POSSIBILITIES OF INTEGRATION OF THE CIRCULAR ECONOMY IN THE WALNUT INDUSTRY OF THE REPUBLIC OF MOLDOVA

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Introduction and Background

The circular economy is a restorative and closed economy. Its distinctive feature is the minimization of the consumption of primary raw materials and the volume of recyclable resources, which is accompanied by a reduction in waste sent to landfills, while reducing the area of landfills and unorganized landfills. The world's population is growing every year, and the need for resources is not slowing down. If we leave everything as it is, then some of the Earth's resources will be completely exhausted in 20-100 years, according to various estimates. The solution may be a circular economy, which is based on the principle of **„take – make – reuse"**.

A circular economy involves preserving products, components and materials with maximum benefit and value. Unlike linear economics, it is about optimizing the system, not the components. This includes careful management of material flows in biological and engineering cycles. The concept of cyclical economy implies the organization of an economic system and the management of resources and value in such a way that the economic well-being and prosperity of citizens depend less and less on the consumption of depleted resources. In addition, it is assumed that economic activity does not exhaust natural systems, but, on the contrary, increases natural capital. A direction, proper to apply, in the current conditions of Moldova, and in the nuts industry where the volume of waste represents a share of over 70% of the production volume.

Methodology

Scientific research is based on such methods as: tabular and graphical methods, scientific abstraction, historical and logical method, classification and comparison, analysis and synthesis, induction and deduction, forecasting and modelling of economic phenomena, etc.

Results

In the context of the above, I will present a study on the culture of nucifers, the case of the Republic Of Moldova, and the categories of waste that rees from the practice of the respective activity, which would later serve as a basis for the analysis of the possibilities of implementing the circular economy in this area. Carrying out activities of planting, maintenance, development of Walnut crops is regulated by law no. 658 of 29.10.1999. Thus, for the purposes of this law, the notion of Walnut includes the following nut crops: common walnut, black walnut, almond, hazelnut, edible chestnut, and pecan. The analysis of the statistical data in the field reflects a relatively small trend of increasing the areas with walnut crops by about 15 percent in the last 5 years of activity, from 34 thousand ha in 2020 to 39 thousand in 2024, in the context of the reduction by 7 percent of the fruit plantations in the entire Republic of Moldova, this slowing pace of development of walnut crop areas is largely influenced by the current economic conjuncture in the Republic of Moldova , which increasingly stimulates the process of deforestation of plantations by agricultural households. For the analysis of the problem of waste, proper to Walnut crops, the Walnut culture was taken as a reference, which is argued by the decisive share, about 95% of the area of Walnut plantations in Moldova. Our own nut assortment for Moldova is a relatively large one, which includes a varied number of native and foreign souries, highlighted in the respective table, such as: - Cazacu, Calarasi, Lunguete, Lara, Chandler etc. Regardless of the category of walnut crops practiced basically the types of waste that can be obtained on such plantation can be reduced to: - green fruit peels, Woody / dried fruit peels, twigs and shoots, foliage, Woody Mass inside the fruit As a result of the studies conducted, we find that, in the environment at 1ha of walnut, the following results are obtained: - average W / ha = 3.22 t, the core, represents 53% of the dried fruit, equivalent to 1 t, the green peel, represents 42% of the green fruit, equivalent to 1.351 t, the Woody Peel represents 47% of the dried fruit, equivalent to 0.866 t. Besides these wastes, in walnut plantations can also be recorded branches and shoots that can reach a value between 200 kg and 1000 kg, this indicator has growth trends for Hazel orchards (from 500 kg – 1500 kg) where the process of growth of shoots is annual and much more intensive.

Conclusions

In the environment per 1 ha of walnut is recorded about 2.5 t – 3 t of waste, waste which through a rational and efficient organization of production relations in society, by applying the principles of circular

economy can bring a series of benefits both to the economic agents involved in the given activity, as well as to the social and natural environment.

Keywords: *innovation, entrepreneurship, reforms, circular economy, nut culture, recyclable waste*

References

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