



Contribución de la Ganadería para encaminar el Desarrollo Sustentable

Contribution of Livestock to route Sustainable Development

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The human being, biodiversity, and the environment are interdependent for the balance of all ecosystems. However, the intensification of the exploitation of renewable and non-renewable natural resources along with the industrial revolution that began in the 18th century has been predicted as a risk to human health and to the survival of the biodiversity of the earth. In these times of the COVID-19 pandemic, we have witnessed impressive acts of self-restoration of nature, sightings of rare species of fauna, and showing us that with the reduction of activity in industries it is possible to improve water and air quality.

Sustainable development refers to the achievement of the coverage of human needs, preserving the capacity for the following generations, and respecting the planet's systems. Normally, for the achievement of sustainable development, the ecological or environmental aspect is considered through adequate exploitation of resources of the multiple ecosystems, ensuring the damage in natural cycles to a minimum. The social aspect that must ensure a fair and responsible society in the use of natural resources, seeking the social welfare of the entire human population. The economic aspect determines the allocation and management of economic resources. However, the human being is fully exploiting the planet's resources by prioritizing only economic growth.

Agriculture is a human activity of great importance for the survival of the species, but the intensification of its processes together with inappropriate actions such as exploitation of virgin jungle and wildlife, soil erosion, water pollution, intensification of livestock operations, use of agrochemicals, among others, have contributed to the deterioration of natural resources and even the emergence of new pests and diseases. Historically, livestock farming, especially in intensive farms, has developed in a linear growth model, where the energy flows from some food-producing regions are no longer restored, generating the erosion of resources in those areas and contaminate them to the destination areas. Intensive livestock farming leads to an increase in the installation of monocultures in forests, excessive use of agrochemicals, and growth promoters to increase the productivity of agricultural inputs for feed, for example, the sowing of soybeans, oil palm, and corn that manage to deteriorate the existing diversity in certain areas. Livestock focused only on economic performance is considered one of those responsible for environmental deterioration, making it unsustainable over time.

To develop sustainable livestock farming, we must stop focusing only on profitability and look beyond the economic, such as mixed livestock and agricultural production systems, which could provide options for contributing to sustainable development. For example, the implementation of agrosilvopastoral systems provide diversification in food production, with adequate nutritional contributions for livestock and humans, carbon sequestration by trees, housing many vertebrate and invertebrate animal species that fulfill various functions in the life cycle of the ecosystem. Small-scale livestock production or family farming would be a promising way to improve productivity with higher economic income and reduce the rate of greenhouse gas emissions into the atmosphere, generating enough food for family consumption and may be more compatible with organic production. The incorporation of a circular economy in agricultural and livestock production is capable of minimizing the use of virgin resources, and recycling of raw materials, reducing organic waste, promoting sovereignty and reducing dependence on external resources.

Within the framework of sustainable development, livestock and agricultural systems should focus on multiple alternatives, not only through the use of alternative inputs but also comprehensively encompass agroecosystems to reduce dependence on external inputs. To do this, it is essential to understand the interactions of the systems and the synergies that occur between all the components that make them up, in order to promote organic production that respects biological cycles. Certain agricultural strategies such as migration to seasonal crops, crop diversification, or integration of trees, pastures, animals, and crops, can also contribute to sustainable development. The association of grasslands and leguminous crops can preserve the quality of the soils, allowing the reduction of the use of chemical fertilizers. The implementation of rainwater collection and storage practices to reduce water stress in times of drought can contribute to the balance of sustainable development aspects and harmonious coexistence between human beings and the planet's ecosystems.

There are already proposals to avoid the destruction of ecosystems and the search for ecological and sustainable livestock is one of them, for this, integrated systems of agriculture, livestock, and forestry must be promoted. The scientific community needs to integrate and work in multidisciplinary research, which allows a glimpse of a global panorama for the transition of the human being towards sustainable development. For this, it is essential to promote responsible consumption and production, a change in consumer habits so as not to compromise the basic needs of future generations. In this sense, extension, motivation, and education are the foundations for community work, where these challenges could be addressed in search of sustainable development.

The contribution of sustainable development will depend on our habits, actions, customs, roles, and policies, so we must have a broader, more inclusive, and responsible vision to develop methodologies that contribute to the conservation of the planet. Contemporary livestock does not contribute to sustainable development, but

the population is increasingly aware of the products of animal origin that it consumes, therefore it is necessary to incorporate strategies in our production systems, which are in accordance with the care of the environment, generating income and that are socially accepted.

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