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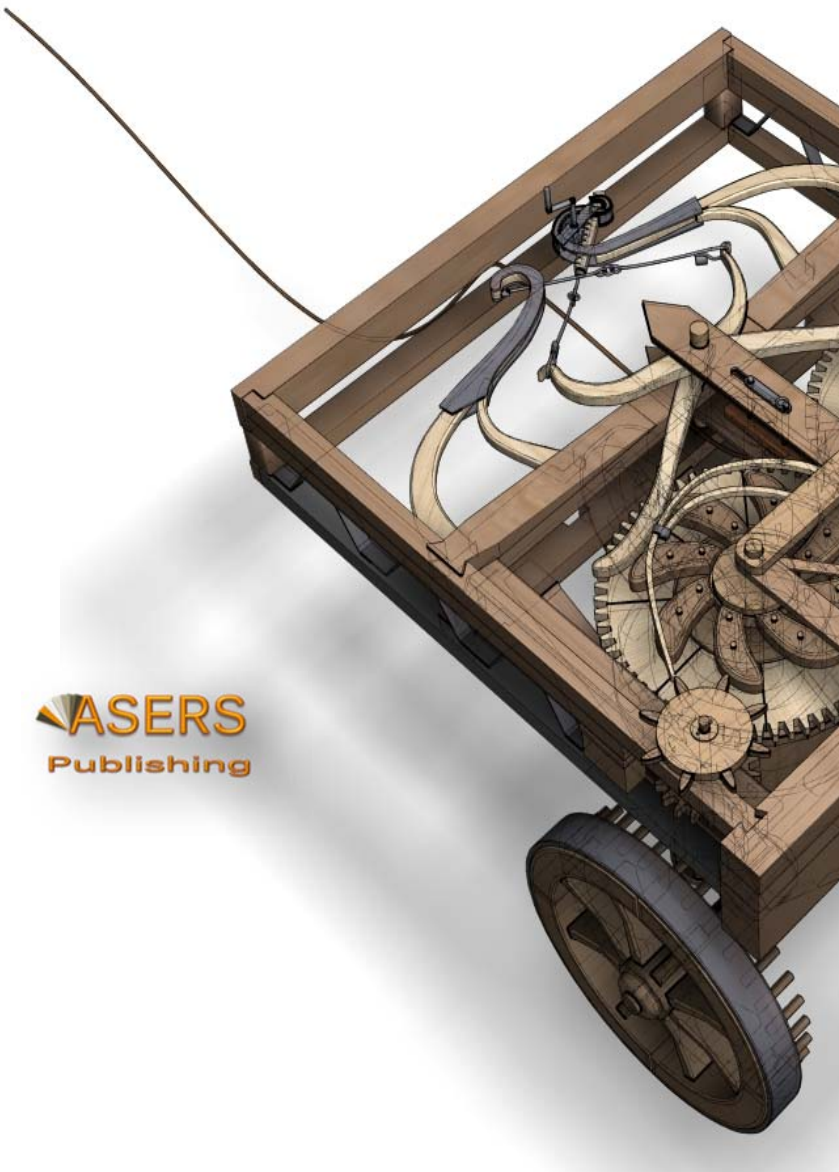

Quarterly
Volume XI
Issue 3(43)
Summer 2020
ISSN 2068 – 7729
Journal DOI
https://doi.org/10.14505/jemt

ASERS Publishing

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Journal of Environmental Management and Tourism

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DOI: https://doi.org/10.14505/jemt.v11.3(43).27

Sustainable Ecological Development of the Global Economic System. The Institutional Aspect

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Suggested Citation:

Dovgal, O. *et al.* (2020). Sustainable Ecological Development of the Global Economic System. The Institutional Aspect. *Journal of Environmental Management and Tourism*, (Volume XI, Summer), 3(43): 728 – 740. DOI:10.14505/jemt.v11.3(43).27

Article's History:

Received 17th of March 2020; Received in revised form 8th of April 2020; Accepted 7th of May 2020; Published 22nd of June 2020.

Abstract

Socio-ecological-economic relations and the institutional environment are shaped and changed in complex interaction. The main aim of this research is an institutional format development of the interaction of economic, social and environmental components of the global economic system, which could regulate the impact of institutional mechanisms and instruments of implementing the principles of ecological growth on the global economic system, for ensuring sustainable ecological development of the world economy. The methodological basis of the article is the general scientific methods of scientific research: induction and deduction, comparative analysis and synthesis, generalization and realization of results, as well as historical and methods of logical analysis and abstract modeling.

The article summarizes the main findings obtained from the study of the institutional aspect of ensuring sustainable ecological development of the global economic system. The search for strategic priorities for the development of global economic systems has necessitated considering the need for complex institutional changes, which should contribute to ensuring socio-economic growth in the context of limited natural resources and the need to solve global environmental

problems. In present research the authors have systematized and analyzed institutional instruments required for regulating ecological and economic relations and institutional leverage for increasing the appeal of environmental protection measures. The authors have proposed an institutional format for the interaction of economic, social and environmental components of the global economic system, which is the basis for policy development towards creating and developing a system of environmentally sensitive administration and management in the framework of green global economic development.

Keywords: ecologization; sustainable ecological development; global economic system; institutional changes; socio-ecological-economic interaction.

JEL Classification: K32; M16; O13; O44; Q56; Q57.

Introduction

Sustainable development is crucial for determining the strategic priorities for the development of global economic systems, which necessitate implementing complex institutional changes that should contribute to ensuring socio-economic growth in the context of limited natural resources and the need to solve global environmental problems. Addressing a set of institutional organizational challenges posed by ecologically sustainable development requires active involvement of the entire global community, global coordination of actions, and incorporating guidelines and fundamental principles into supranational and national development programmes. As the analysis shows, socio-ecological-economic relations and the institutional environment are shaped and changed in the process of complex interaction. On the one hand, institutions reflect and reinforce the rules of the system, as they promote the interests of different business entities, reflecting their role in the overall system of relations, both at the local and global levels. On the other hand, socio-ecological-economic relations themselves develop under the influence of the institutional environment, stabilizing the established order, fixed in its elements (norms, traditions, the rules of conduct, and organizations) (Atkinson *et al.* 2009). Based on this, the international institutional framework for sustainable development contains the following aspects: decisions, norms, standards and commitments adopted at the international level, as well as instruments for cooperation in the form of programmes, strategies and action plans implemented within international institutions in accordance with the international legal framework.

1. Literature Review

The concept of environmental protection emerged as a result of the recognition in many world countries the need to take into account environmental factors due to the deep destabilization of the environment, the enormous load increase on ecosystems, the qualitative changes in the relationships between nature and society as a result of the gigantic development of productive forces and the growth of population. Within the framework of this concept, more than 100 countries have established governmental structures related to environmental protection, and the legal field of environmental protection has begun to develop rapidly. This concept recognizes the need to take into account the environmental factor, which is considered as a factor that restrains economic development.

The traditional model of economic growth in developed countries, through increased natural resources use, has largely exhausted itself, as confirmed by current research and reflected and documented in UN resolutions. T. Malthus (Malthus 1798, 14-29) for the first time in 'Essays on Population' raised the problem of economic growth restriction caused by increasing the population of humanity, which intensifies the problems associated with resources constraint. T. Malthus's analysis was further developed in 1972 by D. Meadows's "Limits to Growth" (Meadows *et al.* 1972, 4-12), which was presented as a report to the Roman Club and acquired the status of a classic concept of world development. D. Meadows' research focuses on five global trends in environmental dynamics: industrialization accelerating, rapid population growth, rising hunger, depletion of non-renewable resources, and environmental degradation. D. Meadows' next work "Limits to Growth" (Meadows *et al.* 2007) changed the awareness of human development indicators at the expense of a new emphasis on the quality of development.

By the end of the 70s in environmental management concepts, the need for planetary coordination to solve global problems and strengthen state institutions in the field of ecology began to come to the fore. These questions are reflected in the works of such scientists as E. Laszlo, "Goals for Humanity" (1977), M. Gurney, "Third World - Three Quarters of the World" (1980), B. Gavrilishin, "Milestones to the Future" (1980), A. King and B. Schneider, "The First World Revolution" (1991) (Westra and Lemons 1995). Awareness of the danger from the prevailing technological type of economic development was the impulse for the development of concepts of world development, taking into account environmental factors.

Modern developments towards identifying and solving the problems of environmental management and greening process are based on theoretical and methodological studies by such researchers as I. Blanc, D. Friot, M. Margni, O.

Jolliet (Blanc *et al*. 2008, 251-260), J. Huber (1991), M. Colby (1989), E. Weizsecker (1995; 2010) and others. M. Colby (1989) considered the evolution of environmental management concepts without considering the requirements of ecologically sustainable development of the global economic system. Based on the generalization of the existing concepts of nature management M. Colby (1989) proposed five paradigms of environmental management: «Frontier Economics», «Deep ecology», «Environmental protection», «Resource management», «Eco-development». E. Weizsecker, A. Lovins and L. Lovins (Weizsäcker *et al*. 1995) proposed the concept of "Factor Four", which provides a 4-fold increase in resource productivity, and later "Factor of Five", the main focus in which is made to achieve an 80% increase in resource efficiency, specific technologies and solutions, as well as ways of these solutions and technologies global scaling, in order to change the economic system in favor of climate change, fresh water deficit, hunger, waste problem solving (Weizsäcker *et al*. 2010).

P. Gallagher and Y. Serre (2011), G. Garsous (2019) analyzed the specific features of the implementation of regional trade agreements including environmental provisions also without considering the needs of sustainable development. In his work, J. McCormick (2001) considered the directions of environmental policy within the EU, and D. Zerkalov (2013) in his study emphasized general environmental problems of sustainable development. Sustainable development of modern civilization and the life quality of population is directly related to insufficient energy supply (Matyushenko, Goncharenko *et al.* 2015, 9). To solve the contradictions between economics and nature, the scientists O. Banerjee, M. Cicowiez, M. Horridge and R. Vargas (Banerjee *et al*. 2016) have proposed the approach of the analysis of the policy impacts on the economy and the environment in a quantitative, comprehensive, and consistent framework.

The transition to sustainable development and its management is a very long process, since it requires solving unprecedented social, economic and environmental tasks. As we move towards sustainable development, the very idea of it will change and be refined, people's needs, will be rationalized in accordance with environmental constraints, and the means of meeting these needs will be improved (Mukhtarova *et al.* 2018, 1812). Thus, the analysis of numerous research studies shows that modern researchers pay considerable attention to the problem of ensuring ecologically sustainable development of the global economic system and ecological policy, including environmental taxation, improvement (Grundel *et al.* 2020, 168; Shcherbak *et al.* 2020, 176-188). However, these authors did not address the institutional aspect of ensuring sustainable ecological development of the global economic system.

2. Methodology of the Research

The authors used general scientific and special methods of cognition: structural-logical method – to build the general structure of the research; historical-logical method – to systematize and study the evolution of environmental concepts in the context of global environmental challenges; comparative analysis method – to study the methodological apparatus for the assessment of ecologization processes in the global economic system; content analysis and bibliographic method – to research current trends to ensure environmental sustainability of the global economic system; historical approach – to identifying strategic priorities for the development of mechanisms for the interaction of economic, social and environmental components of global economic systems; statistical method – to identify the main institutional levers of influence to increase the attractiveness of implementing environmental measures; methods of logical analysis and abstract modeling – to study the institutional basis of ensuring sustainable environmental development of the global economic system; graphic method – to visualize the results of the research; scientific generalization – to justify the conclusions.

Based on the analysis of the scientist's achievements on the methodology of studying sustainable ecological development of the global economic system we can determine the absence of a unified approach to assessing the impact of environmental factors on the economic development of the world countries. Thus, we propose a methodical approach to research sustainable ecological development of the global economic system, which is carried out in the following sequence: characterization of the state and tendencies of processes of sustainable ecological development of the global economic system; analysis of an institutional framework for sustainable ecological and economic development; development the Management interconnections system that determines international environmental policy; assessment of environmental components and problems of economic development at national and global levels; identification of the main institutional mechanisms and tools for implementing the principles of environmental growth; development of an institutional format of the interaction of economic, social and environmental components of the global economic system. The proposed algorithm creates prerequisites for taking into account the mutual influence of global trends of environmental factors on the sustainable economic development of the world countries, as well as the possibility of developing measures in the direction of effective ecologically oriented management system and international environmental policy.

3. Institutional Framework for Sustainable Ecological and Economic Development

The most important platform for coordinating international sustainable development efforts is the UN (United Nations 2019a) that has adopted several international instruments that have formed the basis for the development of local and national strategies, policies and measures in the field of ecologically sustainable development. The most important agreements that form the legal and institutional framework for international cooperation include conventions on the organization of international trade in endangered species, conservation of migratory species of wild animals (*e.g*. the Bonn Convention), environmental impact assessment in a global context, ozone layer protection, combatting desertification, climate change, public participation in decision-making and access to justice in environmental matters, biodiversity, persistent organic pollutants, and a number of other issues (Batova 2018).

Creating an effective institutional framework for sustainable development and improving the mechanisms for its achievement is the basis for the implementation of the 2030 Agenda for Sustainable Development. Priority is given to the international coordination of sustainable development on the basis of "institutional frameworks" (United Nations 2019b), which should achieve balanced integration of its components to ensure finding common solutions to global problems, facilitate the fulfillment of the commitments enshrined in the outcome documents of UN conferences and summits in the economic, social and environmental spheres, as well as respond to national priorities and strategies (Sustainable Development Goals 2015).

For example, the United Nations Environment Programme (UNEP), adopted by the UN (General Assembly Resolution 2997, December 15, 1972), has the primary goal of providing for the organization and implementation of measures to protect and improve the environment for the benefit of present and future generations. UNEP plays a significant role in the development of international conventions in the field of ecology and environmental protection, cooperates with states and non-governmental international organizations, implements environmental projects, and is a co-founder of the Global Environment Facility and the Intergovernmental Panel on Climate Change. UNEP also leads annual celebrations of World Environment Day. UNEP's work addresses the following areas: 1) early conflict prevention and assessment, 2) implementation of environmental policy, 3) eco-technology development, production and economy, 4) regional cooperation, 5) environmental law and conventions, 6) environmental protection at the global level, 7) public awareness (United Nations 2019c).

Another institutional measure is the United Nations Development Programme (UNDP), which was established in 1965 (United Nations 2019d). The activities of this organization are aimed at assisting the member states in the field of environmental development. UNDP supports research, helps to establish training programmes and develop energy resources, provides advisory and expert services as well as professional training, supplies technology and equipment, and more. Since 1990, UNDP has been annually publishing Human Development Reports, which highlight the most important current and future issues of economic and social development, as well as environmental issues.

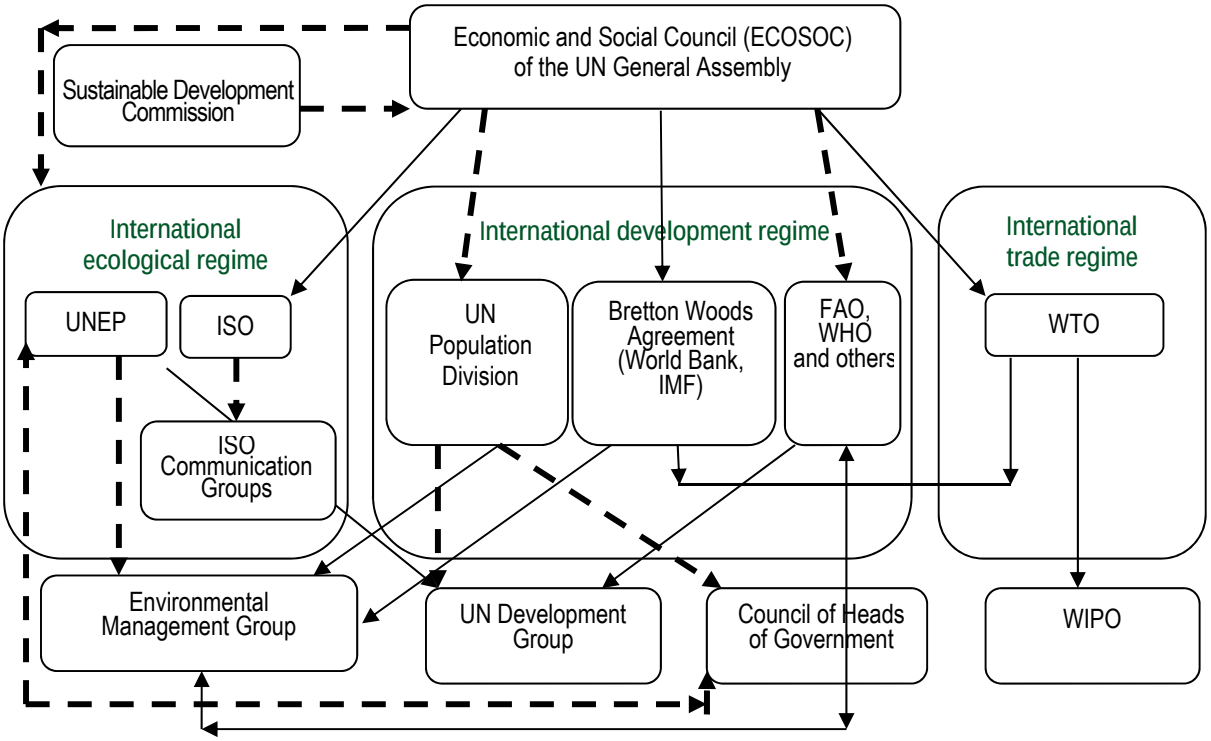
Figure 1 shows the system of management interconnections that determines international policy on environmental sustainability, developed by authors.

The main groups of managerial structures are those that characterize international regimes on the basis of ecology, development, and trade, coordinated by the United Nations Economic and Social Council (ECOSOR).

The international environmental policy management system integrates the activities of various organizations involved in addressing sustainable development and trade issues. This management system includes: World Trade Organization (WTO), World Bank, International Monetary Fund (IMF), UN Food and Agriculture Organization (FAO), World Health Organization (WHO), United Nations Development Programme (UNDP), United Nations Environment Programme (UNEP), and other global organizations. They form the institutional system of international coordination and implementation of environmental policy, as well as the implementation of measures in the field of sustainable development and solving global environmental problems.

The World Trade Organization plays an important role in shaping the sustainable development (and green growth) mechanism within the world economy. Provisions on the need for sustainable development, environmental protection and preservation were already included in the Charter of its predecessor – the *General Agreement on Tariffs and Trade* (*GATT*). Commitment to these goals was later enshrined in the Marrakesh Agreement establishing the World Trade Organization. Currently, the package of agreements that operate within this organization contains none focusing exclusively on environmental problems, but the issues of ensuring sustainable development are included in existing agreements (WTO 2020).

Figure 1. Management interconnections system that determines international environmental policy



Notes: Rules, procedures, and principles apply without being bound by a specific regime.
Dotted lines indicate strong and direct links.
Solid lines indicate more indirect connections.
Source: Author' materials

In 1995, the Committee on Trade and Environment was set up within the framework of the WTO to discuss the impact of environmental issues on the dynamics of trade development on an ongoing basis. The urgency of further refining trade policy commitments to sustainable development has been recognized at the Doha Development Round of the WTO. During the 2001 round, the Ministerial Declaration was adopted, covering the issues of correlation between WTO provisions and multilateral environmental agreements, tariff and non-tariff barriers to environmental goods and services, environmental labeling, the effect of environmental measures on market access, and agricultural subsidies (WTO 2001).

One of the major achievements of international cooperation in the field of sustainable development has been international environmental agreements. Currently, there exists an extensive system of international environmental law (no other area of international law has such legislation) operating in accordance with the principles of sustainable development. These agreements are predominantly bilateral (more than 1500 agreements) and regional in nature (agreements on air and water pollution control in Europe, the 1979 Geneva Convention on Long-range Transboundary Air Pollution and its protocols, the 2015 Paris Agreement on Climate Change within the UN Framework Convention on Climate Change (UNFCCC) (United Nations 2015a), the Convention on the Transboundary Effects of Industrial Accidents (Helsinki 1992), with more than 200 fully international environmental agreements (Dovgal and Panova 2019, 45-56).

A well-known international *treaty* is the Kyoto Protocol extending the 1992 UN Framework Convention on Climate Change, which obliges developed and transition economies to reduce carbon dioxide (CO2) emissions. Thus, according to this agreement, EU countries must reduce CO2 emissions by 8%, the US – by 7%, Japan and Canada – by 6%, Eastern Europe and the Baltic countries – by 8%, and Russia and Ukraine must keep emissions at 1990 level (United Nations 1997).

The most significant environmental agreements are those addressing such issues as protecting the Earth's ozone layer, reducing the greenhouse effect, trading in hazardous wastes, chemicals and pesticides, trading in endangered plant and animal species, biodiversity conservation, and production of persistent organic pollutants. In general, around 70% of countries around the world have signed key agreements on environmental protection (Dovgal and Panova 2019, 45-56).

In a globalizing economy, the decisions taken by the International Organization for Standardization (ISO) play an important role in developing international approaches and rules for environmental accounting. The important standards for environmental policy are ISO 14001: 2015, which sets requirements for the environmental management system, ISO 14064: 2006 concerning the quantification, monitoring, reporting and verification of greenhouse gas emissions data, ISO 19011: 2012 standardizing environmental audit measures, and ISO 50001: 2018 standard on energy management (ISO 2020).

An important international forum that discusses environmental issues is the G7, which includes representatives from the US, Japan, Germany, the United Kingdom, Canada, Italy, and France. Thus, environmental issues were discussed in 1992 at the Munich Summit and in 2002 at the Genoa Summit on climate change. The Evian Summit (France 2003) adopted an Action Plan on *Science* and *Technology* for *Sustainable Development*, mainly in three areas: global monitoring, cleaner and more efficient energy, air pollution and climate change control, agriculture and biodiversity (Safonov 2008, 36-40). The Gleneagles Summit (Scotland 2005) also discussed global climate change and Africa's problems. At the same summit, the Climate Change, Clean Energy and Sustainable Development Plan of Action was proposed, as well as measures in the following areas: support for the development of clean energy, improving energy use technologies, prevention and reduction of climate change damage, support for research and development, financing the transition to clean energy, combatting illegal deforestation and the like. The summit in Heiligendamm (Germany 2007) discussed the development of the global economy, involving the largest emerging economies in the system of global responsibility, the problem of combating global climate change and the development of African countries. Following the summit, a political statement on climate change and energy was adopted, which was also signed by the heads of state and government of Brazil, China, India, Mexico and South Africa. The Los Cabos Summit in 2012 discussed sustainable development issues, including environmental issues. In particular, the signed declaration stated that "comprehensive green growth in the context of sustainable development and poverty eradication can help achieve development and economic goals while preserving the environment and improving the well-being of society". However, green growth should not be used to introduce barriers to trade and investment. Following the summit, the Green Growth Action Alliance was established, a public-private partnership that brings together companies and international financial institutions to invest in clean energy, transport, agriculture and other green growth areas.

Thus, on the whole, it is possible to note significant progress in shaping the institutional setting for the development and effective implementation of measures to ensure sustainable development, including its environmental dimension.

4. Institutional Format of Interaction of Economic, Social and Environmental Components of the Global Economic System

As is known, in general, the function of sustainable development over time considering the main parameters can be represented in the following form:

$$F_t (L, K, P, I) < F_{t+1} (L, K, P, I), \quad (1)$$

where L - labor, K - artificially created (physical) capital, means of production, P - natural resources, I - Institutional Factor t > 0 (Barishpolets, 2011).

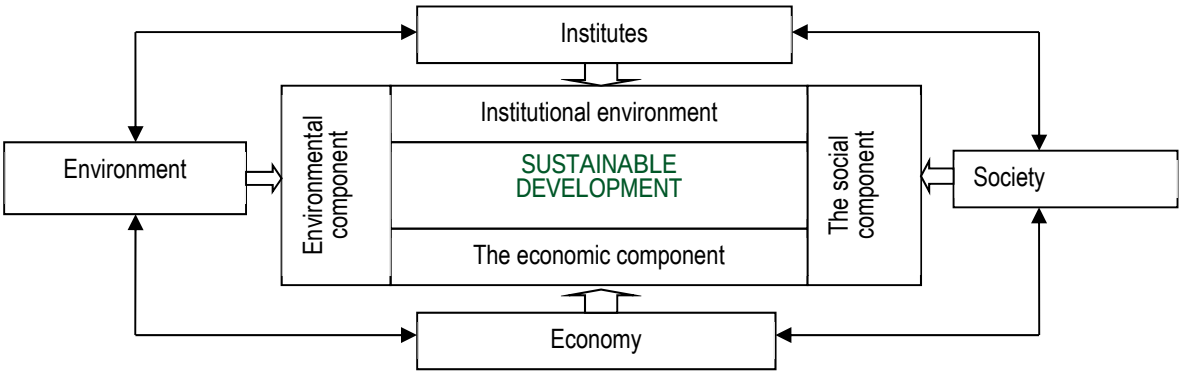
That is, the institutional environment is one of the four dimensions of sustainable development, including also presents economic, environmental and social components (Figure 2).

The economic component is the most mobile, while the environmental and social components are relatively conservative, but in the aggregate, they are interconnected and, in conjunction with one another, create sustainable development goals (Table 1).

Reconciliation of economic interests at all levels is carried out by both formal and informal institutions, wherein the creation and change of formal institutions largely depends on the informal influence from representatives of different social macro groups (Zerkalov 2013).

Thus, the institutional system is closely linked to socio-environmental drivers of economic growth. In particular, sustainable economic growth provides for improved living standards, while the development of environmentally friendly technologies and markets for environmental goods and services contributes to the improvement of the environment. At the same time, along with the advantages, economic growth has disadvantages as well, which are mainly an increase in waste.

Figure 2. Interaction of the main components of sustainable development



Source: Author' materials

Table 1. Sustainable development tasks in the process of socio-ecological-economic interaction

The level of interaction of the elements	Characteristics
Economic and social	Achieving equity within one generation (such as income sharing) and providing targeted assistance to the poor
Economic and environmental	Valuation and internationalization (accounting in the economic reporting of enterprises) of external influences on the environment
Social and environmental	Internal and intergenerational equality, including respect for the rights of future generations, and the participation of the population in decision-making

Source: Author' materials

Of course, economic growth cannot be an end in itself. It should ensure an improved quality of life and full employment, reduce poverty, improve income distribution and natural resource management, and preserve the environment. Naturally, the environment is one of the main sources of resources required for economic growth. Its current and future state is a criterion for the process of sustainable development, which leads to a new type of civilization – a civilization of balanced nature management, where anthropogenic impact on nature will be aligned with the ability of natural systems to cope with this pressure (Dovgal and Dovgal 2017, 15-20).

In the context of globalization, the environmental component is a priority. According to the 2030 Agenda for Sustainable Development, of the 17 targets that UN member states have pledged to achieve by 2030 seven are environmental (United Nations 2015b):

- ensuring the availability and rational use of water resources and sanitation for all;
- ensuring the availability to inexpensive, reliable, sustainable and modern energy sources for all;
- promoting sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all;
- ensuring the transition to rational consumption and production models;
- taking urgent action to combat climate change and its consequences;
- conservation and rational use of oceans, seas and marine resources for sustainable development;
- protection and restoration of land ecosystems and promotion of their rational use, sustainable forest management, combating desertification, halting and reversing land degradation and halting biodiversity loss, etc.

The importance of the environmental component is also confirmed by the estimates of the World Economic Forum experts, which are submitted annually to The Global Risks Report. Three of the five most likely risks of 2018 were related to the environment: extreme weather, natural disasters, and climate change. At the same time, emphasis was placed on the need to consider not only individual risks, but also their close relationship with the risks of other categories – economic, geopolitical, technological, and social (World Economic Forum 2018).

Achieving global sustainability is not possible due to environmental pollution under the influence of production factors, depletion of natural resource potential because of its inefficient use, increasing morbidity of the population living in environmentally adverse areas, as well as decreasing productivity as a result of increasing costs of waste storage and disposal and environmental clean-up activities (Huber 1991, 12-41).

Economically developed countries tend to turn to a policy of sustainable development, which combines a careful attitude to the natural environment, natural resources and social guarantees for citizens. At the same time, less developed countries pay less attention to the above-mentioned factors (Nurmanbekova *et al.* 2018, 2004-

2016; Pokras and Voitko 2018, 2754). The first stage of the transition to sustainable development, both at the local and global levels, is considered to be the concept of green growth, which allows to identify new potential sources of economic growth without affecting the quantity and quality of natural resources (OECD 2011). The concept is based on the principles of eco-efficiency and resource conservation. They are integrated in the process of strategic planning of the national economy development using such mechanisms as reforming the system of budgetary relations through the introduction of environmental taxes, introducing sustainable production and consumption models, developing green business, and building environmental infrastructure.

In addition, there are institutional instruments for regulating environmental and economic relations, which are divided into two main types: direct controls and economic incentives. Direct controls (administrative methods) used in state regulation include laws, regulations, statutes, orders, instructions and various methodological guidelines in the field of environmental protection and conservation (Singh *et al.* 2019, 87). The main types of administrative methods used by the state to ensure ecologically sustainable growth are environmental legislation, technical and operational standards, quality standards, environmental monitoring and audit, licensing and certification, restrictions and penalties. These instruments act as a tool for internalization of external effects (externalities) (Ibraeva 2012, 237-239).

Table 2. Main institutional mechanisms and tools for implementing the principles of environmental growth

Mechanisms and tools	The main purpose
International agreements	Ensure coordination and monitoring planning for compliance with sustainable development indicators
Coordinate application and monitoring, reporting and validation	Measures aimed at determining the environmental status for long-term and effective results and accountability to partners and the local population
Introduction and development of environmental taxation (eco-taxes)	Transfers tax burden on traditional industries that are a threat to the environment
Implementation of sustainable production and consumption models: prioritizing environmentally friendly public procurement, introducing sustainable consumption trends when evaluating product life cycle stages; promoting sustainable use of resources and increasing the share of clean production through the reuse and disposal of waste	Measures that increase the interest of manufacturers in a cleaner, greener production process
Green business development: tax incentives, administrative barriers, various forms of public-private environmental partnerships	Implementation of mechanisms for the use of renewable natural resources, promotion of clean production, use of low-waste and resource-saving technologies
Private-public partnerships	Implementation of mechanisms to encourage capital inflows from businesses and households
Development and improvement of environmental legislation	Regulating actions for environmental protection, use and trade in natural resources, etc.
Development and introduction of environmental standards	By implementing environmental standards, companies are required to comply with the most environmentally friendly measures and technologies
Formation of sustainable industrial and social infrastructure	Minimizing the use of natural resources to ensure that future generations do not lack this resource

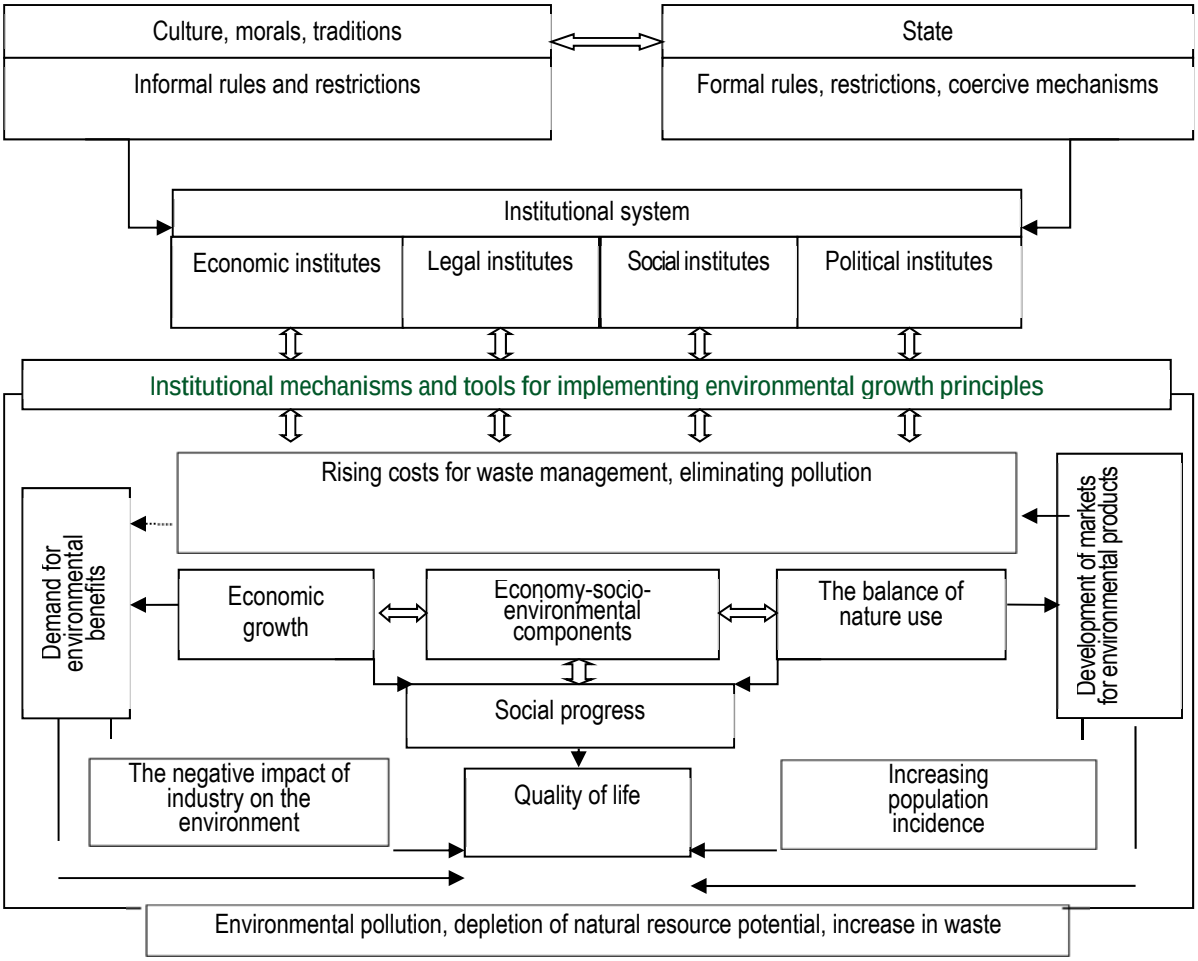
Source: Author' materials

Along with these direct controls in the field of environmental protection, many countries see a growing role of disclosure in environmental protection and empowerment of citizens. Thus, the strategy for public disclosure in British Columbia has had a greater impact on reducing emissions and compliance with requirements than sanctions traditionally imposed by Environment Canada. Stricter standards and higher fines also have a significant impact, indicating that the simultaneous use of administrative regulation and information can reduce harmful emissions. Evaluation and public awareness programmes on the actions of companies in the environmental field, which have become the basis of practical mechanisms for reducing air and water pollution in China, have helped to increase the competitiveness of firms in the market and improve their relationships with communities and other stakeholders (United Nations 2011). The right of access to environmental information is gaining more and more recognition of the international community, which in turn speaks for a broader interpretation of constitutional rights to information at the national level. According to experts, in order to achieve long-term, effective environmental performance, four

institutional toolkits need to be implemented: 1) low emission and climate-friendly tools; 2) private-public partnerships; 3) climate change agreement accounting mechanisms; 4) systems for coordinating application and monitoring, reporting and validation (Ibraeva 2012, 237-239). The Eurobarometer survey on European citizens' attitudes towards the environment shows that among the most effective ways of solving environmental problems, 30% of respondents named better enforcement of existing legislation (European Commission 2019).

The EU uses a number of instruments aimed at improving both the legislation and its application by the European institutions and member states (Škrinjarić 2020, 72-108). Thus, the main tools for improving EU legislation and its application in the field of environmental protection are monitoring and reporting, non-compliance procedures, litigation, special legislation to improve law enforcement, revision of environmental legislation implementation, and verification of compliance (Resource-analytical center Society and the Environment. 2017).

Figure 3. Institutional format of interaction of economic, social and environmental components of the global economic system



Source: Author' materials

Based on the analysis of scientific sources, as well as practices of the developed countries of the globe, we have identified the main institutional leverage for increasing the appeal of the implementation of environmental measures shown in Table 2.

It can be concluded that sustainable development goals can be achieved within the framework of formation and establishment of a modern institutional environment, which includes a wide range of formal and informal institutions that provide solutions to environmental, economic and social problems. Thus, on the basis of analysis performed we propose an institutional format of the interaction of economic, social and environmental components of the global economic system that regulates the impact of institutional mechanisms and instruments of implementing the principles of ecological growth on the global economic system, for ensuring sustainable ecological development of the global system (Figure 3).

That means, by combining the main institutional elements of the institutional environment and the main institutional leverage to influence the eco-economic system, this institutional format can become a basis for policy

development towards efficient sustainable environmental management in the process of ensuring sustainable ecological development of the global economic system.

Conclusions

The study of the evolution of environmental concepts in the context of global environmental challenges confirms the fact that humanity recognizes the environmental factor and the awareness of the catastrophic nature of the formed technogenic type of development. At the same time, in all the set of existing concepts, there is an attempt to integrate into the economic system certain criteria of development of ecological component. The combination of global economic growth and optimal environmental management is a very important but difficult task that humanity now faces. At present, the current ecological and economic situation directly indicates the need to move to a sustainable environmentally balanced type of economic development.

Based on the results of the study, the following conclusions can be drawn to ensure sustainable environmental development of the global economic system in institutional terms. Socio-ecological-economic relations and the institutional environment are shaped and changed in complex interaction. On the one hand, institutions reflect and reinforce the rules of the system, realizing the interests of different business entities, reflecting their role in the overall system of relations, both at the territorial and global levels. On the other hand, the socio-ecological-economic relations develop under the influence of the institutional environment, stabilizing the established order, fixed in its elements (norms, traditions, rules of behavior, organizations).

The international institutional framework for sustainable development contains the following aspects: decisions, norms, standards and commitments adopted internationally, as well as instruments of cooperation in the form of programs, strategies and action plans implemented within international institutions in accordance with the international legal framework. to fulfill decisions and commitments.

The main institutional levers of influence to increase the attractiveness of implementing environmental measures are international agreements, coordination of application and monitoring, reporting and confirmation, introduction and development of environmental taxation, the implementation of sustainable production and consumption models, the development of "green" business, private-public partnerships environmental legislation, development and introduction of environmental standards, formation of sustainable industrial and social infrastructure.

The proposed institutional format for the interaction of the economic, social and environmental components of the global economic system, which regulates the impact of institutional mechanisms and instruments of implementing the principles of ecological growth on the global economic system, will serve as the organizational and economic foundations for ensuring the sustainable ecological development of the global economic system.

Thus, the sustainable development of the global economic system will be ensured through the introduction of effective mechanisms for the interaction of economic, social and environmental components, which, working together, contribute to the achievement of its complex goals and objectives. In other words, the area of international cooperation on sustainable ecological development is related to waste management, air and water pollution, ecosystem management, conservation of biological diversity, conservation and restoration of natural resources, wildlife and endangered species, and also social (quality of life, health, narrowing the gap in welfare levels, eradicating poverty, etc.) and economic issues (resource management). These areas are the basis for the adoption of international agreements of bilateral, multilateral, or global nature.

The present analysis has shown the importance of further research concerning the institutional aspect of ensuring sustainable ecological development of the global economic system. Growing global environmental problems are affecting opportunities for further economic growth both in individual countries and within the globalized economy. Therefore, studying the possibilities of forming a modern institutional environment, including a wide range of formal and informal institutions that provide solutions to environmental, economic and social problems remains relevant. The proposed institutional format for the interaction of the economic, social and environmental components of the global economic system, that includes establishing interrelations between the main institutional elements (factors influencing the formation of the institutional environment and the main institutional leverage to influence the eco-economic system), will serve as a basis for policy development towards efficient sustainable environmental management, formation and development of environmentally sensitive administration and management both in individual countries and the world at large.

Acknowledgements

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

References

[1] Atkinson, G., Dietz, S., and Neumayer, E. 2009. *Handbook of Sustainable Development*, Edward Elgar Publishing.

[2] Banerjee, O., Cicowiez, M., Horridge, M., and Vargas, R. 2016. A conceptual framework for integrated economic-environmental modeling. *Journal of Environment and Development*, 25: 276–305. DOI:https://doi.org/10.1177/1070496516658753

[3] Barishpolets, V. A. 2011. Analysis of global environmental problems. *Radioelectronics. Nanosystems. Information Technologies. Ecology: Concepts and Solutions*, 3 (1): 79-95. Available at: http://rensit.ru/vypuski/article/44/

[4] Batova, N. 2018. International Assessment of the Environmental Component of Sustainable Development. *Journal of Belarusian State University, Ecology,* 1: 4-14. Available at: https://journals.bsu.by/index.php/ecology/article/view/769

[5] Blanc, I., Friot, D., Margni, M. and Jolliet, O. 2008. Towards a new index for environmental sustainability based on a DALY weighting approach. *Sustainable Development*, 16 (4): 251–260. DOI:https://doi.org/10.1002/sd.376

[6] Colby, M. E. 1989. *The Evolution of Paradigms of Environmental Management in Development.* Available at http://documents.banquemondiale.org/curated/fr/552371468913746182/pdf/multi-page.pdf

[7] Dovgal, O., and Panova, I. 2018. Evolution of Environmental Management Concepts in Terms of Global Environmental Challenges. *Journal of V.N. Karazin Kharkiv National University, Series: International Relations. Economics, Country Studies. Tourism,* 9: 109-114. DOI:http://doi.org/10.26565/2310B9513B2019B9B13

[8] Dovgal, O., and Dovgal, G. 2017. Global innovations space: changed minds, specifics and form tools. *Problems of Economy*, 1: 15-20. Available at: https://www.problecon.com/export_pdf/problems-of-economy-2017-1_0-pages-15_20.pdf

[9] Dovgal, O., and Panova, I. 2019. International trade liberalization in the context of the global trend towards ecologization. *The Potential of Modern Science,* 2: 45-56. London, Sciemcee Publishing.

[10] Gallagher, P., and Serre, Y. 2011. Implementing Regional Trade Agreements with Environmental Provisions. OECD Trade and Environment Working Papers, 06. Available at: https://www.oecd-ilibrary.org/trade/implementing-regional-trade-agreements-with-environmental-provisions_5kg3n2crpxwk-en DOI: https://doi.org/10.1787/5kg3n2crpxwk-en

[11] Garsous, G. 2019. Trends in policy indicators on trade and environment. OECD Trade and Environment Working Papers, 1. DOI: http://doi.org/10.1787/b8d2bcac-en

[12] Grundel, L. *et al.* 2020. State Regulation of Environmental Taxes and Fees: National and International Experience. *Journal of Environmental Management and Tourism*, 1(41): 159-166. DOI:https://doi.org/10.14505//jemt.11.1(41).18

[13] Huber, J. 1991. *Ecological modernization. Away from scarcity, soberness and bureaucracy*. Technologie en Milieubeheer. A. Mol, G. Spaargaren & A. Kalpxijk (Eds.). Den Haag (Netherlands) SDU.

[14] Ibraeva, R. 2012. Institutional aspects of sustainable environmental and economic development economic actors. *Transport business in Russia*, 6-2: 237-239. Available at: https://cyberleninka.ru/article/n/institutsionalnye-aspekty-ustoychivogo-ekologo-ekonomicheskogo-razvitiya-ekonomicheskih-subektov

[15] Malthus, T. 1798. *An Essay on the Principle of Population*. London: J. Johnson, in St. Paul's Church-yard.

[16] Matyushenko, I., Goncharenko N. and Michaylova D. 2015. Future Consideration for Developing Energy Efficient Economy in Ukraine using Light Emitting Diode (LED) Enginery on the basis of NBIC-Technologies. *Global journal of management and business research: Economics and Commerce,* Vol. 15, Issue 5 (Ver.1.0): 7-16. Available at: https://globaljournals.org/GJMBR_Volume15/2-Future-Considerations.pdf

[17] McCormick, J. 2001. Environmental Policy in the European Union, The European Series, Palgrave MacMillan.

[18] Meadows, D., Randers, J., Meadows, D. and Behrens, W. 1972. *The Limits to Growth: A Report for the Club of Rome's Project on the Predicament of Mankind*. Universe Books.

[19] Meadows, D., Randers, J., and Meadows, D. 2007. *Limits to Growth. The 30-year update*. Chelsea Green Publishing. White River Junction, Vermont.

[20] Mukhtarova, K., Chukubayev, Y., Spanov, M., and Kusmoldayeva, Z. 2018. Econometric assessment of sustainable development and status of health among the population. *Journal of Applied Economic Sciences,* Volume XIII, 6(60): 1802-1812.

[21] Nurmanbekova, G.K., *et al.* 2018. Factors of sustainable development of the agricultural sector in Kazakhstan. *Journal of Applied Economic Sciences,* Volume XII, 7(61): 2004 – 2016.

[22] Pokras, O., and Voitko, S. 2018. The Cluster Approach Application for Economic Ecosystems in the Aspect of the Precision Instrumentation. *Journal of Advanced Research in Law and Economics*, 8(38): 2754-2761. DOI: https://doi.org/10.14505//jarle.v9.8(38).26.

[23] Safonov, G. V. 2008. The challenge of global climate change and the G8. *Bulletin of international organizations*, 5 (20): 36-40.

[24] Shcherbak, V. *et al*. 2020. Use of key indicators to monitor sustainable development of rural areas. *Global J. Environ. Sci. Manage.*, 6(2): 175-190. DOI: http://dx.doi.org/10.22034/gjesm.2020.02.04

[25] Singh, A. K, Issac, J. and Narayanan, K.G.S. 2019. Measurement of environmental sustainability index and its association with socio-economic indicators in selected Asian economies: an empirical investigation. *International Journal of Environment and Sustainable Development,* 18(1): 57-100. DOI:http://doi.org/10.1504/IJESD.2019.098641

[26] Škrinjarić, T. 2020. Re-examining sustainable development in Europe: a data envelopment approach. *International Journal of Environment and Sustainable Development,* 19(1): 72-108. DOI:http://doi.org/10.1504/IJESD.2020.105469

[27] Weizsäcker, E., Hargroves, K. and Smith, M. 2010. *Faktor Fünf. Die Formel für nachhaltiges Wachstum*. München: Droemer.

[28] Weizsäcker, E., Lovins, A. and Lovins, L. 1995. *Faktor Vier. Doppelter Wohlstand – halbierter Naturverbrauch*. Der neue Bericht an den Club of Rome. München: Droemer Knaur.

[29] Westra, L., and Lemons, J. 1995. *Perspectives on Ecological Integrity*. Springer Science, Business Media Dordrecht.

[30] Zerkalov, D. 2013. *Problems of sustainable development ecology*. Kiev, Osnova.

[31] World Economic Forum. 2018. *The Global Risks Report 2018*, 13th Edition. Geneva: World Economic Forum Publishing, 2018. Available at: http://reports.weforum.org/global-risks-2018

[32] WTO. 2001. *Doha WTO Ministerial 2001: Ministerial Declaration*. Available at: https://www.wto.org/english/thewto_e/minist_e/min01_e/min01_e.htm

[33] WTO. 2020. *Understanding the WTO*. Available at: https://www.wto.org/english/thewto_e/whatis_e/tif_e/tif_e.htm

[34] European Commission. 2019. *Eurobarobemer. Attitudes of European citizens towards the environment*. Available at: http://ec.europa.eu/commfrontoffice/publicopinion/index.cfm/Survey/index_yearFrom=1974yearTo=2019

[35] International Organization for Standardization. 2020. *ISO 50001 Energy management*. Available at: https://www.iso.org/iso-50001-energy-management.html

[36] OECD. 2011. *Towards Green Growth, A Summary for policy makers, May 2011.* Available at: http://www.oecd.org/greengrowth/48012345.pdf

[37] Resource-analytical center Society and the Environment. 2017. *Implementation of environmental commitments in the context of deregulation in the European Union: experience of best practices for Ukraine.* Analytical document. Available at: http://www.rac.org.ua/uploads/content/374/files/webenvironmentalimplementation2018ua.pdf

[38] Sustainable Development Goals. 2015. *Transformation of our world: The agenda in the field of sustainable development until 2030.* The Resolution adopted by the United Nations General Assembly 9.25.2015. Available at: https://sustainabledevelopment.un.org/post2015/transformingourworld

[39] United Nations. 2019c. *Environment Programme (UN Environment*). Available at: https://www.unenvironment.org/about-un-environment

[40] United Nations. 1997. *Kyoto Protocol to the United Nations Framework Convention on Climate Change*. Kyoto, 11 December 1997. Available at: https://unfccc.int/resource/docs/convkp/kpeng.pdf

[41] United Nations. 2011. *Human Development Report 2011. Sustainability and Equity: A Better Future for All*. Available at: http://hdr.undp.org/sites/default/files/reports/271/hdr_2011_en_complete.pdf

[42] United Nations. 2015a. *United Nations Summit on Sustainable Development 2015*. Available at: https://sustainabledevelopment.un.org/content/documents/8521Informal%20Summary%20-%20UN%20Summit%20on%20Sustainable%20Development%202015.pdf

[43] United Nations. 2015b. *Transforming our world: the 2030 Agenda for Sustainable Development.* Available at: https://sustainabledevelopment.un.org/content/documents/21252030%20Agenda%20for%20Sustainable%20Development%20web.pdf

[44] United Nations. 2019a. *Division for Sustainable Development Goals*. Available at: https://sustainabledevelopment.un.org/

[45] United Nations. 2019b. *Promote Sustainable Development*. Available at: https://www.un.org/en/sections/what-we-do/promote-sustainable-development/index.html

[46] United Nations. 2019d. *Development Programme*. Available at: https://www.undp.org/

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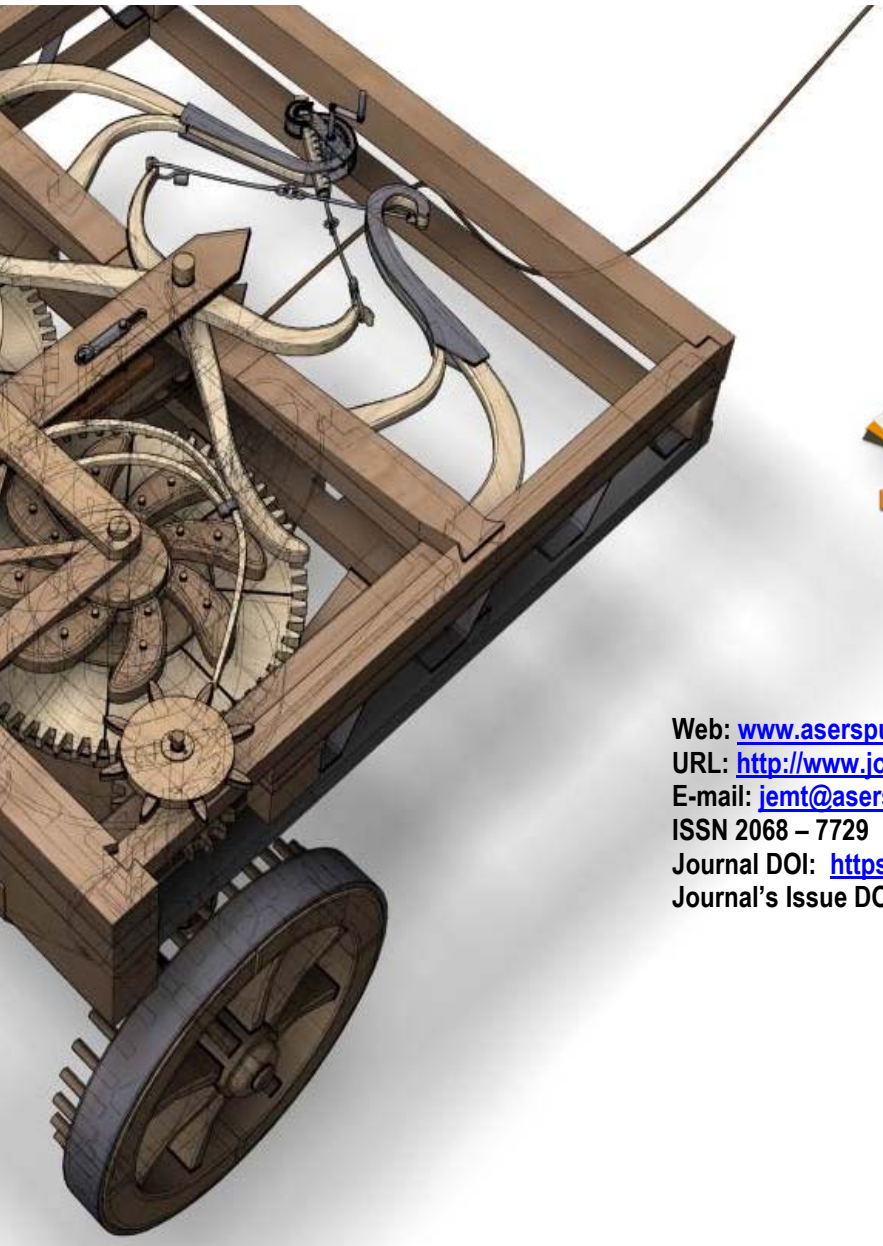

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ISSN 2068 – 7729
Journal DOI: https://doi.org/10.14505/jemt
Journal's Issue DOI: https://doi.org/10.14505/jemt.v11.3(43).00