Natural Resources Evaluation and the Labour Theory of Value

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1. The value of natural resources as presented by classical economics

Since the fundations of the labour theory of value were formulated by A. Smith and D. Ricardo, the evaluation of natural resources has constituted a particularly difficult problem. For resources of natural origin were exchanged for products of work, though they themselves were not such products. The exchange whose rules was able to explain the theory of value, should be based, however, on the exchange of a constant amount of the same factor which was a labour used to produce various commodities. In the case of natural goods the rules of this exchange seemed to be infringed. A still more difficult problem was to explain the sources of the income (rent), widespread in D. Ricardo's time, which a land owner could gain renting his land to a direct producer. This type of relations in agriculture suggested that the "primeval and indestructive power of soil" is an independent factor which co-creates the income of the participants in the production process. A. Smith understood this still literally. He thought that in agriculture nature works together with man, and though its work costs nothing, the product of this work has a value like the product of work by the most costly workers. A rent may thus be considered as a product of this natural power which a land owner lends to a

farmer.[1)]

D. Ricardo was a more consistent adherent of the theory that ascribed a value-creating capability only to human work. Though the "primeval and indestructive power of soil" still remained for him the necessary premise of the existence of a rent, he did not treat its emergence as the effect of a direct operation of this power but as a result of modification, through its intermediary, of the conditions of production under which work was spent. If agricultural production took place on lands as abundant in the primeval and indestructive power, that is if the most fertile lands were in abundance, then a landlord would obtain no rent. When the demand for agricultural produce entails, however, the need to cultivate both better and worse land, the value of product is decided by the higher work outlays, necessary in view of the worse natural conditions which gain social acceptance.

D. Ricardo's reasoning presented above bore the mark of a theoretical analysis that the logic of deduction put above the seeming obviousness created by direct observation. D. Ricardo's argument hit out particularly at the views which supported the thesis on an independent and value-creating role of natural forces. For the thus formulated rent seemed to be a fee for the value-creating service of land and justly belonged to the landlord. This led, however, to the conclusion that an abundance of fertile soil should provide particularly high income in form of rent. Meanwhile, according to D. Ricardo's finding, the relative rarity rather than the abundance of fertile soil led to an increase of the rent. This explanation was far from the obvious, for it is not easy to understand how a fully negative factor, such as the lack of fertile soil, can generate an income.[2)] The difficulty D. Ricardo had to overcome in order to explain the origin of rent, was to reconcile both contradictory observations remain-

ing compatible with the theory of value. For, though the rent seemed to be an effect of the circumstance that "nature co-creates with man", it was, however, the highest when the possibility of this cooperation became drastically limited. D. Ricardo did not resolve these difficulties. The concept of value itself had to be developed and given greater precision for emerging contradictions to be removed.

2. The Marxian stage in the development of the labour theory of value

Commodity, value and value added are key concepts of the Marxian theory of value. Their more deepened formulation allowed to show in the proper light the genesis of value of goods drawn on nature.

A commodity assumes the existence of a seller and a purchaser, a producer and a consumer, that is, it assumes some level of cooperation and mutual interest of producers in the products of their work. A purchaser is interested in the use value of commodity, capable to meet his needs. On the other hand, a producer is interested in the exchange value of a commodity, that is, in the ratio to which a given commodity can be exchange into any other commodity. The exchange value, which confers commensurability on various use values, comes from the commensurability of the spent work. However, the possibility of comparing different commodities is not a feature of work itself. It doesn't come from the circumstance that human work has similar, and therefore comparable, energetic or physiological properties.[3] This commensurability has a purely social genesis. It emerges, develops and deepens as an expression of the mutual dependence to which various types of work spent in the community

are subject. This dependence is manifested in the form of complements of various types of work spent in the economy. It shows developing possibilities of replacement the work of one producer by the work of another. In effect, every purchaser can at every moment use the products done by many producers unknown to him. He may thus treat their works as mutually identical, undistinguishable and uniform particles of the total pool of social work. An anonymous commodity carries in it the work of an anonymous producer, that is abstract work, only a specific particle of social work. The circumstance that the exchange value assumes the existence of use value means only that the work spent in production must find an affirmation of its social expediency in the utility characteristics of the product. Thus a value can be found only in what contains utility produced earlier. The investigation of the interrelation between the value and the use value of a commodity was treated by K. Marx as an important fragment of the labour theory of value.

The relation between the use value and the value of an individual commodity is particularly important in the context of an economic evaluation of natural resources. Utility constantly remains a feature attributed to an object. Its genesis-product of work or gift of nature may not be important in the aspect of the need that is being met. On the other hand, the value of product takes its justification from the particular direction, and the specific, social expediency of human effort. That is why value is linked with the spending of work and that is why it is a developing category, going beyond the contact between man and nature, and finding its expression within the links between producers in a society. The history of this process allows us to perceive an evolution of the concept of value itself and the way in which it is connected to work. The direction of such an analysis can be found in G. Lukacs's works.

Gradual separation of value from utility is a synonym of a growing autonomy of the social conditions which determine man's existence in relation to purely natural conditions. The category of elementary value arises still in the sphere of usefulness, under the conditions when a design or a plan to work is not yet distinctly separated from the act of work itself. The primitive man lifts a stone and looks at it comparing its properties to those which are necessary to realize his aim. This simple choice contains already basic issues that get solved only later. First of all the guestion: is the stone itself valuable or is it only the act of valuation—the choice—that confers value on it? What does determine the function of a value carrier, proper to the given object? G. Lukacs places the motive of action as the first. "If the goal is recognized as given then an object becomes valuable in view of the goal, since some of its properties-which next to other peculiar features are vested in it in an objective way-make it apt to perform the role of a tool leading to this aim[4]". A single goal or over the next period, the common expediency which governs the way of nature perception, thus become an equally important condition of the emergence of value, as the physical effort, that is the act of work, itself. "All work would be doomed to be fruitless, would be impossible, if the possibility really existing in nature were not turned into reality. Possibility is raised by work consciously to the sphere of reality[5]". The use value of object may thus have a purely natural genesis but the value that it contains is constantly brought from outside nature, from jointly acting people who perform social work shaped in common.

The use value contains transformed natural resources. The scope of use of natural resources become increasingly wider and the degree of their processing become incresingly deeper. This process is, however, attended by an expansion of the common direction given to the work spent

in the transformation of nature. "The metamorphosis of work, connected with the more intensely developing relation of the use value to the exchange value, consists in the transformation of concrete work on a specific object, into an abstract value-creating work[6]". The relation that takes place between the use value and the exchange value of a commodity was thus reduced to a deepening dependence between concrete work and abstract work.

Perception of the determining role of work in the emergence of the use value and the exchange value induced Marx to leave aside and to treat as rare, incidental and untypical those utilities which, with a high advancement of social development, can take their final shape only thanks to nature. In this connection the presence of useful labour was treated as a necessary condition for a natural object to be shaped as to meet social needs. "Thus commodities, things in general, have value only as an expression of man's work; not because they in themself are something as things but because they are an incarnation of social work[7]". "Since the exchange value really is nothing else than a mutual relation of the same and general types of work, nothing else than a material expression of a specifically social form of work, it is tautology to state that work is the sole source of value. It is the same tautology to state that the matter of nature as such has no exchange value since it contains no work[8]". If we were to assume that the natural object in its natural form has a value then this would mean that a different power independent of human work operates within nature giving to the forces of nature a direction consistent with the social needs. Consequently, how can work outlays justify the exchange value of goods drawn on nature[9]? A logical analysis of the concept of a commodity alone is not enough to solve the problem. Necessary is an analysis of all, also natural, conditions which attend the process of

work.

Transition from the consideration of the effect of production-the commodity-to an analysis of its emergence, enriches the labour theory of value with the category of value added. This is the first, intermediate step that is necessary to explain the genesis of an economic evaluation of natural goods on the basis of work outlays.

The production of a commodity needs other commodities, among them labour force, to consume. Every production factor gives the produced commodity as much value as it loses. The sole exception is labour force which being itself a commodity, at the same time is capable of producing a new value. By purchasing labour force according to its value, a greater quantity of value can be created in the labour process and materialized in a product than that which was paid to it. In this way arises a surplus of the value of the product. Next to labour force, means of production and natural resources take part in the proces of producing value. Their role does not consist in the creation of a new value but in transfering to product the same value they have themselves. "Means of production never transfer more value to the product than they themselves lose during the labour process by the destruction of their use value. If such an instrument has no value to lose, if, in other words, it is not the product of human labour, it transfer no value to the product... In this class are included all means of production supplied by nature without human assistance, such as land, wind, water, metals in situ, and timber in virgin forests"[10]. If it is so then the source of all incomes derived from production, that is also incomes on account of natural resources, must lie in the value that arises newly thanks to the expenditure of work. Thus rents and profits are only titles among which the value added is distributed. This conclusion is convergent with D. Ricardo's observation. Where

labour force is being additionally supported in its productive work by favourable natural conditions, a value added may arise, since instead of expensive means of production gratuitous force of nature can be introduced. However, if the natural conditions do not provide this possibility, a rent can't be paid. D. Ricardo was unable to justify the economic evaluation of the worst but still cultivated land. In order to do this, necessary was a second intermediate step that developes labour theory of value, namely the concept of a price of production.

Up to the moment when only the production of separate commodities is considered, their value is linked directly with the work spent in this process. Thus the natural resources must be left out. Production not only finalizes, however, one stage of the productive activity but at the same time initiates the next stage. With an advanced level of social development, the result of production is determined by the distribution of labour force as well as means of production and natural resources which will influence the level of labour productivity. In this circumstance the exchange of commodity will not longer observe the value which the labour force could create without technological and material equipment but the value which is generated by the whole outlay used up in the economy. The seeming contradiction is only an expression of the new conditions born by competition which make the expediency and the effectiveness of the spent work dependent also on the technological and natural equipment. The transformation of value into a price of production is a reflection of the changes in the social conditions of production.

The broadening of the labour theory of value by the concept of a price of production provides sufficient premises for imposing upon the natural resources economic evaluations which maintain their connection with the outlays of social work. It helps to detect a second, less direct pattern of

bringing value into the utility features of an object. Work need not necessarily get in touch with an arising commodity for it to gain an exchange value. If it became socially useful without an earlier expenditure of work, it would participate in the distribution of value and on this account it would become one of the many products which take their share in the total value produced in the economy.

In the aspect of the production process itself, the natural resources thus have no value. Production process is not, however, the only way in which an object can get a socially useful shape. The natural resources can be shaped in this way without the influence of work. They will thus be distributed in society like products of work are distributed, through exchange, becoming carriers of part of the total value that arises in the economy.

The pattern of bringing value into the utility features of an object through the intermediary of the total value distribution, is much less obvious and evident mechanism which imposes the value on a commodity. The process of spending work (production process) is much more widespread and more emphasized by K. Marx himself. It is understandable that this scheme of bringing value into the useful properties of a commodity is much more common and easier perceived. It becomes also the sole and indispensable scheme when the point is to understand the machanism of producing value in economy. It does not rule out, however, but even assumes the existence of another mechanism which modifies the value of the products generated in the process of work and brings value to objects whose use value have arisen without catalyzing influence of production.

Because of intensifying pressure of natural constraints on the economy both schemes which link the value of natural goods with work outlays

must be taken into account when economic evaluations of these resources are made. Under conditions when technical installations are built in natural cycles that lead to the renewal of useful features of natural resources (land fertilisation, purefication of water), these resources cease to be gifts of nature and become an effect of cooperation between man and nature. When the natural environment is not excessively burdened with the effects of economic development, there is no need to make these outlays. The natural resources are then (this took place still when K. Marx was alive) natural objects with only natural utilities. The need to make use of work outlays to prevent the degradation of nature, modifies the genesis of their use value. It arises, to some degree, thanks to the spent work outlays. As such it may thus contain human work and be, according to the first scheme, a value as an incarnation of this work.

The natural resources, also those created with the participation of work outlays, are limited as compared to the economic needs. Consequently their consumption will lead to a differentation of the productivity achieved by various producers. Thus the second scheme which links value with work outlays becomes active. Goods with more advantageous utility features will achieve a higher exchange value through the mechanism of the total value distribution in the economy. The value they may have on account of their genesis will be increased by the value that will be brought to their utility features as a result of a distribution of the total value produced in the economy. Economic evaluation of natural resource will thus be composed of the value created by the work outlays involved in the emergence of its utility features and of the value which will be brought to these utility features in the course of the total value distribution, that is, of the rent.[11)]

3. The problem of the formula for an economic evaluation of natural goods

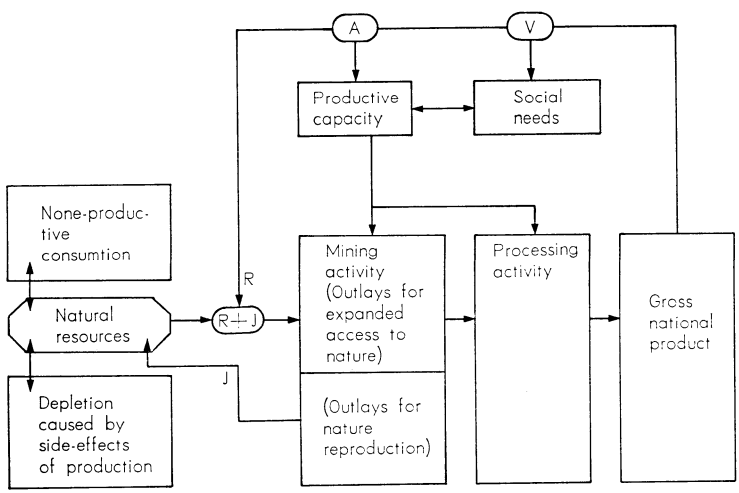
An economic evaluation of natural good should be aimed at a monetary assessment of its value. The arguments presented earlier induce us to comprize in this estimate 1) the rent which reflects the value imposed upon natural good and 2) the value produced by the work outlay which cooperated in the emergence of the use value of that resource.

Both components of the value of a natural resource cause substantial difficulties when they are quantified in a form of a monetary formula. First, they arise in different ways, in different places and at different moments of time in the economy. Second, their dimensions are dependent on one another. The amount of the rent is dependent on the volume of supply of a resource. This supply may rise in effect of an increased rent. But growing income will become an incentive to raise the economic outlays that serve to support the natural processes which reproduce the useful features of natural good. A higher supply of this good will have, however, a stabilizing effect on the amount of the rent.

The fact that the rent provides a fundation for the monetary evaluation of natural good, creates substantial difficulties for expressing this evaluation in the form of an algebraic formula. For the appraising of a rent differs from the appraising of outlays in the economy by the circumstance that it arises as an result of an increase in these outlays and not as a factor which has a share in their growth. An estimation of the outlays or of the reduction of these outlays in the economy can by only an approximate and indirect method of finding out the amount of a rent. For

a rent arises in the effect of the distribution of the value produced in the economy. Therefore it is open to calculation and can be revealed only after production is finished, at the moment when the product is being distributed in accordance with the consumer and development needs of society.

The way in which economic outlays will be distributed among various production branches is dependent on many factors. The social needs as well as their structure and level will influence the way in which the productive capacity will be used and expanded. In turn, the technological advancement of the means of production, the efficiency of their servicing and supply, will influence the level of the outlays necessary to achieve the desired effect. Thus if we assumed an established level of needs and an existing productive capacity in the economy, then the distribution of the produced value should reveal the degree of scarcity of natural goods in economy. This should be expressed in the rents arising in the places where these resources are used up. The diagram below presents the main



types of dependences proper to this process.

Rent (R) is the basic component of the monetary evaluation of a natural good. It arises as a result of the distribution of the value produced in the economy (gross national product) among those titles which should ensure the conditions for the next act of production. The meeting of consumer needs (V) and development needs (A) in the economy represents the basic goal of the distribution of income as produced. On the other hand, the isolation of rent (R) reveals the role which the natural resources perform in the reproduction of the conditions of economic activity. Consequently, the emergence of the rent and the revealing of its level calls for taking into account the natural condition under which production takes place. In order to get the rent in a monetary form, first the shortage of a better natural resource must gain its reflection in the level of price. A parallel production of the same produce on beter and worse lands or with the use of water more or less suited to this aim, should be sold at a price that would allow to restart production under the least advantageous but still necessary natural conditions. A growth of the prices of products, stemming by a growth of demand or by a growth of outlays, causes an increase in the rents of producers who use more valuable natural resources. Thus the rent will manifest itself as a consequence of an increase in the price for product while the price will express the value that it gained in the course of its processing. It could be possible therefore to establish the level of rents only after the production process is completed, after the value of the final product is produced and distributed in ordert to reproduce the production factors used up.

The monetary evaluation of natural goods should also take into account the outlays made in a view to support the productivity of natural processes which regenerate the useful properties of natural resources. In economic

practice many outlays are made in order to reproduce consumed natural goods. The outlays whose aim is to support the productivity of the processes that take place in nature comprize: 1) the outlays which safeguard the natural environment against losses caused by industrial waste, 2) the outlays made with a view to remove the threats already arisen in nature, 3) the outlays which reverse the negative influence of destroyed resources on their environment.[12] A more expanded classification of these outlays is given by K. Gofman. It comprizes factually all expenditures connected with the maintenance of an ecological equilibrium. They contain the outlays for ensuring a stable level of pollution (constraint on productive activity, application of pure technologies, expansion of treatment plants, protection and expansion of green areas and outlays for the protection of biocenoses and landscapes[13]). The expenditure for these purposes undergo a constant expansion. "An interpenetration of natural and economic sources of reproduction takes place, and today it is necessary to make outlays not only for the mining and utilization of a resource but also for the support of a self-regeneration of nature or for the removal of damages made to its resources. The natural resources thereby enter the economic process materializing already work outlays in themselves, thus being kind of carriers of value[14]". The monetary evaluation of natural goods based on an assessment of the rent, in this point gets in touch with the value that arises thanks to the outlays of work for their production. These outlays undergo, however, a far-reaching reduction confining themselves only to the items which contribute to the natural usefulness of the resources of nature.

The economic usefulness of natural goods is created practically both by the outlays of work made directly for this purpose (J), and thanks to those outlays which develop an adequately great demand for these resources in

the economy. The level of rent (R) is their indirect result. The fixing of a formula for the evaluation of a natural resource, as a sum of a monetary assessment of the rent and of the effect of outlays which co-create the useful properties of this resouce, constitutes only a general indication. It answers some questions and at the same time asks another ones. Among the explicated questions we may classify the strict harmonization of the monetary evaluation of natural goods with the labour theory of value. On the other hand, the problems that call for a solution include : 1) the method of a possibly precise assessment of the rent in the economy, 2) the account, in the price formula, of the mutual dependence between the outlays (J) and the level of rent (R), 3)the possibility in adaptation of the metod of monetary evaluation to the specificity of different types of natural goods. The tasks mentioned here are the reason for many controversies around the form which the formula for natural resources evaluation should have.[15)]

The most important difficulty in the definition of a formula for the monetary evaluation of natural resources is to isolate from the value which arises in the economy that part of it which should be ascribed to the natural resources. The result will be thus dependent on the mechanism of functioning of the economy. The way in which the economy operates influences the type of the economic goals found and adopted. It may leave out or minimize the importance of natural processes for the proposed patterns of development. It may also approve of or call in question the justification for the existence incomes that raise consumption or investment, on account of the application of better natural resources. Leaving out rents in the balance of distributed value depreciates, however, the economic importance of the natural conditions of economic growth.

4. The monetary evaluation of natural resources in the mechanism of functioning of the socialist economy

The rent exists originally in the form of products produced in greater quantity or cheaper, thanks to the application of a convenient natural resource. It may not be isolated from these products and remain a part of the gross accumulation of an enterprise or a part of the budget revenues. Thus instead of coming out as an expression of a natural constraint on the economy, it may create an additional fund that increases industrial investment and in this way the charges put on the natural environment by productive activity. This phenomenon will take place in full measure when the economic mechanism has no tools to reflect the influence of the natural conditions of production on the economic effects achieved in enterprises. In these circumstances, an increase of material production becomes the main, positive goal of economic activity. On the other hand, nature is used as to make a maximum contribution to the achievment for this goal. The introduction of the instruments, into the economic mechanism, that separate from the total accumulation that part of it which arises in effect of a growing shortage of adventageous natural resources, is thus the first move toward a reduction or at least a registration of the benefit by which the exploitation of nature contributes to economic development.

The differences in the effectiveness of production, entailed by the use of different natural resources, may be registered in two ways.[16] The first of them is based on a differentiation of the prices paid for natural resources or products recovered under more difficult and less advantageous natural conditions. The second method adopts the charges which are

paid by the user of a better resources, for his right to use them in production. The use of a more convenient natural resource would thus be subject to a taxation. Its aim would be to exclude from the income of an enterprise a profit which is gained thanks to producer's access to a limited resource. It ought to be transferred to the local or central budget account then.

Both methods provide the same final results. They lead to a reduction of the gross accumulation of an enterprise in proportion to the quantity and the quality of the resource it uses. By introducing differences in the purchasing prices for a product recovered under different natural conditions (mineral resources, timber, land), the middleman institutions will retain an income which in other circumstance would be transferred to individual producers in form of a rent. This method of accumulating rents helps the exclusion of a certain part of them from the gross accumulation of an enterprise. The way of further use of accumulated rents may, however, be diverse. If the institutions that are agents in the distribution of goods that arise under various natural conditions, will shift them to enterprises which work at the next stages of processing at the same price, the rents will be excluded and centralized. In the other case the advantages provided by nature will be shifted to the successive stages of processing and may be expressed only in the final producer's income. The rents will become thereby a source of financing the development of the final stages of processing.

Differences in the purchasing prices for raw materials or products which arise under different natural conditions, allow to realize a wide variety of concepts, from the case when this differentiation is fully individualized (separate price for each producer), up to the situation when it embraces whole groups of enterprises or whole climatic and geological zones. In

the first situation, rents may be excluded from the accumulation of enterprises to an amount that is dependent only on the correctness of calculation. In the last case, a large part of them, connected with differences in the local natural conditions, will remain unseparated from the remaining sources of the accumulation fund.

The task to separate rents from the gross accumulation of an enterprise may alternatively be entrusted to charges paid for the use of natural resources. These charges would be diversified depending on the quality and the availability of a resource and would oblige every its user. Thus the charge for the use of natural resource assumes an objective existence of a monetary evaluation of this resource. Depending on the solution adopted, the charge may be equal to the monetary evaluation or may constitute its established part. In the latter case it would be a form of dividing the advantages which an enterprise gains by applying a given natural resource, between the local or central budget and the direct producer.

When charges are introduced for the use of natural resources in the amount equal to the monetary evaluation of that resources, the whole value of the resources will be accumulated on a fund outside the enterprise. A part of this value should be used as the outlay that serves to support the reproduction of natural resources. The remainder, equal to the sum of arising rents, may, depending on the needs, be designated in part for an increase of accumulation (the exploitation of nature is thereby the direct source of financing development), and in the remaining part for an expanded reproduction of the natural environment. In this variant the management of the funds which arise in effect of the shrinking of natural resources, ought to be left to the local budgets or the central budget. The duty to pay, to the budget, the charges to an amount equal

to the monetary evaluation of a natural resource, allows at the same time to avoid treating the gross accumulation in the enterprise as a homonegeneous whole and defining the expenditure for environmental protection as a deduction from the development fund. For factually a part of the accumulation equal to the sum of rents, represents only a registration of the social costs borne in effect of the shortage of natural resources. Thus the financing of development from that part of the accumulation is, in fact, a deduction from the nature reproduction fund.

The charges for the use of natural resources may be fixed also at a lower level than the monetary evaluation of these resources. The value of the consumed natural resources gets then division into a part that remains in the enterprise and a part that is transferred to the appropriate budget fund. The separation of both parts of the value of consumed natural resources from the accumulation achieved in enterprise should continue to be in force. It seems that the enterprise should keep at least that part of the monetary evaluation of a natural resource which constitutes the amortization of the outlays which serve to support the reproduction of natural resources. Enterprises will have the duty to renovate and to maintain the installations which serve to reduce air and water pollution (treatment plants, filters, control and measurement apparatus). A simple reproduction of the outlays that serve to regenerate the natural resources should be adopted as a minimum condition that must be met when use is made of the funds left in the enterprise. Because of the growing scale of the influence the economy exerts on nature, the outlays used to protect the natural environment should grow constantly. Consequently, they should be established on a level based on the amount of future, prospective monetary evaluation of these resources. In this way an economic activity could be set in motion to reduce the rate of growth of the consumption

of nature, not the one that currently exist but the one that may be anticipated. Such an advance could produce a cumulative saving instead of the intensifying losses noted so far.

The difficult task of separating rents from the gross accumulation of an enterprise should become the principle on which the design of the economic mechanism is based. The point here is to get proper orientation in the sphere of mutual benefits provided by the economy and nature. An accelerated destruction of natural resources undoubtedly have its explanation in the circumstance that the economic mechanism leaves out the monetary evaluation of natural resources. The objectively existing value of natural resources is taken over and used mainly to finance accelerated industrialization and urbanization. This causes growing difficulties in the acquisition of necessary natural resources and raises the value of these goods. The rents growing next on this account serve the further development of production and an intensification of industrial pressure on the nature. Thus the lack of investment for protective installations is only a formal effect of a narrow-minded way of calculation. For actually nature provides economic advantages that are expressed in an increasingly greater value along with a shrinkage of its resources. These advantages, expressed in the sum of the value of consumed natural goods, are sufficient to stop the destruction of nature, if they were used to this aim. The reproduction of natural environment can therefore be a self-financing process on the condition that the rents which express the advantages achieved by the economy, will be separated from the remaining accumulation and designated for investment that protect nature.

The solution of an economic mechanism has an important role to play in the regulation of the dependence that links the economy and nature. Thus we must come out in favour of modifying the principles of the

calculation and of the use of natural resources in production. The charges should be treated as a way of making use of an objectively existing monetary evaluation of these resources. It should be regarded as a part of a gross profit of the enterprise and not as a component of its costs. This way of distributing the income would be more effective and more mobilizing for the producer. The rates of payment should be also updated. For they serve to realize an appropriate policy in relation to the management of nature. Its realization would be shown by the development of the industry which produces means for the protection of natural resources.

A problem of great importance is to maintain the trend of evolution in the mechanism of functioning of the economy toward the development of sensitive tools for an objective verification of the outlays made. The results in this sphere have direct importance for an improvement in the utilization of natural resources in the economy. Without a progress in objective verification of the efficiency of the work outlays, any improvement in the use of natural resources will be only temporary and segmental.

Finally, it is expedient to deepen the problems of the rents under conditions of a socialist economy, making use of various mechanisms of regulation. The point is particularly to: 1) develp tools of a reliable estimation of the amount of the rent and follow the directions of its distribution, 2) establish methods of prognosticating changes in the amount of the rent for planning purposes, 3) disaggregate the total amount of the rent among individual natural resources and individual producers. The correctness of the evaluation of natural resources in terms of money units will be an effect of the progress made in the sphere of the theory of rent.

Notes

1) A. Smith, The Wealth of Nations (polish ed. vol. 1, Warszawa 1954, p. 461).
2) K. Gide, K. Rist, A History of Economic Doctrines, London, 1925.
3) J. Semkow, Karola Marksa teoria ekonomiczna, Warszawa 1983, p. 123.
4) G. Lukacs, Zur Ontologie des Gesellschaftlichen Seins (polish ed. vol. 1, Warszawa 1982, p. XXVII).
5) G. Lukacs, Zur Ontologie des Gesellschaftlichen Seins (polish ed. vol. II/1, Warszawa 1984, p. 165).
6) G. Lukacs, Zur Ontologie des Gesellschaftlichen Seins (polish ed. vol. I, Warszawa 1982, p. 477).
7) K. Marx, Theories of Surplus Value (polish ed. Capital, vol. IV, part 3, Warszawa 1966, p. 215).
8) K. Marx, A Contribution to the Critique of Political Economy (polish ed. Warszawa 1955, pp. 20-21).
9) A method of harmonizing the labour theory of value with the presence of the monetary evaluation of natural resources was to emphasise the role of their preliminary processing by the use of work outlays. Natural resources become commodities when, thanks to the spent work, they take the form required by the economy. In this way attempts were made to harmonize the price of land with the requirements of the labor theory of value. K. Marx quoted T. Hopkin's opinion, characteristic of these endeavoures. "Today's land owners may be considered as the owners of the whole accumulated work which has been spent for centuries now for land to achieve its present-day level of productivity" (Capital, polish ed. vol. IV, part 2, Warszawa 1965, p. 156). The same view, though for different reasons, was presented by F. Bastiat. He thought that out of itself land cannot have a value, and those who recognize this cherish an illusion. "Certainly it may be said: this land is worth, but in fact it is not the land that is worth but the human work that improved it, but the capital that was invested in it" (Economic Harmony, polish ed. Drezno 1867, p. 380). The same conclusion can be found in N. Sukhanov's book (Zemelnaya renta i osnovy zemelnogo oblozheniya, Moskva 1908, p. 63). In the present time, the view that derives the value of natural resorces from the work outlays spent on their improvement, was supported by S. Strumilin (O tsene darovykh blag

prirody, Voprosy Ekonomiki No. 8, 1967).

10) K. Marx, Capital, vol. I, Chicago 1906, p. 227.

11) N. V. Pakhomova, Otsenka prirodnykh resursov kak ekonomicheskaya kategoriya, in: Puti povysheniya efiektivnosti obsuchestvennogo proizvodstva, Fascicle 3, Leningrad 1974, p. 74.

12) Okhrana okruzhayushchey sredy-modeli sotsialno-ekonomicheskogo progresa, Moskva 1982, pp. 21-22.

13) K. Gofman, Metodologiczne problemy optymalizacji procesow wykorzystywania przyrody w gospodarce socjalistycznej, in: Czlowiek i srodowisko. A. Kuklinski ed., Warszawa 1976, pp. 60-61.

14) N. V. Pakhomova, Ekonomicheskoe soderzhanye otsenok prirodnykh resursov i puti ikh kalichestvennogo opredeleniya, in: Sotsialno-ekonomichekye problemy prirodopolzovaniya, Leningrad 1978, p. 100.

15) Of the abundant literature it is worthwhile to mention the works by: M. N. Loyter, Prirodnye resursy i efektivnost kapitalnykh vlozhenii, Moskva 1974, p. 63. A. Bromshteyn, Metodologicheskiye osnovy otsenki prirodnykh resursov, in: Ekonomicheskaya otsenka prirodnykh resursov, Tallinn 1981, p. 44.

16) O. V. Chenyavskiy, Rentnye otsenki i zamykayushchye zatraty, Ekonomika i Matematichekye Metody No. 6, 1984.