Role And Significance Of Genetic Animal Resources In Achieving The Goals Of Sustainable Development Of Libya

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Abstract- Existence, preservation and sustainable use of genetic resources is crucial for the biodiversity of a given country. Genetic resources represent a key component of biological diversity. The very term genetic resources refers to any biological material that contains genes or metabolic material that can be derived from genes. The term genetic resources can be defined as the total diversity of DNA structure in species that are used directly or indirectly by humans. The term genetic resources refers to any biological material that contains genes and/or metabolic material that can be derived from genes. They fall within the scope of the Nagoya Protocol whenever they are used for research or product development.

Index Terms- sustainable.resources.genetic.biological

I. INTRODUCTION

In 2007, the international community adopted the Global Action Plan for Animal Genetic Resources, which consists of twenty-three strategic priorities aimed at combating the reduction of animal genetic diversity and the sustainable use of animal genetic resources. The implementation of the Global Action Plan is expected to contribute to the achievement of Millennium Development Goals 1 (eradication of extreme poverty and hunger) and 7 (ensuring environmental sustainability).

The concept of sustainable use of genetic animal resources has an economic, ecological and socio-cultural dimension. Sustainable use of animal genetic resources also contributes to food security, rural development, increased employment opportunities and improved living standards of breeders. Supporting breed breeding through better infrastructure, services, animal health care, marketing opportunities and other interventions would make a significant contribution to the sustainable use of animal genetic resources.

Sustainable use of animal genetic resources implies the use and improvement of breeds that have a high level of adaptability to the prevailing environment. It also includes the application of healthy genetic principles for the sustainable development of breeds and the sustainable intensification of the production systems themselves. Sustainable use and genetic improvement rely on access to a wide range of genetic resources.

SUBJECT OF RESEARCH

The subject of this dissertation is research related to the role and importance of genetic animal resources in achieving the goals of sustainable development of Libya. Within the framework of this doctoral dissertation, a special focus will be directed at considering the role and importance of genetic animal resources in achieving the goals of sustainable development of Libya, i.e. researching the possibilities for the development and application of a modern model of agricultural production, with the possibility of as much preservation of animal genetic resources as possible within the framework of sustainable development of Libya.

OBJECTIVES OF THE RESEARCH

The main goal of the subject research is to review the role and importance of genetic animal resources in achieving the goals of sustainable development of Libya, that is, to comprehensively review the key aspects of genetic animal resources in the context of achieving the goals of sustainable development of Libya.

Scientific objective

The scientific goal of the research is reflected in the confirmation and expansion of previous scientific knowledge about the role and importance of genetic animal resources in achieving the goals of sustainable development of Libya. This was achieved through: - defining concepts, phenomena and processes related to the role and importance of genetic animal resources in achieving the goals of sustainable development of Libya. - after describing, the classification of terms, phenomena and processes related to the role and importance of genetic animal resources in achieving the goals of sustainable development of Libya was carried out. - the results of this research can serve as a basis for further scientific study of aspects of the research subject in different countries.

Social goal

The social goal of the research is reflected in a realistic assessment of the role and importance of genetic animal resources in achieving the goals of sustainable development in Libya.

RESEARCH HYPOTHESES

The work is based on general and special hypotheses derived from the subject of research. General hypothesis:

H0: If genetic animal resources are managed in an adequate and comprehensive way, a contribution is made to achieving the goals of sustainable development, i.e. a contribution is made to the creation of conditions for the development of a society that meets human needs with available resources, without endangering natural systems and the environment.

Special hypotheses:

Special hypotheses are:

H1: Increasing investment in rural infrastructure, agricultural research and advisory services, technology development and gene banks, with the aim of improving agricultural production capacities in rural areas of developing countries, contributes to reducing hunger, achieving food security and improving nutrition and promoting sustainable agriculture.

H2: If the conditions for exploiting the biodiversity of animal resources are provided, production is improved and food security is ensured, that is, agricultural producers have the opportunity to improve their breeds and adapt the livestock population to the changing environment and changing market demands.

The deductive method made it possible to derive individual judgments, conclusions The following research methods were used during the preparation of the dissertation:

- Dialectical method that observes genetic animal resources and their role and importance in achieving the goals of sustainable development of Libya.
- The inductive method made it possible, based on the analysis of individual facts and knowledge, to generalize and form new facts related to the role and importance of genetic animal resources in achieving the goals of sustainable development of Libya or assertions based on general judgments, that is, general logical features between the researched concepts. It also serves to discover new knowledge, prove new facts, or new laws. As part of the deductive method, its elements were also used, which are the procedures of analysis, synthesis, abstraction, generalization and specialization;
- The method of content analysis, which includes the analysis of available data, books, scientific works, operational documents and other publications, related to genetic animal resources and their role and importance in achieving the goals of sustainable development of Libya
- The comparative method looked at the role and importance of genetic animal resources in achieving the goals of sustainable development of Libya, through a comparison with the state of development of genetic animal resources and their contribution to achieving the goals of sustainable development in countries in the North African region.
- The research method was used to collect data related to the role and importance of genetic animal resources in achieving the goals of sustainable development in Libya. The research was conducted through a survey. The aim of this method of examination is twofold. Firstly, to obtain scientifically and socially reliable knowledge and secondly, to make this knowledge useful for further scientific research. The questions were structured so that, in the most reliable way, the goals of the research were achieved, the hypotheses were proved, and the scientific and social justification of the research was justified and proved. The investigation contributed to obtaining scientifically reliable knowledge that has scientific and social significance.

The research was conducted on a suitable sample of respondents, who are employed in organizations related to sustainable development in Libya. In determining the number and type of characteristics of the sample, we started from sociological knowledge that the professional status of certain employees in organizations affects their attitudes regarding the role and importance of genetic animal resources in achieving the goals of sustainable development of Libya.

Research results have scientific and social significance.

1. The scientific contribution is reflected in the confirmation and expansion of previous scientific knowledge about the role and importance of genetic animal resources in achieving the goals of sustainable development of Libya. This was achieved through:

- defining terms, phenomena and processes related to the role and importance of genetic animal resources in achieving the goals of sustainable development of Libya.
- after describing, the classification of terms, phenomena and processes related to the role and importance of genetic animal resources in achieving the goals of sustainable development of Libya was carried out.
- the results of this research can serve as a basis for further scientific study of aspects of the research subject in different countries.

2. The social contribution is reflected in the realistic perception of the role and importance of genetic animal resources in achieving the goals of sustainable development of Libya.

The term resources refers to various means or assistance used to achieve a certain goal or to satisfy certain needs. Also, resources can be viewed as a set of elements that are available for the realization of certain needs or for the performance of certain activities, such as natural, human, animal, forestry and others. The term resource comes from the Latin language. Resources represent space, material and energy that benefit human society, natural resources and natural resources. Nature provides goods, while in human nature is the desire to establish control over natural goods and the need to adapt them to one's own requirements. Both man and nature strive to make goods or resources available. In situations where there is no responsibility regarding the rational use and distribution of resources and wealth arising from them, conflicts and the destruction of what they benefited from occur.

Resources that are in the regime of joint ownership are characterized by the fact that they are managed by a clearly and precisely defined group of users. An example of this type of resource is irrigation systems or grazing land for livestock.

Based on their availability, resources are classified into ubiquitous resources, which are found everywhere in the environment, regardless of location, and localized resources, which are available only in certain places. From the perspective of their renewal potential, resources are classified into non-renewable resources, renewable resources and potentially renewable resources.

Non-renewable resources are resources that are characterized by the existence of fixed stocks, i.e. unchanging size of total "reserves" within a period measured by human age (they are regenerated only at the level of geological age - measured in millions of years, not at the human time level). Examples of non-renewable resources are metal or non-metal ores, oil fields, natural gas fields, coal deposits and other fossil fuel energy resources. A fundamental question that arises with non-renewable resources is the optimal rates of extraction over time: should the resource be used immediately, gradually, or not at all? Non-renewable resources are divided into recyclable and non-recyclable.

Renewable resources are resources characterized by the fact that, after exploitation, they can return to their previous stock level through natural processes of growth or replenishment, that is, they are naturally renewed in a time interval that is relevant for exploitation. Although it is possible to deplete a renewable resource, this will not happen if the rate of natural regeneration or growth of the resource exceeds the rate of exploitation or exploitation. Examples of renewable resources are grasslands, forests, rivers, air, fish stocks and wildlife populations.

For the use of renewable resources to be sustainable, the rate of their consumption should be maintained within the capacity of natural systems to regenerate (or renew) over a period relevant to the human population. Potentially renewable resources are resources that are characterized by the fact that they are not completely non-renewable, but their renewal period is very long, "that is, they need a renewal time that is measured in generations." In the case of potentially renewable resources, natural processes provide continuous, but limited and often uncertain renewal at a given moment and for a certain period of time. Examples of potentially renewable resources are the quality and fertility of the soil, the level of groundwater, the amount of precipitation, or the assimilative capacity of the environment.

Natural resources represent the common good and common wealth. The use, economic application and economic valuation of natural resources must be planned and purposefully controlled. Regardless of the type, structure and individual quantity, natural resources represent the basis for the future economic and economic development of a certain country.

There is also a part of natural resources that must remain outside the economic and economic flows and that must be consumed in a controlled manner and preserved for the future. This is especially true for hard-to-renew and non-renewable natural resources. It is necessary that access to natural resources includes the definition of a policy and strategy for their sustainable use, including the regulation of the regulatory framework for their adequate implementation. Natural resources are usually considered to be everything that originates from the Earth, i.e. soil, plant and animal life, water, oil, metals, water and others.

Currently, the problem of depletion of natural resources is becoming more and more pronounced. Depletion of the potential of natural resources is expressed in the reduction of natural resources to a level that does not meet the needs of humanity, its technical capabilities and standards of safety of natural systems. Exhaustion of natural resources makes their further development economically and ecologically impractical. With wasteful use, some types of renewable resources may disappear, losing their ability to self-renew. For example, a horizon of arable soil with a thickness of about 18 cm, under favorable conditions, is renewed in 7,000 years.

Intensification of industrial interference in natural processes, consumerist, utilitarian, greedy attitude towards nature, its resources and wealth destroys the symbiosis of human society and nature. Production growth cannot be achieved due to the depletion of natural resources and environmental pollution, because not only the development of production, but also the existence of life on Earth depends on their condition.

The results of the research within the framework of the conducted comparative analysis showed that in Egypt the policy of protection and preservation of livestock biodiversity is a priority within the sustainable development program. Local livestock breeds are of crucial importance for sustaining life in rural areas, especially in marginal areas of the country that have relatively low requirements in terms of management, health care and nutrition. Breeding of indigenous breeds of cattle, apart from having a social and economic impact, is also a part of Egyptian tradition and culture in rural areas of Egypt. Management of genetic animal resources in the local community implies active participation and support from the owners and users of animals.

Taking into account the performance of the countries included in the research in the part related to the state of development of genetic animal resources and the achieved performance related to the achievement of the goals of sustainable development, the comparative analysis showed that adequate and comprehensive management of genetic animal resources contributes to the achievement of the goals of sustainable development. that is, it contributes to the creation of conditions for the development of a society that meets human needs with available resources, without endangering natural systems and the environment Based on the above, it can be concluded that ***the general hypothesis within this research is confirmed and correct.***

As part of the research, it was determined that in terms of the achievement of Sustainable Development Goal 9 - Build resilient infrastructure, promote inclusive and sustainable industrialization and encourage innovation in 2021 in Libya, the result has stagnated or grown by less than 50% of the required rate, with the main challenges they remain. In Egypt, too, the result stagnated or grew by less than 50% of the required rate with significant challenges remaining, while in Tunisia and Morocco the result improved moderately but not enough to reach the target with significant challenges remaining.

The above shows that in 2021, Libya achieved the worst performance in terms of achieving the goal of sustainable development, which refers to the construction of resilient infrastructure, the promotion of inclusive and sustainable industrialization and the encouragement of innovation.

Taking into account the performance of the countries included in the research in the part related to investments in rural infrastructure, agricultural research and advisory services, development of technology and gene banks, and the achieved performance related to the achievement of the goals of sustainable development, the comparative analysis showed that the increase

investments in rural infrastructure, agricultural research and advisory services, technology development and gene banks, with the aim of improving agricultural production capacities in rural areas of developing countries, contributing to reducing hunger, achieving food security and improving nutrition and promoting sustainable agriculture. Based on the above, it can be concluded that ***the first auxiliary hypothesis within this research is confirmed and correct.***

The risk of potential loss of natural habitats and biodiversity, which are part of the common heritage of all people on the planet and which ensure global food and water security and mitigation of the consequences of climate change, must be controlled and under constant supervision by undertaking appropriate protection measures and preventive actions in order to preserve biodiversity in to all parts of the world. In the broadest sense, it can be said that without the life activities of numerous diverse organisms, the global biogeochemical cycles in nature could not take place, that is, the cycle of water, oxygen, carbon dioxide, nitrogen, sulfur, phosphorus and others. Without the existence of total biodiversity, it is difficult to imagine the balanced functioning of the biosphere. Economic profit from preserved biodiversity is recognizable nowadays in all social activities, especially in urban civilization activities.

The research showed that the performance of the countries included in the comparative analysis - Egypt, Tunisia and Morocco compared to Libya, achieved better performance related to the achievement of sustainable development goals in the part related to the protection, restoration and promotion of the sustainable use of terrestrial ecosystems, sustainably forest management, combating desertification and halting and reversing land degradation and halting biodiversity loss. Namely, in Libya in 2021, the result improved moderately, but not enough to achieve the goal, with significant challenges remaining. The above shows that in 2021, Libya achieved the worst performance in terms of achieving the goal of sustainable development, which refers to the protection, restoration and promotion of the sustainable use of terrestrial ecosystems, sustainable forest management, the fight against desertification, and halting and reversing land degradation and halting the loss of biodiversity.

Taking into account the performance of the countries included in the research in the part related to the conditions for the use of the biodiversity of animal resources and the achieved performance related to the achievement of the goals of sustainable development, the comparative analysis showed that providing the conditions for the use of the biodiversity of animal resources contributes to the improvement of production and ensures food security, that is, agricultural producers have the ability to improve their breeds and adapt the livestock population to the changing environment and changing market demands. Based on the above, it can be concluded that ***the second auxiliary hypothesis within this research is confirmed and correct.***

Bearing in mind the results of the conducted research for the further development of genetic animal resources in Libya, i.e. the improvement of the management system of genetic animal resources in order to ensure their contribution in achieving the goals of sustainable development and creating conditions for the development of a society that meets its needs with available resources, without endangering natural systems and life environment, it is necessary to provide greater state incentives through rural development financing programs, especially in areas with unfavorable climatic conditions and areas of protected nature where the development of ecologically sustainable agricultural systems is imperative, bearing in mind the broader social interest related to the preservation of natural resources that used by agricultural production. In this way, it would contribute to the preservation and protection of genetic resources and biodiversity as a whole, as well as the preservation of authentic local products and traditional technologies used in processing.

Genetic animal resources for agriculture and food represent the most important segment of the biological base for providing food for human needs in the world. Animal genetic resources contribute to income for a significant part of the world's population. Of particular importance for the survival and well-being of people in the world is the existence of a diverse genetic resource base. Also, genetic animal resources contribute to the efforts made to eradicate hunger in the world. Animal genetic resources are also important in the context of adapting to environmental, social and societal changes in the world, including climate change. Genetic animal resources represent the raw material basis for livestock farmers. They are also of particular importance for sustainable agricultural production. Namely, bearing in mind that when genetic animal resources are managed in an adequate way, they contribute to the improvement of agricultural production, i.e. increasing its productivity and generating a sufficient amount of food that can respond to the growing demand for food by the population in the world, including in Libya.

The research showed that in 2021, Libya achieved the worst performance in terms of achieving the sustainable development goal related to the protection, restoration and promotion of the sustainable use of terrestrial ecosystems, sustainable forest management, combating desertification and halting and reversing land degradation and halting the loss of biodiversity, as well as that Libya, along with Egypt, achieved the worst performance in 2021 in terms of achieving the goal of sustainable development, which refers to the strengthening of means of implementation and revitalization of the Global Partnership for Sustainable Development.

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