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Sustainable development and "green" universities: A case study of a Greek university institution

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Abstract.

Environmental sustainability and the green transition are central goals of European societies and a key aspect of the Sustainable Development Goals (SDGs). Universities are institutions that (a) may address the environmental challenges facing the planet, (b) promote the discussion concerning sustainable and environmental policies, (c) establish actions to green their own footprint and, (d) contribute to the promotion of the relative informing of their student or in more general the citizens and social actors. The present communication is based on a broader research that is in its initial stage and is related to the investigation of the attitudes of faculty members and the perceptions of the administrative authorities of a Greek university regarding the role of the university in promoting sustainability and sustainable development. In this paper, we will briefly present the central objectives and policy axes of the international and European green agenda. We will then highlight the role of universities in sustainable development by underlining the importance of higher education for sustainability, which is currently at the center of European attention. The paper will conclude with a focus on the ongoing corresponding research in a Greek university. The methodological tools of this research are semi-structured interviews and text analysis.

Keywords: Sustainable development; Green Universities; environmental policies; knowledge society; higher education

1. Introduction

Investment in knowledge is undoubtedly the driving force behind the development of modern society (Pehlivanidis, 2002). However, one of the distinctive features of the "knowledge society" is the downplaying of the environmental issue. Industrial pollution from

the modern lifestyle brings the 21st century society to face new and complex environmental problems (Naustdalslid, 2011).

Although the first international actions to address climate change have been taken since 1970 (Handl, 2012), it appears that these efforts have failed to reduce the rate of climate change, which is currently the fastest on record (Dietz et al., 2020). In the light of this, sustainable development, with the central goal of safe coevolution of economy, society and the environment, is at the heart of global aspirations and prioritizes the promotion of intergenerational equity (Iqbal &Piwowar-Sulej, 2021).

In this context, the contribution of higher education could be important. Universities by adopting in their culture and in their mode of operation the principles of sustainability can become sustainable models that will raise the awareness of future generations to live in a more sustainable way (Velazquez et al., 2006).

This discussion will be the focus of the paper. It begins with a brief review of global and European policy developments to address climate change. Then, with reference to the relevant "UI Green Metric World University Ranking", the potential contribution of higher education to the issue of promoting sustainable development is highlighted.

It should be noted that the discussion presented in this paper is part of an early research survey, which aims to record the attitudes (and perceptions) of key actors of the University of Patras in relation to the policies and actions adopted by the University towards its transformation to a “green” university. For this reason, the last part of the paper will refer to the research questions and methodological choices of the evolving research.

2. Green Agenda policies

2.1 International Policies

In the late 1960s, the environmental disasters that occurred raised global awareness of the issue of environmental concern and reminded people of the transboundary nature of the pollution of the planet due to human activity (Avrami, 2021). However, in Western societies, concerns of anthropogenic climate change (Davis et al., 2019) were brought to the table of (mainly national) debates from 1990 onwards (Seo, 2017). At that time due to the widespread emission of carbon dioxide and toxic gases, changes in ozone levels began to be observed, with the average temperature of the earth experiencing an annual increase (Hall et al., 2010).

A turning point in the evolution of the environmental issue was the first United Nations World Conference on the Human Environment in Stockholm in 1972. There, the "Stockholm Declaration" laid the foundation for cooperation of 113 member states on environmental management (United Nations, n.d.) and adopted the basic principles of environmental law

(Fragonikolopoulos & Proedrou, 2015). Finally, it was decided to launch the *United Nations Environment Programme* (UNEP) (United Nations, n.d.).

The next turning point is in 1988 with the establishment of the Intergovernmental Panel on Climate Change (IPCC), jointly with the UN and the World Meteorological Organization (WMO). Also in the same decade, the United Nations Framework Convention on Climate Change (UNFCCC) is established in Rio de Janeiro, at the second World Earth Summit. The UNFCCC was designated at the summit as the most competent governing body regarding the observance of international climate policy regulations (Seo, 2017).

The first international commitments on global warming were made at the third conference in Kyoto, Japan in 1997. As a result of the conference, 37 industrialized countries pledged to reduce CO_2 emissions by 5% compared to 1990 by 2012 (UNFCCC, 2008)[1]. However, in 2008 global carbon dioxide emissions were 40 % higher than 1990 levels (Allison et al, 2009). This was followed in December 2009 by the Copenhagen conference, which set an ambitious target for developed countries to reduce their emissions by 25-40% by 2020 and 80-95% by 2050 (Seo, 2017). However, it is seen as a failure as the conference failed as none of the countries committed to the emission reduction target (Groen et al., 2012). At the same time there was no meaningful proposal on what would happen after the end of the first Kyoto Protocol (KP) commitment period (Grubb, 2011).

Twenty years after the historic Rio Conference, in June 2012 world leaders met again for a conference in Rio de Janeiro (Hecht et al., 2012). The most important outcome of the Rio+20 conference (UNEP, n.d.) was the adoption of the report "The Future we want" which was the UN Declaration on Sustainable Development with specific relative goals (EEA, n.d).

At the end of 2015, the 21st climate conference was held in Paris with the participation of 196 countries. It is considered one of the most important climate conferences as for the first time all countries were committed to participate in the effort to reduce their emissions by submitting *Nationally Determined Contributions* (NDCS) plans (Arora & Mishra, 2021). New policies, actions and negotiations started to give hope for a meaningful effort to address climate change. The Paris Agreement was signed by 177 states and was intended to replace the KP to come into force in 2020. However, while the Paris conference is often referred to in the international literature as a 'turning point' in climate negotiations, in fact its legal force appears to have been weak (Seo, 2017).

The most recent UN climate conference was held in Glasgow in 2021. The universal participation of countries was an optimistic step for the climate effort. 200 countries attended the conference to commit to the 'Climate Pact', which was a follow-up to the Paris Treaty (Arora

[1] The Doha modification introduced the second commitment period from 2013 to 2020 (European Commission, 2012; Roberts, 2016).

& Mishra, 2021). The goal of keeping the temperature at the 1.5°C limit was beginning to pay off, while the finalization of the outstanding issues from the Paris meeting agreement was also being launched. Participants agreed to maintain the 1.5°C rise target and the Green Fund raised $600 million for vulnerable countries (United Nations, 2021)[2].

From the above mention of the turning points, it can be seen that global efforts to address climate change have not performed at the desired level. Over time, countries' disagreement on the principle of *climate justice*, which defined the distribution of each country's responsibility for global emissions (Campbell, 2013), as well as countries' disagreement on the *development - emissions control* dichotomy (Cross, 2018), have contributed to the stalling of commitments.

2.2 European policies

The EU Member States produce a significant proportion of global emissions and therefore its role in policy making is crucial. Some of the EU's first steps to tackle climate change were taken in the 1980s (Harris, 2007). However, the landmark period for European environmental policy was the 1990s in which the Fifth EU Environment Action Programme was launched. In addition, in 1993 the European Environmental Bureau was launched, which had the main task of providing information on the environment to the EU Member States (Dimadama, 2002). And in 1992 the *LIFE programme* was launched, which to date is the most important EU financial instrument for climate action (European Union, n.d.).

After the Maastricht Treaty in 1993, the environment was formally established as one of the main pillars of EU actions, and with the Amsterdam Treaty in 1999, the environment was integrated into all European policies (European Parliament, n.d.). The 'combating climate change' became the specific objective of the EU after the Lisbon Treaty in 2009 (Cross, 2018; European Parliament, n.d).

In the context of international developments until 1990, the EU together with the USA were in the crosshairs of climate negotiations, accounting for 60% of the CO_2 emissions of all developed countries (Groen et al., 2012). Thus, in 2001 the USA withdrawal from the Kyoto Protocol was an extremely unfortunate event for the EU, which was forced to take diplomatic action to strengthen the convention through the support of Japan, Russia and Canada. The EU managed to secure Russia's participation in exchange for its membership in the World Trade Organization (Oberthür, 2011)[3].

In 2007, the EU meets its KP target as the reduction in emissions of its member states were 9.3% compared to 1990 levels (Lau et al., 2012). The following year, the green “fast-start”

[2] The 27th climate conference is expected to take place in Egypt from 6 to 18 November 2022.

[3] However, it is worth noting that in 2005 the EU accounted for only 13% of global emissions, while USA, China, India, Brazil, India and South Africa had increased their emissions (Groen et al., 2012).

fund is activated to finance developing countries with USD 5.1 billion. The Copenhagen conference in 2008 supported an ambitious target of a 50% reduction in emissions compared to 1990 levels by 2050 (Groen et al., 2012).

In the same year, the European Commission in its Communication "Towards a Single Environmental Information System (SEIS)" proposed the creation of a robust and reliable system for the dissemination of environmental information to its member states (European Commission, n.d.).

In 2012, at the Qatar meeting, the EU committed to continue the 'fast-start' funding that ended in 2012 until 2015 (European Commission, 2012).

Its contribution to the negotiations was also important at the Paris meeting. In these, it argued that over the period 1990-2014 it had managed to reduce its emissions by 27% while growing its economy by 43% and countered the developing countries' view of the zero potential for sustaining a combination of growth and emission reductions (Cross, 2018).

The EU, having gradually strengthened its international presence through its individual action, has managed to play a leading role in international climate policy making (Cross, 2018; Groen et al., 2012). At the most recent summit, in cooperation with the US, it launched the "Global Methane Pledge", a global initiative aimed at achieving the 1.5°C warming target[4] (European Commission, n.d).

Among the EU's most recent climate actions is the establishment of the European Climate, Infrastructure and Environment Agency - CINEA with the mission to support stakeholders in the implementation of the *European Green Deal* (European Commission, n.d). In addition, in July 2021 the European Commission presented to the Council the "Fit for 55" package - a series of proposals to overhaul environmental legislation to achieve a climate-neutral Europe before 2050 (European Council, n.d.) and approved a €290 million package for over 132 environment and climate-related projects (European Commission, 2021).

3. Sustainable Development & Sustainable University

3.1 The Concept of Sustainable Development

Sustainable development has been an area of debate since the 1970s (Amaral et al., 2015), when scientists warned of the need to set limits to the Western development model (Ruggerio, 2021). At that time, a precursor concept, ecological development, was used, but this term was displaced early on (Estenssoro, 2015).

[4] At the same time, the EU is one of the biggest financiers of climate action, accounting for more than 2/3 of global *green finance*.

One of the first developmental milestones for the field was the *Brundtland Report* of the World Commission on Environment and Development entitled "Our Common Future" published in 1987. It was a UN report that proposed long-term strategic solutions (Sneddon et al., 2006). There, the issue of "intergenerational equity" was also highlighted, i.e. the possibility of each generation to develop with constraints in order to promote respect for the rights of future generations and preserve their well-being (Vretou, 2019). These constraints were not in the form of absolute limits, but in achieving conditions to provide everyone with the opportunity to live on a peaceful and sustainable planet (Brundtland, 1987).

Sustainable development is a multidimensional concept that is under constant exploration (Katsenou & Flogoiti, 2020). According to Johnston et al. (2007), there are more than 300 definitions of the field worldwide. However, the *Brundtland report* formulated a commonly accepted definition, according to which sustainable development is defined as the relationship between development and the environment, and specifically, sustainability looks forward to the interconnection of three interrelated pillars: environment, society and economy. This balance must meet current needs without compromising future generations (Iqbal & Piwowar-Sulej, 2021).

Within this framework of the definition of sustainable development, in 2015, leaders of 195 countries adopted the UN 2030 Agenda in order to create a world that is more just, more peaceful and healthier. Ensuring the well-being of future generations was enshrined in 17 goals (the 17th SDGs) that aim to eradicate hunger, eliminate poverty and inequalities and create more sustainable societies through responsible consumption and respect for nature (Unesco, n.d.).

3.2 Education for Sustainable Development and Higher Education

According to the UNESCO Sustainability Charter, education for sustainable development is a key aspect of quality education and includes not only the development of an individual's cognitive skills, but his/her socio-emotional and behavioral skills. The socio-emotional dimension stems through the cultivation of empathy and solidarity with the aim of a collective effort for survival (Unesco, 2020). In this light, education for sustainable development (ESD) has been at the heart of the educational process in recent years. ESD is an evolution of the term Environmental Education and the difference is that it places the economic and social dimension at its center in addition to the environment (Tigas & Flogoiti, 2019; Siskou, 2020).

The idea of linking the university to sustainability was first discussed in the Stockholm Declaration (Amaral et al. 2015). However, sustainable development research is not effectively promoted by higher education institutions and across disciplines (Lozano et al., 2013)[5].

[5] It should be noted that ideological contradictions are inherent in the debate on sustainable development, which makes the EAA a contemporary challenge (Tigas & Flogoiti, 2019).

The Stockholm Declaration was followed by landmark periods with international declarations of universities' commitment to sustainability[6] (Lozano et al., 2013). However, one of the first and most important steps to promote sustainability in higher education took place in 1996 with the establishment of the Environmental Association for Universities and Colleges (EAUC). The exchange of experience and information between universities, through the EAUC, has been instrumental in disseminating good practice in universities on environmental issues. To date, EAUC lists 300 members (EAUC, n.d.), maintaining a strong position in the field of linking sustainable development to higher education (Amaral et al., 2015). Also in 2005, the Association for the Advancement of Sustainability in Higher Education (AASHE) is founded to promote sustainability in North America. Today, AASHE has 900 members in 48 states in the US (AASHE, n.d.).

3.3 Sustainable University

The campuses are huge facilities with student residences, sports facilities, libraries, conference halls, laundries and laboratories. They consume energy and, through their operation, produce waste that is harmful to the environment. Therefore, in order for universities to become sustainability models, they must first become aware of the impact of their own activity (Amaral et al., 2015). According to Velazquez et al. (2006), a sustainable university is defined as one that eliminates the environmental, economic and social risks arising from its mode of operation and from the consumption of its resources.

In some universities, energy management is a major issue and in order for organisations to become energy responsible, they are implementing energy certification - *ISO 14001*. This is an international standard for energy management, which indicates the existence of an environmental management system, while helping every business and organization to grow in a more sustainable way (Amaral et al., 2015).

A different rating system that is applied in universities in order to achieve climate neutrality of facilities is the *Leed certificate* - a green accreditation system that ensures whether a building meets sustainable requirements. The *Leed Certificate* was initiated by the US Green Building Council and is now one of the most recognised green building accreditation schemes. The program certifies five categories involving:

- the sustainable location of the facility,
- water efficiency,
- energy and atmosphere,

[6] Briefly: the *Tallories Declaration* in 1990, the *Halifax Declaration* in 1991, the *Swansea Declaration* in 1993, the *Luneburg Declaration* in 2001 and the *Torino Declaration* in 2009 (Lozano et al., 2013).

– materials and resources; and
– the quality of the indoor environment

(Matisoff et al., 2014).

In the context of linking sustainability to higher education, various global rankings have been developed in recent years that rank universities according to the degree of adoption of green policies. One of these global rankings is the *UI GreenMetric University World Ranking* which is launched in 2010.

The UI GreenMetric World University Ranking collects its data based on 39 indicators from 6 criteria in the areas of sustainability and presents a single score for each participating university, communicating its efforts in implementing environmentally friendly practices. The ranking is annual and highlights green practices from universities around the world. The measurement criteria for the UI GreenMetric World University Ranking are shown in Table 1.

Table 1: Criteria of UI GreenMetric World University Ranking

Criteria	Description of the criteria and indicators
Settings and Infrastructure (SI) – 15%	11 indicators that focus on green campus spaces and budgeting for sustainable campus development.
Energy and Climate Change (EC) – 21%	10 indicators that focus on the use of energy efficiency devices and the development of renewable energy sources.
Waste (WS) – 18%	6 indicators that focus on the recycling programme, toxic waste, organic and inorganic waste.
Water (WR) – 10%	5 indicators that focus on reducing the use of groundwater.
Transportation (TR) – 18%	8 indicators that focus on the general transport policy, such as limiting the use of private vehicles.
Education and Research (ED) – 18%	11 indicators that focus in courses, research and reports related to sustainability.

Source: UI GreenMettric World University Ranking methodology. Available at: https://greenmetric.ui.ac.id/about/methodology

Today the *UI GreenMetric World University Ranking* lists 2,553,576 active members from 956 universities and a total of 80 countries around the world. The general idea of this ranking is to highlight the current status and maintain a global network of higher education sustainability and to mobilize members and leaders of all higher education institutions to reduce the footprint of their universities through the adoption of the most innovative and environmentally friendly practices (UI GreenMetric World University Rankings, n.d).

4. The ongoing research – A Greek "green" University?

4.1 Purpose of the research

This paper is part of a larger research project that is in its early stages. Specifically, the ongoing research, in the context of rapid climate change, will focus on the University of Patras in order to investigate the actions adopted by the institution towards its transformation into a "sustainable university". It will search for challenges and changes/interventions both at the level of education (curriculum and other educational activities) related to sustainable development and at the level of the administration of a Greek HEI, in our case the University of Patras.

4.2 Research questions and initial methodological choices

For the purposes of the study, the research questions that are attempted to be answered, according to the views of the key-actors of the University of Patras are the following:

- What are the attitudes of the key-actors of the University of Patras, regarding the educational role of the university, as an agent of sustainable development in the knowledge society?
- What are the perceptions of the key-actors of the University of Patras regarding the actions already implemented at the university for sustainable development and what new (or additional) actions do they think could be adopted?
- What challenges does the University of Patras face in its effort to transform itself into a green operating model?
- What are the perceptions of the members of the University of Patras involved in the management and strategic planning of the institution?

For the needs of the above research we chose qualitative methodological approaches. Specifically, for data collection we use two tools, thematic analysis and semi-structured interviews. In particular, the first source of the research data will be secondary data from the websites of the Departments of the University of Patras and their Curricula, in order to highlight the active courses that are relevant to the topic. At the same time, the university's policy documents will be analysed to highlight the choices made, as stated in them, related to the research-related issues. Then, after the initial exploration of the field, we will focus on the key-actors related to the topic. These will be (a) professors (faculty) who have undertaken a subject that is most likely related to sustainable development and (b) members of the academic community who are associated with the development and implementation of policies and actions of the University of Patras related to sustainable development and its effort to become a "green" university.

5. Conclusion

Climate change is a long-standing issue of debate and global concern and in today's knowledge society it is more relevant than ever. With the dominant culture and modern lifestyles, environmental issues are emerging beyond traditional and contemporary environmental issues, which trample on the principles of intergenerational equity. In this context, environmental scientists and other experts call for immediate intervention and emergency solutions. At the same time, it seems that global and European policies cannot easily meet the objectives they set.

At the international (mainly) level, the emerging disagreement between developed and developing countries on the principle of climate justice and the discrepancy between the call for development and the call for emissions is also a challenge. The EU, on the other hand, has gradually become one of the major financiers of relevant actions and seems to be leading the effort to achieve climate neutrality. In the policy areas that are gradually being developed, education, and in particular higher education, seem to have a central role. (Higher) education has historically played the most active role in the transformation of society, which is why many policies and the discourse of international organisations include actions within educational structures and, in particular, within higher education institutions. By applying the principles of sustainability in higher education, universities could be an example of sustainable operation and promote the debate on sustainable development. Firstly by reducing their own footprint on the earth and then by enhancing the production of knowledge and education (through the integration of sustainable development into the curricula in the different disciplines), universities may raise awareness among future generations and help to improve the conditions for sustainable development. However, all this is to be explored in future worldwide research. In this research, we indent to focus on the relevant choices and actions of a single Greek university institution.

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References

AASHE. (n.d.). The Association for the Advancement in Higher Education. [Online]. Available: https://www.aashe.org/about-us/who-we-are/

Allison, I., Bindoff, N. L., Bindschadler, R. A., Cox, P. M., de Noblet, N., England, M. H., Francis, J. E., Gruber, N., Haywood, A. M., Karoly, D. J., Kaser, G., Le Quéré, C., Lenton, T. M., Mann, M. E., McNeil, B. I., Pitman, A. J., Rahmstorf, S., Rignot, E., Schellnhuber, H. J., Schneider, S. H., Sherwood, S. C., Somerville, R. C. J., Steffen, K., Steig, E. J., Visbeck,

M. and Weaver, A. J. (2009). *The Copenhagen Diagnosis, 2009: Updating the World on the Latest Climate Science*. Sidney: The University of New South Wales Climate Change Research Centre (CCRC).

Amaral, L., P., Martins, N. and Gouveia, J., B. (2015). Quest for a sustainable University: a review, *International Journal of Sustainability in Higher Education,* vol. 16, (2), pp. 155 – 172.

Arora, K., N. and Mishra, I. (2021). COP26: more challenges than achievements, *Environmental Sustainability,* vol. 4, pp. 585–588.

Avrami, L. (2021). The development of Greek environmental policy in the light of European developments (1981-2021), *Area & Region,* vol. 12 , pp. 65-98. (In Greek).

Brundtland, G. (1987). Our Common Future-Call for action, *Environmental Conservation,* vol. 14, (4), pp. 291-294.

Campbell, D. (2013). After Doha: What Has Climate Change Policy Accomplished? , *Journal of Environmental Law,* vol. 25*(*1), pp. 125-136.

Cross, M. (2018). Partners at Paris? Climate negotiations and transatlantic relations, *Journal of European Integration,* vol. 40(5), pp. 571-586.

Davis, J., Moulton, A., A., Sant, L., V. and Williams, B. (2019). Anthropocene, Capitalocene, ... Plantationocene?: A Manifesto for Ecological Justice in an Age of Global Crises, *Geography Compass,* vol. 13(5), pp. 1-15.

Dietz, T., Shwom, R., L. and Whitley, C., T. (2020). Climate Change and Society, *Annual Review of Sociology,* vol. 46, pp. 1-24.

Dimadama, Z. (2002). *Environmental policy and management: implementation of environmental management systems in Greece,* PhD thesis, Panteion University of Social and Political Sciences. (In Greek).

EAUC. (n.d.). Who we are. Available at Who We Are | EAUC.

EEA. (n.d.). The future we want - declaration of the UN conference on sustainable development, Rio (2012). Available: https://www.eea.europa.eu/policy-documents/the-future-we-want-2013declaration

Estenssoro, F. (2015). El Ecodesarrollo Como Concepto Precursor Del Desarrollo Susentable Y Su Influencia, *En America Latina Universum,* vol. 30, pp. 81 – 99.

European Commission. (2012). *Doha Climate Conference takes modest step towards a global climate deal in 2015*. Press Release Doha, 8 December 2012.

European Commission. (2021). LIFE Programme: More than €290 million in EU funding for nature, environment and climate action projects. Rome, pp. 1-2. Available: https://ec.europa.eu/commission/presscorner/detail/en/ip_21_6178

European Commission. (n.d.). EU at COP26 Climate Change Conference. Available: https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal/climate-action-and-green-deal/eu-cop26-climate-change-conference_en

European Commission. (n.d.). *History of LIFE*. Available: https://cinea.ec.europa.eu/programmes/life/history-life_en

European Council. (n.d.). Fit for 55. Available: Fit for 55 - The EU's plan for a green transition - Consilium (europa.eu)

European Parliament. (n.d.). Environmental policy: general principles and basic framework. Available: https://www.europarl.europa.eu/factsheets/en/sheet/71/environment-policy-general-principles-and-basic-framework

European Union. (n.d.). *European Environmental Agency (EEA)*. Available: https://european-union.europa.eu/institutions-law-budget/institutions-and-bodies/institutions-and-bodies-profiles/eea_el

Fragonikolopoulos, Ch. and Proedrou, F. (2015). Global governance - the political aspect. In Fragonikolopoulos, H., & President, F. (Eds.) *Global politics - actors, structures & processes.* Kallipos, Open Academic Publications. (In Greek).

Groen, L., Niemann, A. and Oberthür, S. (2012). 'The EU as a Global Leader? The Copenhagen and Cancun UN Climate Change Negotiations', *Journal of Contemporary European Research*, vol. 8(2), pp. 173- 191.

Grubb, M. (2011). Durban: the darkest hour?. *Climate Policy*, vol. 11(6), pp. 1269-1271.

Hall, S., Held, D. and Mcgrew, A. (2010). *Modernity today (Economy, Society, Politics, Culture).* Athens: Savalas. (In Greek).

Handl, G. (2012). Declaration of the United Nations conference on the human environment (Stockholm Declaration), 1972 and the Rio Declaration on Environment and Development, 1992, *United Nations Audiovisual Library of International Law*, vol. 11(6) pp. 1-11.

Harris, P. G. (Ed.). (2007). *Europe and global climate change: Politics, foreign policy and regional cooperation*. UK: Edward Elgar Publishing.

Hecht, A., D., Fiksel, J., Fulton, S., C., Yosie, T., F., Hawkins, N., C., Leuenberger, H., Golden, J., S. and Lovejoy, T., E. (2012) Creating the future we want, *Sustainability: Science, Practice and Policy*, vol. 8(2), pp. 62-75.

Iqbal, Q. and Piwowar-Sulej, K. (2022), "Sustainable leadership in higher education institutions: social innovation as a mechanism", *International Journal of Sustainability in Higher Education*, vol. 23(8), pp. 1 -20.

Johnston, P., Everard, M., Santillo, D. and Robert, K. (2007). Reclaiming the Definition of Sustainability, *Environmental Science and Pollution Research, vol. 14(*1), pp. 60-66.

Katsenou H. and Flogoiti E. (2020). Exploring the perspective of sustainability in the contemporary university, *Environmental Education for Sustainability*, vol. 2(1), pp. 16-28. (In Greek).

Lau, L., C., Lee, K., T. and Mohamed, A., R. (2012). Global warming mitigation and renewable energy policy development from the Kyoto Protocol to the Copenhagen Accord—A comment, *Renewable and Sustainable Energy Reviews,* vol. 16(7), pp. 5280-5284.

Lozano, R., Lukman, R., Lozano, F. J., Huisingh, D. and Lambrechts, W. (2013). Declarations for sustainability in higher education: becoming better leaders, through addressing the university system, *Journal of Cleaner Production*, vol. 48, pp. 10-19.

Matisoff, D., C., Noonan, DS. and Mazzolini, AM. (2014). Performance for Marketing Benefits? The Case of Leed Certification, *Environmental Science*, vol. 48(3), pp. 2001 – 2007.

Naustdalslid, J. (2011) Climate change – the challenge of translating scientific knowledge into action, *International Journal of Sustainable Development & World Ecology*, vol. 18(3), pp. 243-252.

Oberthür, S. (2011) Global Climate Governance after Cancun: Options for EU Leadership. *The International Spectator*, vol. 46(1), pp. 5-13.

Pehlivanidis, T. (2002). Post-industrial society, Post-Fordism, Post-Modernism. Mutation or Transformation. In Theses, issue 78. The real problems of the people. Journals. (In Greek).

Roberts, D. (2016). A global roadmap for climate change action: From COP17 in Durban to COP21 in Paris, *South Africa Journal of Science,* vol. 112, pp. 1 -3.

Ruggerio, C., A. (2021). Sustainability and sustainable development: A review of principles and definitions, *Science of Total Environment*, vol. 786, pp. 1 -11.

Seo, S., N. (2017). Beyond the Paris Agreement: Climate change policy negotiations and future directions, *Regional Science Policy & Practice,* vol. 9(2), pp. 121-141.

Siskou, P. (2020). *Building green higher education institutions in Greece: The case of the Democritus University of Thrace*. PhD thesis, Democritus University of Thrace. (In Greek).

Sneddon, C., Howarth, R., B. and Norgaard, R., B. (2006). Sustainable development in a post – Brundtland world, *Ecological Economics,* vol. 57(20), pp. 253 – 268.

Tigas I. and Flogoiti E. (2019). The Greek educational policy for the transition from Environmental Education to Education for Sustainable Development, *Environmental Education for Sustainability*, vol. 1(1), pp. 44-58. (In Greek).

UNEP. (n.d.). Supporting the 2030 Agenda and "The Future we want''. Available: https://www.unep.org/explore-topics/environmental-rights-and-governance/what-we-do/supporting-2030-agenda-and-future-we

UNESCO. (2020). *Education for sustainable development: a roadmap*. United Nations Educational, Scientific and Cultural Organization, Paris.

UNESCO. (n.d.) Unesco and Sustainable Development Goals. Available: https://en.unesco.org/sustainabledevelopmentgoals

UNFCCC. (November, 2008). *Kyoto Protocol Reference Manual*. United Nations Framework Convention on Climate Change. Available: https://unfccc.int/sites/default/files/08_unfccc_kp_ref_manual.pdf

United Nations. (2021). COP 26: The Negotiations explained. Available: https://ukcop26.org/wp-content/uploads/2021/11/COP26-Negotiations-Explained.pdf

United Nations. (n.d.). Sharm El – Sheikh Climate Change Conference – November 2022. Available: https://unfccc.int/cop27

United Nations. (n.d.). United Nations Conference on the Human Environment, 5-16 June 1972, Stockholm. Available: https://www.un.org/en/conferences/environment/stockholm1972

Velazquez, L., Munguia, N., Platt, A. and Taddei, J. (2006). Sustainable university: what can be the matter? , *Journal of cleaner production*, vol. 14, pp. 810 – 819.

Vretou, V. (September, 2019). The basic principles of international environmental law and future generations. Law + Nature. Available: https://nomosphysis.org.gr/19578/oi-vasikes-arxes-toy-diethnoys-perivallontikoy-dikaioy-kai-oi-mellontikes-genies/(In Greek).