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The essence of the criterion of resource saving and mechanism of its implementation in the sustainable development conditions

Scientific problem. The mechanism of resource saving cannot be analyzed without its connection to the overall objectives of increasing production efficiency. The effectiveness of social production reflects the completeness of social and personal needs satisfaction with rational use of inputs. Being objective economic category, the effectiveness is most common described as relationship between the goals and methods of its achieving, showing their proportions, the development of tools to achieve the goal, etc.

Due to the fact that the end result of production is satisfaction of consumer needs, the effectiveness of social production must be viewed not only as purely economic, but also as a socio-economic category. According to the concept of sustainable development adopted at the Conference in Rio de Janeiro in 1992 as part of the of "Agenda for the XXI Century," social and economic efficiency are organic unity and relationship by establishing direct social requirements (including constraints) to conduct business.

Analysis of recent researches and publications. Studies related to the issue of resource saving were conducted by of many Ukrainian and foreign scholars, such as V.G.Andriychuk [1], I.V.Andronova [2], M.I.Dolishniy [3], S.Doroguntsov [4], V.M.Geets [7], N.O.Kondratenko [8], I.V.Li [9], E.I.Loktik [10], M.I.Malik [11], V.V.Rossokha [12],

P.T.Sabluk [13], O.M.Shpychak [13], I.M.Sotnik [14], O.P.Starytska [15], A.V.Ulezko [18], O.S.Vihansky [19].

However, research has shown that there are lack of reasonable basics for agricultural enterprises resource saving strategy, including: imperfect methodological principles for resource saving selection criteria, diagnostic and control system of indicators that would reflect the implementation mechanism of resource saving production and economic activity of agricultural enterprises and allow to evaluate the effectiveness. Studying criteria and mechanism for resource saving and program evaluation measures to ensure it is relevant and up scientific and practical interest.

The objective of the article. This paper is dedicated to studying the essence of the concept of criterion of resource saving in agriculture in condition of sustainable development economy.

Statement of the main results of the study. By recent economic research the efficiency of the use of material resources is considered as relation of volume of the produced products to the volume of the material resources consumed at its production.

$$E_{es} = \frac{\text{final result of production}}{\text{expences of factors of production}} \cdot (1)$$

It is necessary to distinguish efficiency of the use of material resources and efficiency of public production. The increase of efficiency of the use of material resources is taken as bigger amount of produced products from the same amount of material resources [1, c. 124]. We will consider this

statement in more detail. This definition, to our opinion, not quite exactly characterizes the specific of efficiency in regard to the material resources use, not really correct about effect and expenses in question, and also does not reflect the specific of the requirements for resource saving strategy on the modern stage [1, c. 137]. And that's why. Firstly, not every producing of products we can attribute to effective, because absence in products, for example, of quality descriptions of sufficient level, accordance to the technical, social, ecological and other requirements, frequently do the produced products not only not effective but also harmful for society, as well as for a human being individually. Secondly, not every product produced can be considered balanced and fully consumed by society. Especially sharply it is seen in the conditions of sustainable development.

Thirdly, not every products can be put to the category of that recycling resources can be used. And by fourth, the final result of production cannot be associated with the volume of the produced products. The point here is that treating of the question of surplus value by classic economics K. Marx, the volume of output (W) can be written as [2, c. 178]:

$$W = c + V + m, \quad (2)$$

where c – the cost of production, V – the cost of labor, m – additional cost.

From this expression it follows that the dynamics of change in one direction or another the W value depends on all of its components. Thus, responses to changes in the price of labor, or price fluctuations in production or under other conditions such as market will not only reflect but also intentionally distort the situation in the use of material resources. It ensues from this expression, that dynamics of change in one or another side of size depends on all constituents. Consequently, return reactions on the changes of price on labour resources, or price-waves on products under influence of different conditions, for example market ones, will not only reflect but also intentionally distort of the use of material resources.

We already talked about the necessity of differentiation of efficiency of public production and efficiency of the use of material resources. This statement is base on foremost that reflecting single relations concerning the use of mate-

rial resources, they can have a different dynamics of the development, i.e., having homogeneous quality basis, these concepts can have different quantitative description. At the unchanging size of efficiency of the use of material resources efficiency of public production can have certain changes. That is why, in our view, it is necessary to distinguish the concept of efficiency of the use of material resources in the isolated, objectively existent economic category, reflecting the level of the use of material resources depending on the level of development of productive forces and productive relations.

Taken in the account above said concepts, it is possible to make an effort to theoretically express efficiency of the use of material resources as the division of sum of the used values on the produced products and the volume of material resources necessary for producing of products. This statement is true only at terms of conforming to the consumer requirements to products (quality, technical and other level), balanced on demand and supply.

We will consider some questions, related to the consumer preferences in produced products. Every commodity possesses the certain use value. Use values, as well as costs of commodities in general, on different markets are different. There is contingently distinction of level of necessities and development of economy. Thus, the stronger economy of country, the higher level of necessities of society and, in most cases, lower use value of commodity, shown in a certain equivalent.

Side by side with this, as we marked before, a cost of commodity in money term is cost. In the conditions of sustainable development essence of price acquires another side. So, its level cannot be determined coming from the classic understanding of cost of commodity, as amount of publicly-necessary labour necessary for the production of this commodity. At the market price adjustments are caused by such cleanly market factors, as demand and supply, competition, novelty of commodity, seasonal necessities and other market factors.

In other words, the level of price is determined by the level of requirements in this commodity and, consequently, by the level of the use values. In addition, a commodity in the process of demand has two isolated forms:

commodity with its use values and its money equivalent. This equivalent is expressed by a consumer price, i.e. by a price, that society is ready to pay to the producer, but not that a producer wants to get for the commodity.

This consumer price is the reflection of the use values celled in a commodity, and shows the size of the satisfied necessities this commodity, expressed by a money equivalent.

Thus, the size of the use values of commodity is determined in a value term by the cost of realization or consumer price. The level of the use values of different national economies is different, in this connection the standard of prices is different on the same commodities.

Obviously, that foregoing discussion about efficiency of the use of material resources gives only, so-called, internal description of the phenomenon and very poorly reflects the phenomenon in general. From our point of view, it has primacy on the general understanding of efficiency of public production in general and as well affects resource saving concept in particular. So, in our interpretation, the common understanding of efficiency of their use of material resources implies consideration of level and volumes of the use of material resources in the light of number of cycles of the use of material resources with a permanent turn them in the process of production.

Really, aforesaid determination of efficiency of the use of material resources is one by cyclic presentation of the use of material resources, where the last enter into a product lifecycle one time, and as though as lose in it the potential possibilities of the use again. At such statement of a question it is necessary to divide all material resources into one cyclic one, two cyclic and multi cyclic.

To one cyclic belong those material resources that is consumed fully or partly and can not be re-used in the subsequent cycles of reproduction. Practically all fuel and energy resources, some types of gases of and other could be name as those resources that have one time. To two cyclic resources belong those material resources that change the material form though participation in two cycles of reproduction – two cyclic resources.

It is such resources as, for example, coal that in the first productive cycle enters as a fuel,

and in the second, as building or other material. Most widespread are multi-cyclic resources. They are characterized by that they can participate in a few productive cycles in a the same material form. Entering into a certain productive cycle, they act as tools to create the certain use values. After making of the consumer resources, they are utilized, processed and enter into a new productive cycle, but in less (from the inevitable losses of resources), creating the new use values. This process takes place to complete exhaustion of this resource.

In this connection, it is possible to define efficiency of the use of material resources from the resource point of view, as a relation of sum of the use values, created in all productive cycles to the certain volume of material resources, originally entering into the first productive cycle.

Obviously, that complete efficiency of the use of material resources will be studied from the theoretical point of view, as a relation of sum of the use values created in all productive cycles to all expenses of certain volume of material resources in all productive cycles to their complete exhaustion in the last productive cycle.

Coming from aforesaid, two sides of a question are taken into account when studying the efficiency of the use of material resources : it is a resource side, which is reflecting the level of the use of material resources in the scale of national economy (region) and involving in the process of production all new additional material resources; and productive side, showing the level of the use of material resources in the cut of one productive cycle in the scale of national economy, region, enterprise. Both sides do not conflict with each other, and only show the breadth of scope of problem.

For realization of reasonable resource saving strategy it is necessity to have information of both resource and productive character, showing how one or another variant of development of region, national economy or exact production will treated in society, and also in a management by resources and expenses. All of it determines expediency of basing of conception of resource saving on resource-expense approach.

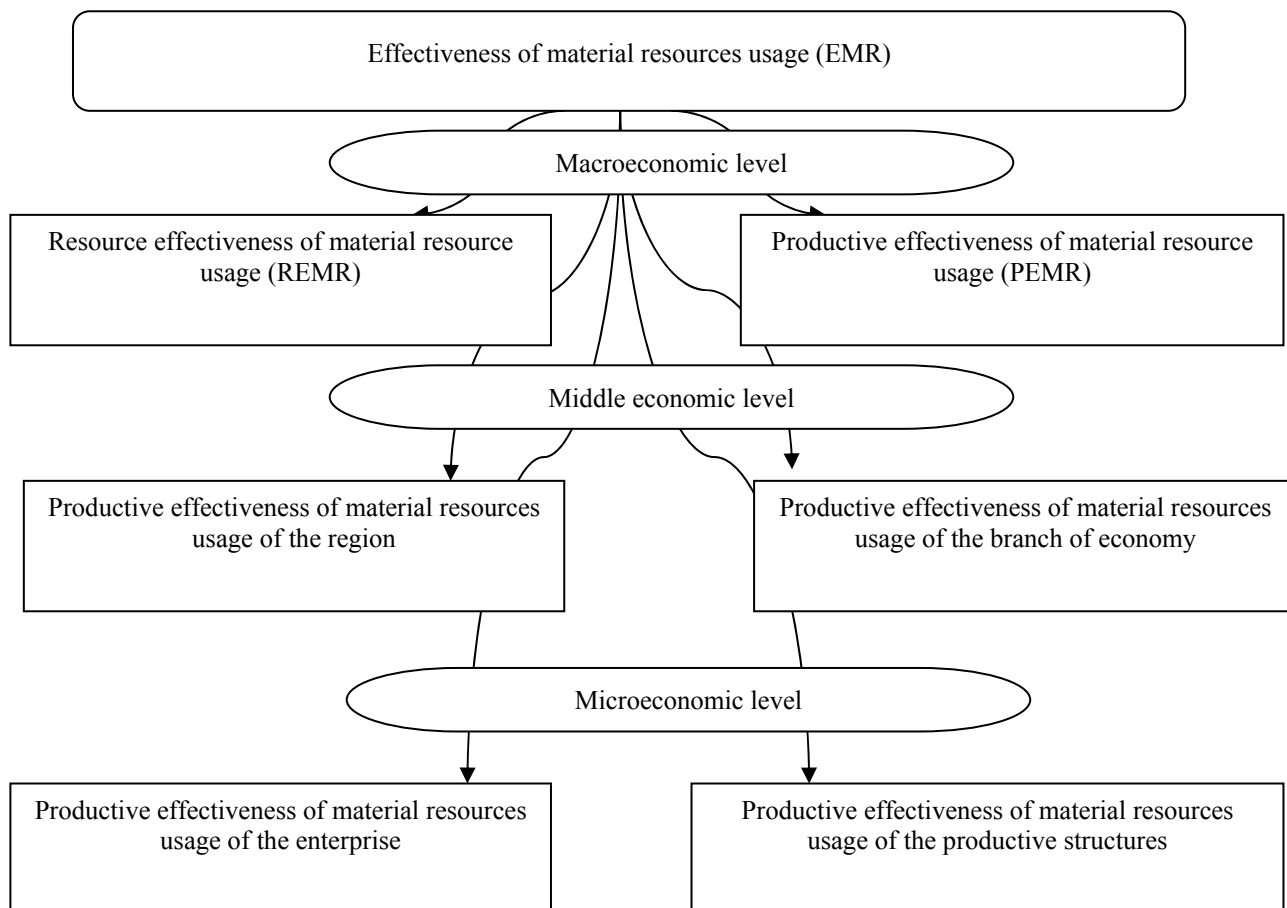
The conditions of sustainable development economics dictates the need to create effective anti expense mechanism of efficiency of resource consumption, that would allow to pro-

vide the resource saving and anti expense orientation of all economic development from enterprises and region to all national economy.

Objective character of resource saving in the conditions of sustainable development dictates necessity of development of mechanism of resource saving and making its criteria.

It should be noted that in the most civilized countries the decision of problems of resource saving, rational nature usage and ecological

safety comes at national level. They are distinguished considerable facilities on realization of large scientific researches, created special legislatively-legal, administrative and organizational- economic mechanisms of realization of resource saving strategy, ecological and social responsibility. The mechanism of implementing efficiency of use of material resources is shown on a Figure.



The mechanism of implementing efficiency of the use of material resources

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As we have noted before, the measures to increase resource effectiveness of material resource usage is based on the extension of the lifetime of physical resources and it can be regarded as the coefficient of return Kr :

$$Kr = \frac{O_{i+1}}{O_i}, \quad (3)$$

where O – volume of material resources; i – number of productive cycle this material resource is used in.

In the first productive cycle $i = 0$. On the size of coefficient of return it is possible to define exactly enough the amount of cycles this

material resource participates in that, and, consequently, sum of the use.

Productive effectiveness of material resource usage (PMR) exposes the internal state of production process : organizational, technical and technological level of production, level of development of scientific research and connections of it with production, level of social and economic responsibility and different other requirements of society to the level of development of production and other. It is presently accepted to evaluate mechanism of implementing efficiency directly with expenses (with different approaches about their composition) and

the effect got from it. This approach, it seems to us, not quite complete and not fully reflects main issue of the phenomenon.

It embraces only directly the process of production and does not touch the problems attended with it.

Really, a higher aim of any production is satisfaction of consumer necessities, but not production of some product in general. As a result of activity of man it is necessary to include not only physical mass of product of his labour but also its quality side, characterizing the degree of the positive and negative influence affecting man, i.e. quality descriptions of product of labour, ecological influence and other which is possible to characterize. From this point of view PMR is:

$$PMR = \frac{\text{Mass of the satisfied necessities of society}}{\text{Amount of material resources necessary for creation of this mass}} \quad (4)$$

or

$$PMR = \frac{\text{Standard of living of members of society}}{\text{Amount of material resources on one member of society}} \quad (5)$$

Such interpretation of PMR has a theoretical orientation on a greater measure, what practical in connection with certain difficulties of settling of constituents. Other positive aspect of PMR can be and concept of degree of intensity first, that is characterized by attitude of existent increase of PMR toward the best in world practice for certain period of time, and intensity of PMR, characterized by a relation by the own size of PMR and the best world standards of this size.

By a basic index on that efficiency of the use of material resources could be measured presently there is resource-demanding index. By this theory Andriychuk V.G. is stating that efficiency of the use of resources on every stage of productive process shows up in final analysis as the decline of resource-demanding index and serves as the important source of production increase [1].

It is necessary to mark that resource-demanding index is examined by economists in relation to the questions of process of production, that, in turn, serves for the receipt of certain effect.

Macroeconomic efficiency of the use of material resources can be defined as the relation of volume of the produced products toward the volume of material resources involved at making of this products, on condition of providing

of competitiveness first at the market (in ideal case accordance to the level of world standards), and also balanced of volume of the produced products and necessity of society in it, reduction of time of their processing, and also passing of rates of place of manufacturing industry as compared to mining.

We will add that it is necessary to distinguish efficiency of material resources usage in internal and external market. The necessity of this differentiation is conditioned by the features of forming of price processes and possibilities of incomparableness of cost indexes of effect of the produced products on internal (IM) and external (EM) markets. In addition different expenses are possible on creation of the same effect. Really, not secret, that in the conditions of the poorly developed economy and, according to the not competitive products of this economy, prior creation of economic conditions is needed for entering on external market for the production of separate types of products with corresponding of the internal descriptions to the requirements of external market.

For such production is characteristic: relatively progressive types of equipment and technological processes being in general highly expense investments; bringing in of more quality and expensive materials, highly skilled labor and in other words, the process of entering on external market carries discrete character with the high enough expenses of relatively similar products of internal market. However, sometime wrong opinion would be done that products for external market are created only in like manner, without orientation on internal market, which is not true.

Scientific based product can also compete on external market without some cardinal additional expenses compared to internal. In addition, products of mining and processing industries also can be presented by a wide assortment on external market without some additional expenses in relation to internal market. The afore-said suggests an idea about differentiation of all mass of producible at the national market products on the products of foreign market (EM), products of internal market (IM) and products universal both for IM and for EM.

Analyzing those concept, we consider some effect-making factors and conformities to law

of market also. So, we marked already, that as an effect of any products it is necessary to accept those satisfactory necessities of participants of process their productions that is celled in this products. In other words, a man enters into the process of production not for a receipt the determined amount of money, or amounts of things of the produced products, but for satisfaction of existing presently to time of necessities. Therefore the process of entering to EM takes character of increase and new possibilities of satisfaction of necessities of society. Thus correlation of effect comeasured to the expenses.

$$\frac{\text{Effect got on IM}}{\text{expenses}} < \frac{\text{Effect got on EM}}{\text{expenses}}. \quad (6)$$

This pattern (theoretical) are characterized as to overstocked national market and to national market (NP), which is characterized by a large trade deficit.

Also in this case must be considered a commodity EMR or comparative efficiency of production with internal efficiency of resources as well. EMR shows how it is effective to produce certain kind of products across the enterprise, industry, region and country. Schematically, it can be determined from the formula:

$$CEMR = \frac{P_s - P_a}{W}, \quad (7)$$

where: *CEMR* – Commodity effectiveness of material resources usage (CEMR); P_B – the effect created by the products produced; P_A – the effect created in the same direction with the use of resources in an alternative direction; W – expenses of material resources. P_B is calculated if there is the difference between the value of production, expressed in terms of value and the total cost (including material) necessary for its production. P_B is nothing but profit. In turn, P_A is defined as the net income for society of the alternative use of resources. P_B for any variant of material resources, except the best shows

negative value which indicates the amount of the shortage of society use values per unit cost of MR because of their inefficient use. For a best option of resource usage R_B is equal to P_A , and hence the magnitude of the losses referred to 0, and in this case we have the best way to use the material resources corresponding to the present level of production. Thus heading efficiency characterizes the best use of material resources and has two interdependent sides.

♦ First, it is the effectiveness of direct cost of material resources, manifested in: reducing material consumption, waste reduction, efficient use of business waste and secondary resources in production, etc.

♦ Second, the effectiveness of this indirect savings of material resources, the level of which is characterized by technical indicators and consumer products.

The two sides do not contradict each other, and vice versa, with the right addition of their potencies give a powerful impetus in the economical and rational use of material resources. However, the external conditions, so-called environment for the production process, in which may reveal reserves. In our opinion, resource saving strategy in recent years has a beneficial effect on this process.

Conclusions. Based on a comprehensive review of the scientific literature and current concepts of material resources the authors in the articles reviewed objectively nature of the resource in an economy of sustainable development, which is due on the one hand, the increasing demand for resources, on the other – their constant shortage. Efficient and effective resource saving are the main factors of economic development and the tool to overcome economic crisis. The article explains the purpose of the criterion of resource and put mechanism to implement resource strategies at different levels of the economy.

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Новини АПК

Малі виробники сільськогосподарської продукції мають стати потужним сектором виробництва

Розвиток малих форм господарювання на селі обговорили експерти та науковці в рамках робочої групи, сформованої при Міністерстві аграрної політики та продовольства України. Зустріч відбулася під головуванням заступника Міністра аграрної політики та продовольства - керівника апарату Олександра Сеня.

«Малі виробники сільськогосподарської продукції повинні модернізуватися відповідно вимогам ЄС і стати потужним сектором виробництва», - зазначив заступник Міністра.

Обговорено питання правового врегулювання трансформації особистих селянських господарств в сімейні фермерські господарства та шляхи спрощення умов господарювання на селі, оскільки сьогодні саме дрібні виробники щороку виробляють близько 50% валової продукції сільського господарства.

У ході засідання учасники зустрічі висловили суттєві пропозиції щодо можливостей визначення статусу тих селянських господарств, які збираються виходити на ринок із власною продукцією. В майбутньому це має стимулювати спеціалізацію діяльності підприємців, що дозволить розширити обсяги та підвищити якість продукції. Крім того, це спростить їх доступ до програм державної підтримки, дешевих фінансових ресурсів. У підсумку такі інструменти сприятимуть адаптації селянських господарств до вимог внутрішнього та зовнішнього ринків.

За результатами зустрічі учасники домовилися підготувати пропозиції щодо змін і доповнень до Закону України «Про фермерське господарство». Крім того, члени робочої групи мають надати пропозиції щодо спрощення механізмів діяльності малих і середніх сільськогосподарських підприємств, особистих селянських та фермерських господарств, скорочення кількості контролюючих органів і показників, за якими звітують виробники.

Прес-служба Мінагрополітики України