015, pp. 7-8) and "*if we approach nature and the environment without this openness to wonder and amazement, if we no longer speak the language of fraternity and beauty in our relationship with the world, our attitudes will be those of the dominator, the consumer or the mere exploiter of natural resources, unable to set a limit to his immediate interests [... On the other hand, Saint Francis, faithful to Scripture, proposes that we recognize nature as a splendid book in which God speaks to us and transmits something of his beauty and goodness*" (Pope Francis, 2015, pp. 12-13). Moreover, "*after a time of irrational trust in progress and human capabilities, a part of society is entering a phase of greater awareness. There is a growing awareness of the environment and care for nature, and a sincere and painful concern for what is happening to our planet*" (Pope Francis, 2015, p. 20), as "*the human environment and the natural environment*

are degrading together, and we will not be able to deal adequately with environmental degradation if we do not pay attention to the causes that are related to human and social degradation" (Pope Francis, 2015, p. 42). Indeed, we need to reflect on the fact that authentic care for life and relationships with nature is inseparable from the values of humanity.

4. Conclusions

The relationship with nature prompts us to look at man and the human being in a new way. In a situation such as the current ecological and cultural crisis, the relationship with nature and the environment all fundamental human relations. Education is indispensable for spreading new behaviours, attitudes and lifestyles, based on the ability to live together and in relationship with nature. It is an environmental responsibility that can encourage various behaviours that have a direct and important impact on caring for the environment (avoiding the use of plastic or paper, reducing water consumption, sorting waste, etc.). when we talk about 'the environment' we can only refer to that relationship between nature, society and human beings. This prevents us from considering nature as something separate from us who are part of it and are influenced and benefited by it.

Acknowledgements
The Author would like to express her special thanks to Professor Sandra Chistolini for her professional support and advice.

Conflict of Interest Statement
The author has no conflicts of interest to declare. There is no financial interest to report. I certify that the submission is my original work and is not under review at any other publication and I have no commercial associations (e.g., consultancies, stock ownership, equity interest, patent/licensing arrangements, etc.) that might pose a conflict of interest in connection with the submitted article.

About the Author
The author is a primary school teacher. Her academic interests are aimed at educational research in the field of environmental education and sustainable development from the educational design perspective.

References

Chawla, L. (2006a). Research methods to investigate significant life experiences: Review and recommendations. *Environmental Education Research,*12, 359-374.

Chawla, L. (2006b). Learning to love the natural world enough to protect it. *Barn,* 2, 57-58.

Consiglio d'Europa, *Carta Europea dell'Acqua*, 6 maggio 1968. http://cicloacqua.altervista.org/ciclo/carta%20europea.pdf, pp. 1-2.

Dozza, L., & Ulivieri, S. (eds.) (2016). *L'educazione permanente a partire dalle prime età della vita.* Milano: FrancoAngeli.

Ferri, G., Mariani, A., Palmisano, F., Peragine, V. (a cura di), *L'uomo e la natura:sostenibilità sociale e ambientale*. Roma: Studium.

Iavarone, M. L., Malavasi, P., Orefice, P., & Pinto Minerva, F. (eds.) (2017). Pedagogia dell'ambiente 2017. Tra sviluppo umano e responsabilità sociale. Lecce-Brescia: Pensa MultiMedia.

Louv, R. (2005). *Last child in the woods: Saving our children from nature-deficit disorder.* Chapel Hill, NC: Algonquin.

Malavasi, P. (ed.) (2003). *Per abitare la Terra, un'educazione sostenibile.* Milano: ISU Università Cattolica.

Malavasi, P. (ed.) (2005). *Pedagogia dell'ambiente*. Milano: ISU Università Cattolica.

Ministero dell'Ambiente e della Tutela del Territorio e del Mare (2014). *Linee Guida Educazione ambientale per lo sviluppo sostenibile 2014*. https://www.minambiente.it/sites/default/files/archivio/allegati/LINEE_GUIDA.pdf.

Malavasi, P. (ed.) (2005). *Pedagogia dell'ambiente*. Milano: ISU Università Cattolica.

Meadows, D. H., Meadows, D. L., Rnaders, J., Behrens, W. W. (1972). *I limiti dello sviluppo. Rapporto del System Dynamics Group Massachusetts Institute of Technology (MIT) per il progetto del Club di Roma sui dilemmi dell'umanità*. Milano: Biblioteca della EST Edizioni scientifiche e tecniche Mondadori. http://www.arteideologia.it/04-FORNITURE/Capitolazioni/Club%20di%20Roma%20-%20I%20limiti%20dello%20sviluppo%20(1072).pdf.

Ministero dell'Ambiente (1993). *Piano Nazionale per lo Sviluppo Sostenibile in attuazione dell'Agenda 21*. http://www.isprambiente.gov.it/files/agenda21/1993-piano-nazionale-per-lo-sviluppo-sostenibile.pdf.

Ministero dell'Ambiente e della Tutela del Territorio e del Mare, *Natura 2000*. https://www.minambiente.it/ pagina/rete-natura-2000.

Ministero dell'Ambiente e della Tutela del Territorio e del Mare, *Convenzione sulla promozione e protezione del patrimonio immateriale,* in https://www.minambiente.it/pagina/la-convenzione-sulla-promozione-e-protezione-del-patrimonio-immateriale-2003, consultato il 5 novembre 2019.

MIUR (2012). *Indicazioni nazionali per il curricolo della scuola dell'infanzia e del primo ciclo d'istruzione*. http://www.indicazioninazionali.it/wp-content/uploads/2018/08/decreto-ministeriale-254-del-16-novembre-2012-indicazioni-nazionali-curricolo-scuola-infanzia-e-primo-ciclo.pdf.

MIUR (2018). *Indicazioni nazionali e nuovi scenari*. https://www.miur.gov.it/documents/20182/0/Indicazioni+nazionali+e+nuovi+scenari/3234ab16-1f1d-4f34-99a3-319d892a40f2.

Natalini, A. (2020). *Natura e cultura nell'educazione della Rinnovata Pizzigoni e nella Scuola del mare e del bosco.* Roma: Tesi di laurea "Roma Tre".

Natalini, A. (in press). Giuseppina Pizzigoni and the experience of the "Rinnovata" School: an emblematic pedagogical figure in the Italian panorama of the early twentieth century. *Open Journal of Social Sciences (JSS).*

ONU (2015). *Agenda 2030per lo Sviluppo Sostenibile*. http://festivalsviluppososten ibile.it/public/asvis/files/LAgenda2030egliSDGs.pdf.

Dozza, L., & Ulivieri, S. (eds.) (2016). *L'educazione permanente a partire dalle prime età della vita.* Milano: FrancoAngeli.

Papa Francesco, *Lettera enciclica Laudato si' sulla cura della casa comune*, Città del Vaticano, Libreria Editrice Vaticana, 2015, in https://w2.vatican.va/content/dam/francesco/pdf/encyclicals/documents/papa-francesco_20150524_enciclica-laudato-si_it.pdf, consultato il 3 novembre 2019, pp. 7-8.

Parricchi, M. (2015). *Educazione al consumo. Per una pedagogia del benessere.* Milano: FrancoAngeli.

Pennisi, M. F., & Zavalloni, D. (1992). *I bambini e la natura. Esperienze per educare all'ambiente*. Bologna: Nicola Milano.

Rete Clima (2010). *Dichiarazione Universale dei Diritti della Madre Terra*. https://www.reteclima.it/dichiarazione-universale-dei-diritti-della-madre-terra/

The World Commission on Environment and Development, *Our common future*, Oxford, Oxford University Press, 1987, in https://sustainabledevelopment.un.org/content/documents/5987our-common-future.pdf.

UNESCO (2018). *Cos'è il DESS*. https://www.unescodess.it/dess/

UNICEF (1989). *Convenzione sui diritti dell'infanzia e dell'adolescenza*. https://www.unicef.it/Allegati/Convenzione_diritti_infanzia_1.pdf.

Vanzo, A., Trabuio, A., & Delloste, L. (2007). *Guardiamoci intorno… e sporchiamoci le mani. Proposte di percorsi di educazione all'ambiente dalla scuola dell'infanzia in su*. Bologna: Oasi Alberto Perdisa.

Wells, N. M., & Lekies, K. (2006). Nature and the life course: pathways from childhood nature experiences to adult environmentalism. *Children, Youth and Environments,* 16, 1-25.