components, wt %: epoxy dianic resin (ED-20) – 100 wt %; curing agent polyethylenepolyamine (PEPA) – 10...12 wt %; modifier 2-methyl-2-thiocyanato-3-(4-thiocyanatophenyl)propioamide – 0,8...1,0 wt %.

Conclusions. The input of more than 1.0 wt % of the modifier in on each 100 wt % of ED-20 leads to a decrease of the thixotropic characteristics of the material due to the insufficient cross-linking of the binder. The input of the modifier at concentrations up to 0,8 wt % reduces intermolecular interaction in polymer binder that impairs its adhesion properties.

Gerasymchuk N. A.,
PhD, Associate Professor,
National University of Life and Environmental Sciences of Ukraine.

IMPROVING RESOURCE POTENTIAL OF ENTERPRISE BY THE MODEL OF INVENTORY CONTROL

Introduction. Availability of resources is an important economic factor for the development in the real sector of economics. Currently, the problem of resource aviability for enterprises requires an immediate solution, as prices for electricity, water, gas and raw materials are rapidly rising. The most on time problem is the ability to find ways to reduce the unit cost of energy and material resources per unit of output, otherwise the production costs will inevitably lead to a loss of income of the enterprise. One of the solutions to the problem of reducing the cost of energy and material resources could be to find reserves on the enterprises, which can be accomplished at the systematic analysis of the production process in order to identify the real picture of the use of resources. In this regard, resource saving must become a kind of element of domestic economic potential of the company along with the rise of the material, technological and employment potential.

Literature review. The role and place of resources in enterprise development was thoughtfully studied by prominent national and foreign scientists, such as Arefieva O.V. [1], Andriichuk V.G., Malik M.Y. [2], Gryshko V.V. [3], Zaburanna L.V., Ronald Kay, William Edwards, Patricia Duffy [5], , Vasylenko Iu. V., Tolstop'at V.L. [6], William Meyers [4], Melnyk A.M. [6], Zinovchuk V.V. [3], and many others whose research served as the basis for this article.

Research objective. The aim of the research is the development of simulation model of resource inventory control and practical recommendations on the formation mechanism of resource saving management.

Result of research: In the actual economic practice indicators which characterize the material, financial and other flows are determined by the input and output of the economic system, and indicators characterizing the stocks, defined as the deduction between the in and out resource flows. At the same time indicators of resource flows characterize the connection of the enterprise with the external environment, and indicators characterizing the stocks are determined as the internal enterprise resource flows to increase its reserves. Thus, the production process involves two aspects: the formation of reserve funds of means of production, objects of labor and human resources and processing of certain stocks to the finished product [1]. In this context, a key role in the resource-saving management should be given to the production function, which expresses a stable quantitative relationship between inputs and outputs of microeconomic systems of enterprise. Main driving force of the all activity is the self-preservation law, according to which there should be equality of energy supplied and consumed on the implementation of production activities. Consequently, the enterprise for sustainable functioning must always receive resources from the environment and transmit to it products of its activities, provided that their value exceeds the value of resources [4].

The defning parameters for modeling the exchange process are undoubtedly stocks of means of production, objects of labor and human resources, with the cost of fixed assets to be general indicator of means of production and the cost of working capital - an indicator of the objects of labor. Thus, the overall result of the operation as the volume of production set up is dependent on the basic factors of production, their quantitative and qualitative level.

It seems that the mathematical expression of the production function of C. Cobb, P. Douglas [5] testifies to the quantitative dependence of the volume of output from two factors:

- Capital as part of the financial resources of the enterprise, advances and invested in production for profit;
- Work as a human activity, as controlled set of organizational and economic relations which have developed in the process of enterprise activity;
- Results of scientific and technological progress that affect the qualitative change in fixed assets and working capital that are advanced and invested financial resources in the form of capital, as well as a qualitative change in the form of organizational and economic relations.

$$Y = A \times K^{\alpha} \times L^{\beta} \times E^{n}, \tag{1}$$

where Y- production volume of products; K - capital; L - labor; A - proportionality coefficient (the correlative coefficient), α and ß - coefficients characterizing growth in output per 1% increase of the corresponding factor (capital and labor); E - a factor that reflects the impact of technological progress at the time n.

If we consider the function expressed in terms of average annual growth rate of factors, including the resource, then it would have the following form:

$$Y = \alpha K + \beta L + R \tag{2}$$

where Y, K, L - respectively the growth rate of production, capital and labor; R - complex index of growth of economic efficiency of all factors, reflecting the qualitative changes in technology, increase of qualification and the educational level of the staff, improve the quality of materials, the emergence of new types of materials, more efficient use of living or materialized labor, etc.

Cobb-Douglas research determines not only the highest possible level of output for a given amount of production factors and the specific technology, but also demonstrates the competitiveness of businesses in the functioning of efficient management of the factors of production. This production function can be described in the following way:

$$Y = f(x1, x2, \ldots, xn), \quad (3)$$

where Y - the amount of output produced by the enterprise for a certain period of time; x_1 - the first factor of production for the same period of time; x_2 - the second factor of production for the same period of time; x_n - performance n-th factor influencing the production process for the same period of time; n - number of factors affecting the production process in a given period of time.

Therefore, for effective resource saving management necessary to have in time information not only in monetary terms, but also information on the status and movement of inventory in the relationship of monetary and commodity flows. Management of the company at any given time should be able to see the status of shipments and deliveries, payments for them, the level of costs and benefits with any desired level of detail: the enterprise as a whole, specific by the consignment, the period up to the particular delivery and payment [2].

An essential component of effective work in this direction is the resource management subsystem providing a total enterprise management system, the functioning of which, in turn, depends on the awareness of policy makers at all levels of the management hierarchy of the costs, income, property and finance in the enterprise. Such information is usually contained in the financial statements, but its current form does not provide answers to many questions of resource management, which calls for the creation of additional information subsystems operating in parallel with the accounting subsystem [3].

This task calls for the introduction of natural resource management indicators, enabling planned to monitor and report form pursuant to a specific project, not only on cost indexes (by articles costs, financial performance, cash flow), but in real terms (in terms of purchases, shipments, sales, movement of goods) [6].

For such indicators requires summarized consolidated report combines information on the enterprise in value and natural terms, as well as of intangible resources of the enterprise. It is therefore proposed simulation model of management of resource reserves, according to which the company must be conditionally divided into objects, characterized by inputs of monetary and material flows to them and document outputs. The difference between the input and output of such objects will be a reserve.

Thus, the work of the enterprise turns into a separation in space and time, the process defined by the two states: the availability of resources of the enterprise in the aforementioned objects in the early study period; the availability of resources in the enterprise at the end of the above-mentioned objects of the test period. The difference between these states will testify about the dynamics of the volume of stocks of resources both on the enterprise as a whole and for each item separately (Fig.1).

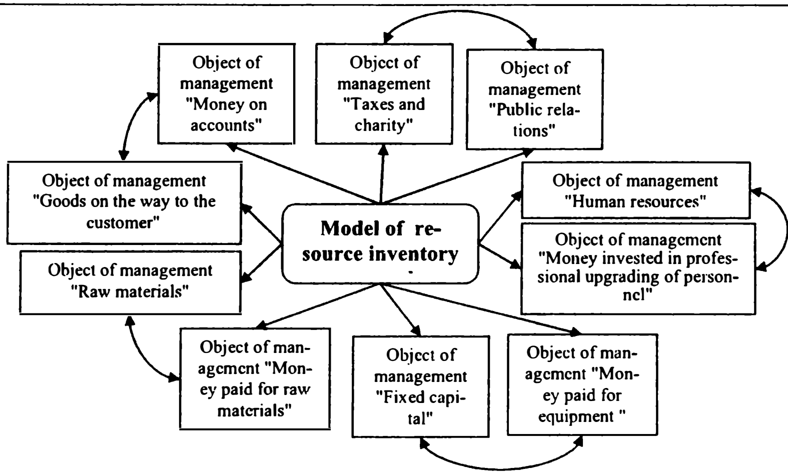

Figure. 1. Simulation model of resource inventory control

This model is used in the process of resource saving management can be an effective tool for managing resource maintenance subsystem within the overall organization and management of resource-saving economic model, because with any change in the company, it provides an understanding of how and where are placed the working capital of the enterprise. Similar to the financial statements, it allows enterprise management to see the total change (entry and exit) of resource flows in the enterprise, which allows verification of the latter.

However, it should be recognized that the proposed model, in general, does not facilitate the solution of the problem of inventory management, because every time there is a problem in the production, which occurs when you need to create a stock of material resources in order to ensure continuous and smooth operation of the company at a predetermined time interval. To solve this problem is necessary to determine the number of ordered products and the timing of orders. In such cases, the output is either via the creation of a single stock for the entire reporting period of time, or through the creation of reserve for each unit time period under consideration.

On the other hand the proposed model of resource inventory management provides an opportunity to see different items such as training expenses, tax and other deductions in the enterprise. It contributes to the creation of any virtual objects: an object that informs about investing in staff training; object informing about tax deductions to the state, etc. Thus, this model allows us to identify unique, so to speak, flows of resources. For example, the cost of training and other are returned to the company in the form of re-entering the work of specialists.

Conclusions. Summarizing all conducted study, the author is stating that simple thing could give astonishing results - old good economy and control gives a large surplus in the total resource economy and increasing income of the enterprise as a logical result. Thus, the presented model makes inventory management to be considered as a long-term (effective or ineffective) investment and provides a simulation of the processes associated with the described items of expenditure, while increasing the efficiency of resource saving management for enterprise and creating the basis for the resource potential. In general, resource saving management at the enterprise should be analyzed and assessed in view of its impact on the process that increase or reduce resource use, in developing and implementing a strategy for achieving a high level of resource potential.

References

1. Areficva Olena V.; Gerasymchuk Nataliia A. (2006). Managing of entrepreneurship formation: Monograph. – Kyiv, 225 p.
2. Gryshko V.V. (1997) Problems of management of resource using in agriculture [monograph] -Kiev, Ministery of economics of Ukraine, 188 p. (in Ukrainian)
3. Malik Mykola Io; Zinovchuk Vitalii V.; Sabluk Petro T. (2001). Basics of Agricultural Entrepreneurship Editor Malik M.Io. – Kyiv, 582 p. (in Ukrainian)
4. Meyers, William H.; Westhoff, Patrick; Fabiosa, Jacinto F.; Hayes, Dermot J., The FAPRI Global Modeling System and Outlook Process, Journal of International Agricultural Trade and Development Vol. 6 no. 1 (2010): 1-19
5. Ronald Kay, William Edwards, Patricia Duffy (2011). Farm Management. McGraw-Hill Science/Engineering/Math; 7 edition, 2011. - 480 p.
6. Vasylenko Iu. V., Bilous'ko Iu.K., Tolstop'at V.L., Melnyk A.M. (1988) Reserves of economy of resources in agriculture. – Kyiv, Urozhai, 176 p. (in Ukrainian)
7. Walter B.Meigs, Robert F.Meigs. (1998) Accounting: The basis for Business decisions. Eleventh ed. – McGraw-Hill Book Company, 1998.- 1084 p.

GERASYMCHUK Y. A.,
PHD, ASSOCIATE PROFESSOR,
NATIONAL UNIVERSITY OF LIFE AND ENVIRONMENTAL SCIENCES OF UKRAINE

THE METHOD OF CALCULATION OF ECONOMIC EFFICIENCY OF REPAIR OF DETAILS

Introduction. Adaptation of technical service of Ukraine to market relations, reform of the agricultural sector of economy, the emergence of new types of machinery, diversity of ownership put new technical requirements to agricultural service enterprises. Theoretical basics of the theories of friction and lubrication, wear and aging are put on the field of study of maintenance and repair of machines. The main task is to implement the latest finding of scientific achievement of mechanization of agricultural production, to provide material and technical means and organize of its effective use. Instead of over-centralized provision of the means of production are created new forms of technical services, which are based on the market requirements.

Literature review. The problems of effective functioning of the repair and maintenance of equipment were studied and solved in the work of such scientists as Golovin SF [1], Yofynov S.A. [2], Kanarchuk V.E. [3], Kozachenko A.V. [4], Konovalov A.I, Lukianenko O.H. [5], Krivenko P.M., Fedosov I.M.,