

# **POLITICAL RENTS OF EUROPEAN FARMERS IN THE SUSTAINABLE DEVELOPMENT PARADIGM**

**International, national and regional perspective**

Edited by  
Bazyli Czyżewski





This book has been prepared by a team of researchers from six renowned academic centres in the field of agricultural economics in Poland. It aims not only to extend the paradigm of sustainable development and the concept of political rent, but also to present the results of empirical studies carried out using data from 27 EU member states for the years 1995-2014 (some of the analyses also go back to the 1950s) together with Polish case studies. Viewing the EU's Common Agricultural Policy from the standpoint of the theory of rent seeking is a relatively uncommon approach, particularly as the authors draw attention to the need to predefine the concept of political rent received by farmers in a situation where they are supplying public goods.

*The monograph certainly encourages a wide spectrum of readers – researchers, policy makers, students, and society at large – to read and study this publication, as well as to use it in their usual business (...) The authors develop four leading research hypotheses: the first one questions the completeness of the current conceptual approach to political rents in agriculture on the ground that it does not take into account the creation of public goods by the sector. The second hypothesis stresses the need for going beyond the current rent-seeking concept for political rents in the case of sustainable agriculture. The third one states that despite the common – EU wide – agricultural policy, there are still different models of rent seeking in individual countries. The last hypothesis questions the universality of the so-called European Agricultural Model forced by EU policy makers. The verification of these hypotheses in the book certainly brings an additional value to the science.*

Professor Katarzyna Zawalińska



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# Contents

<b>Preface</b> (Bazyli Czyżewski) .....	<b>7</b>
<b>Part 1. The Paradigm of Sustainable Agriculture – Land Rent Versus Political Rent</b> .....	<b>17</b>
1.1. Research challenges for agricultural economics in the new paradigm (Andrzej Czyżewski, Bazyli Czyżewski) .....	18
1.2. From the land rent of the physiocrats to political rent in sustainable agriculture (Bazyli Czyżewski, Jan Polcyn) .....	28
1.3. Interest groups and rent seeking in agriculture – a theoretical approach (Agnieszka Poczta-Wajda) .....	48
<b>Part 2. International Perspective. Sustainable Development of Agriculture and Political Rents</b> .....	<b>59</b>
2.1. The sustainability of agriculture in the European Union against a global backdrop (Walenty Poczta, Agnieszka Baer-Nawrocka) .....	60
2.2. A sustainable bioeconomy in Europe – the European Union’s policy and strategy (Jarosław Gołębiowski, Kazimierz Pająk) .....	69
2.3. Support for agriculture in the European Union and the evolution of the Common Agricultural Policy (1956-2011) (Paweł Błaszczyk, Agnieszka Sapa) .....	82
2.4. Disproportions in the system of support for agriculture in EU countries: an attempt at estimation (Piotr Kułyk, Bazyli Czyżewski) .....	103
<b>Part 3. National Perspective. Towards Valuing Political Rents</b> .....	<b>119</b>
3.1. Flows of rents as an economic barometer for agriculture: the case of the EU-27 (Adam Majchrzak, Sebastian Stępień) .....	120
3.2. Public goods in the Common Agricultural Policy of European Union countries (Katarzyna Smędzik-Ambroży, Marta Guth) .....	131
3.3. Systems of taxation of agriculture in certain EU countries. Universal and distinctive features and an evaluation (Marian Podstawka) .....	141
3.4. Political rents in the EU-27. Comparative analysis (Bazyli Czyżewski, Anna Matuszczak) .....	154

<b>Part 4. Regional Perspective. How to Measure and How to Support Sustainability in Agribusiness?</b> .....	<b>175</b>
4.1. Sustainable development in the Pila subregion (Joanna Strońska-Ziemann, Andrzej Czyżewski) .....	176
4.2. Human capital in agribusiness as a factor in sustainable development – problems of measurement in the case of firms in the agri-food sector (Firlej Krzysztof, Karolina Palimąka, Mateusz Mierzejewski) .....	190
4.3. The effects of payments for public goods on farmland prices under SAPS (Bazyli Czyżewski, Radosław Trojanek) .....	210
4.4. EU Common Agricultural Policy and the development of agrotourism: a case study (Agnieszka Brelik, Aleksander Grzelak) .....	222
<b>Summary: Political Rents and the European Model of Agriculture</b> (Anna Matuszczak) .....	<b>238</b>
<b>Bibliography</b> .....	<b>245</b>
<b>List of Tables</b> .....	<b>267</b>
<b>List of Figures</b> .....	<b>269</b>



## 1.2. From the land rent of the physiocrats to political rent in sustainable agriculture

(Bazyli Czyżewski<sup>6</sup>, Jan Polcyn<sup>7</sup>)

### Land rent as a prototype of economic rents<sup>8</sup>

Since the early days of economics, economic rents have been linked to the land factor. D. Ricardo developed a theory of differential rents relating to the fertility of land; the theory of absolute rent emphasised the monopoly of ownership rights to land; marginal economics addressed the issue of location rents; and in neoclassical economics rents were ascribed exclusively to the inelasticity of the supply of land. Something that economic rents and the land factor certainly have in common is that both fail to fit the neoclassical models of equilibrium. Economics textbooks list three production factors – capital, labour and land – but many economists would immediately add that the third of these, land, is a constant. M. Blaug states that “modern economics has abandoned the notion that there is any need for a special theory of ground rent. In long-run stationary equilibrium, the total product is resolvable into wages and interest as payments to labour and capital – there is no third factor of production...” (Blaug 1997). If so, then the resources and inputs of agricultural land should be subject to the optimising mechanisms of the market – but why, then, is agriculture such a problematic sector of the economy?

Economic rent is the excess income which provides incentive for a production factor to provide services. It arises in a situation of persistent scarcity of resources, or the impossibility of a resource being valued by the market and taken into account *ex ante* in the economic calculation. If a resource is valued by the market, and its relative supply can be increased, then the economic rent vanishes and becomes a cost. In the case of land rent the rewarded factor is agricultural land the supply of which is limited, even though its production capacity can be increased thanks to technical progress.

Since the 18th century there has been no agreement among economists as to the sources of land rent. Simplifying to a large degree, the problem can be reduced to the question of whether the substance of rent is created by the productivity of the land, or by a subjective perception of the exchange value of that resource, which results

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<sup>8</sup> Use has been made of parts of Czyżewski (2013) in English translation.

exclusively from the scarcity of the land factor. Regardless of the answer to this question, land rent is taking on an ever greater importance in agricultural economics, because it conditions the processes of extended reproduction in agriculture and the restructuring of that sector. According to many authors, the contemporary agrarian question can be reduced to the problem of the realisation of land rent in agriculture (Czyżewski 2005). This importance is underlined by the strong upward trend in prices of agricultural land in the countries of Central and Eastern Europe.

In market conditions the reduction of the land rent to zero, or any long-term downward trend, would appear to be impossible, because growing demand for land in the long term will, in the author's view, ensure the absolute scarcity of that resource. Land ownership fulfils too many non-production functions, historically rooted in people's mentality – it is a determinant of the territorial sovereignty of nations, a measure of social status, the most durable form of accumulated property. Expectations of an upward trend in land prices in the long term can therefore be considered rational. Land fulfils the three economic conditions ensuring growth in the price of a resource in the long term – it is useful, it is scarce, and there are no substitutes for it. Land rent, in view of its permanence, may become a fundamental source of comparative advantages of the agricultural sector, which might be protected from the process of economic globalisation.

The contemporary importance of the category of land rent is not reflected in academic work on the subject. The theory of land rent developed rapidly in the 18th and 19th centuries, with key chapters of scholarly works being devoted to it – this even made it possible to talk about the question of land rent, being a fundamental source of economic surplus, for example with reference to F. Quesnay's theory of pure product. The scarcity of the land factor attracted the attention of economists in the early 18th century, particularly among the physiocrats, who considered land rent to be the only type of pure product created by farmers and realised by landowners in the form of leasing payments from tenants. The physiocrats' theory includes the assumption of zero accumulation by the "sterile class", in which average profits were reduced through competition to zero, and rents did not occur. The physiocrats, however, merely stated the fact of the existence of land rent in agriculture, without attempting to explain its source. Moreover, the concept of the *produit net* of agriculture as the sole source of income was not treated seriously by classical economists. For example, Adam Smith wrote: "That system which represents the produce of land as the sole source of the revenue and wealth of every country has, so far as I know, never been adopted by any nation (...) It would not, surely, be worthwhile to examine at great length the errors of a system which never has done, and probably never will do, any harm in any part of the world." (Smith 1954). Similarly, until the 1970s, that is, until the award of a Nobel prize (in 1973) to W. Leontieff, the "economic table"

of F. Quesnay was neglected. A. Gray wrote that it was in its time the crowning achievement of Quesnay and the school of physiocrats, “now perhaps better reduced to an embarrassed footnote (...) it may be doubted whether it will ever be anything but a vast mystification” (Gray 1948).

Contemporarily, as we know, the table of intersectoral (input-output) flows is a foundation stone of well-known and useful models of prediction (Galbraith 2011). In a certain sense, history has come full circle. Bearing in mind the great importance that developed countries currently attach to agriculture, it can be seen that mainstream economics has been guilty (not for the last time) of the sin of immodesty in the face of the unknown.

The physiocrats, however, did not attempt to analyse the situation in which the agricultural producer is also the landowner and does not realise a rent. Who then takes over the rent, and what are the economic consequences of this for agriculture and for the economy as a whole? These are among the key dilemmas encountered by the theory of land rents, and it must be noted that today they are taking on an ever greater significance.

In the 20th century, however, all that happened was a review of the phenomenon of the occurrence of land rent, according to either the neoclassical or Marxist theory. Keynesian economics disregarded the problem entirely, accepting the existing theories wholesale. In his *General Theory of Employment, Interest and Money*, Keynes referred only to a “quasi-rent” as a reward for the postponement of consumption (Keynes 2003).

The institutionalism of the 1930s did not make any attempt to modify the existing theories, and broad mainstream economics emphasised the marginalist or neoclassical concepts. Economists who addressed the agrarian question – K. Kautsky and E. Bernstein in the early 20th century, T.W. Schultz in the 1950s, and M. Mieszczankowski, J. Lewandowski, H. Chołaj and M. Pohorille in Poland in the 1960s – considered the problem of land rent very widely, but within the Marxist paradigm<sup>9</sup> (see also Lewandowski 1960, Mieszczankowski 1964). Similarly, in New Classical Economics and the neo-Keynesian theory no separate analyses are made of rents of the land factor. At present, economics textbooks generally present the Pareto concept of land rent (reformulated by P.A. Samuelson) or else omit the question entirely. A characteristic view is the one of M. Blaug, cited above, that there is absolutely no need for a special theory of land rent (Blaug 1997).

Such a vision of the functioning of the economy is based on a fully predetermined model, in which it is stated from the outset how market players adjust their decisions

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<sup>9</sup> An exception is the work of T.W. Schultz, who showed, with reference to the American economy, that the importance of land rent as an element of inputs would rise despite the process of industrialisation of agricultural production (Schultz 1953).

and how the resulting allocation of resources changes over time. In this model no account is taken of individual creativity, structural changes, the evolution of needs, and especially the possibility of reversing the hierarchy of values on which choices are based. R. Frydman and M.D. Goldberg point out that a fully predetermined model forces the researcher to adopt qualitative limitations at the starting point of the analysis, such as an assumption of diminishing marginal utility. Based on these qualitative limitations, however, precise quantitative forecasts are produced, and the model theoretically retains its properties at different points on the time line. This creates a “semblance of precise knowledge”, and the imprecision and uncertainty is reduced in the model to the probabilistic form of a random component, which is an excessive simplification of these phenomena (Frydman, Goldberg 2009). In the light of this, the cited assertion that the product of the land in the long term melts away into pay and interest represents the reistic assumption that human labour (including capital as its objectified form) is capable of satisfying all human needs, given sufficient time.

The issue of land rent was again overlooked in the discussion on the economic role of the state, which took place in the mainstream of economics following the departure from the Keynesian doctrine in the 1970s. Like the earlier belief in the “tuning” of the economy using instruments of fiscal and monetary policy (see also Heilbroner, Thurow 1981), similarly the mainstream negation of the active role of the state was total in nature, in the sense that it applied to all production factors, including land. No consideration was given to the case of specific external effects and public goods produced in agriculture, which would have justified the application of discretionary national policy with respect to that sector (Wojtyna 1988).

In consequence, in the history of economic thought one can identify four alternative concepts of land rent: the Ricardian differential rents, the “Marxist” absolute rents (referring to Adam Smith), the residual rents of H. George (viewed as marginal rent of scarcity), and the neoclassical rents of inelastic supply of land (Czyżewski B. 2010). Perhaps up to the time of Agenda 2000, which sanctioned the need for changes in the industrial model of agriculture in the European Union, the above theories were sufficient. It is the author’s view that in the current era of transformations in the model of agriculture in developed countries there is a need for a new concept of land rent, which can be constructed based on the methodology of contemporary institutional economics. The neoclassical theory of rent generally presented in the subject literature is insufficient to describe reality, because it reduces the sources of land rent to the inelasticity of supply of land and treats it as a constant in economic models.

## How did land rent become a political rent?

Land rent took a permanent place in the annals of political economy through the agrarian question and the resulting need for the retransfer of income to agriculture. To quote J. Wilkin, “(...) the agrarian question can be most simply and most briefly defined as the problem of the lack of adjustment of agriculture, in terms of its structure and mechanism of functioning, to the situation existing externally” (Wilkin 1986). The main symptom of the agrarian question is the disparity in the incomes of the agricultural population, linked to the low productivity of the factors of production, particularly labour, and the insufficient elasticity of productive structures in terms of adjustment to changing market conditions. In the induced development model, Y. Hayami and V. Ruttan nonetheless attempted to show that such adjustments take place as a result of dynamic interactions between agriculture and related sectors, triggered by innovations which upset equilibrium prices. As a result of technological development, there are changes in real prices which “induce” the adjustment of productive structures in agriculture, because agricultural producers are guided by rational criteria (Hayami, Ruttan 1985). In this way, according to J. Wilkin, agriculture theoretically has the ability to participate in both “the feeding of sources of economic development, and the division of the benefits” (Wilkin 1986), but this does not happen if imperfections of the market (such as price flexibility) deform market signals.

The scale of market imperfection is closely linked to a country’s level of economic development. Partly because of this, in the early stages of economic development agriculture co-finances the development of the national economy as a whole, in the sense that a significant part of the added value produced in that sector flows out to non-agricultural sectors. At more advanced stages, at first an equalisation of the streams flowing out of and into agriculture occurs, and later it becomes a net beneficiary, taking over part of what has been accumulated from non-agricultural sectors. “Only in such conditions is there a possibility of growth in the competitiveness of native food producers in foreign markets and the obtaining of benefits from the liberalisation of trade in agricultural products. However, reversal of the aforementioned sequence may be a source of serious social conflicts, because an unprepared agricultural sector comes up against structural and investment barriers that it is not able to overcome” (Woś 2003).

In Poland, the agrarian question visibly arose in the first decade of the systemic transformation after 1990. In the 1990s there was a widening of the disparity between agriculture and other sectors. This was reflected in a declining relationship between the surplus and disposable incomes of individual farms, and the surplus and incomes of entities outside agriculture. At the same time there was a decrease in the ratio of

disposable incomes in agriculture to the added value generated. According to Woś, these processes represented “the flow of agriculture’s added value to non-agricultural sectors”, which is the fundamental ground for agricultural interventionism (Woś 2003). The thesis of “surplus drainage” from agriculture is commonly put forward in the countries of Central and Eastern Europe. For example, A. Czyżewski and A. Matuszczak conclude that “in countries with stable and sustainable economic growth, it has long been noticed that it is necessary to retransfer to farmers that are part of the surplus which flows out of agriculture (...)” (Czyżewski, Matuszczak 2005). Elsewhere, A. Czyżewski explains that “the depreciation of agriculture in intersectoral flows is evidenced by the fact that realised production is smaller than output” (Czyżewski 2007).

An undoubted weakness of such claims of “surplus drainage” is that they can be verified only on the basis of input-based theories of value (such as those based on labour). How is it possible to define the “part of the surplus which flows out of agriculture”, the difference between “realised production” and actual output, or even the actual disposable income of a farm (after payment of all production factors)<sup>10</sup>? Data concerning the current surplus of the agricultural sector are available, and are objective. Nonetheless, it is hard to state definitively what part of this surplus has already flowed out; in other words, what would the surplus be if agriculture were not depreciated by the market? At most one can attempt to value the inputs provided (paid for in agriculture out of the surplus), namely own labour and the costs incurred “for the land”, and then compare their value with the realised surplus. Such an approach has two defects: firstly, in a market economy the output is generally not the sum of the inputs; and secondly, the land factor is deprived of its “subjectivity” when its value is defined on the basis of labour and capital inputs. This is analogous to the thesis, known from the history of economic thought, that “capital is objectified labour” – but even less realistic. It should be noted that input-based methods of valuing land rent were criticised in Poland even in the 1960s, although the basis for that criticism was not related to the labour-based theory of value (Chołaj 1966, Czyżewski, Grzelak 2012).

Is it possible, then, to prove the claim of “surplus drainage” in a more objective manner, and consequently to provide justification for the necessity and scale of budgetary retransfers to agriculture? There is a significant gap in economic theory here, because despite the symptoms of depreciation of agriculture relative to other sectors, difficulties arise in precisely defining and quantifying that mechanism. There is therefore a lack of an adequate theory of land rent, which as we can see,

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<sup>10</sup> The problem arises here of the valuation of own labour and land rent, which in individual agriculture are paid out of the surplus.

has no wish to “melt away into pay and interest”. The excessive simplification contained in this reasoning results from the fact that the utilities supplied by land do not necessarily come from labour. If that were so, M. Blaug would be entirely right, and the reference point for an “optimum” level of surplus in agriculture would be the average productivity of labour in the economy. The key to solving this problem is therefore assigning to the land factor its own “subjectivity”, namely the ability to create certain utilities by itself without the involvement of labour or capital. In this way, it would be shown how land is genuinely distinct from the other productive factors.

The paradigm of sustainable development is helpful here, which in fact accepts such an approach. Sustainable development is a concept of order integrated in the environmental, social, economic, spatial and ethical planes, which assumes the maximisation of benefits from economic development subject to ensuring the durability and protecting the utility of natural resources in the long term (Woś 1998; Fiedor, Jończy 2009). This concept identifies natural resources as an independent production factor, which is subject to different criteria of effective allocation than labour and capital, at the very least because it does not produce private utilities, only public and common ones. These are inseparably connected with the land factor, which at the same time constitutes a potential resource for agricultural production. In the existing model of agriculture in developed countries (the post-industrial model), agricultural production and the creation of environmental utilities represent competing functions of land. From the point of view of sustainable development, over time those functions should become complementary, which requires the development of new theoretical frameworks for the economics of the land factor, and in particular a new theory of land rent. This theory should explain the relationships between the agrarian question, including the phenomenon of rent drainage, and the new integrated functions of the land factor in the context of the sustainable development paradigm. Existing theories of land rent value the rent in a manner that is not adequate to the contemporary utilities of land, and as a result do not enable an objective estimation of rent “drainage”.

### **Efficiency-based and monopolistic motives for rent seeking**

Rent seeking, according to some authors, means the loss of resources in a process of attempting to gain a monopolistic rent. Some economists believe that it is chiefly in this way that rents affect the allocation of resources (see also Sztaba 2002) and stimulate processes of vertical integration, the goal of which is the occupation of a dominant market position. The motives for rent seeking are therefore of a monopolistic nature (Raczyński 1998).

The scale of the phenomenon of economic rent seeking might therefore be quantified by estimating the size of the consumer's rent that is taken over by monopolists in a given industry. Another method used is calculating the losses in the whole of the economy caused by the existence of monopolies. In both methods, however, it is assumed that rent seeking is a negative phenomenon, being associated with political lobbying or even corruption (Sztaba 1998). Institutional economics nonetheless challenges that view, drawing attention to what can be called efficiency-based motives for rent seeking. The driving force behind seeking rent may be striving to optimise transaction costs.

In the 1950s, A.C. Harberger calculated that the social costs of monopolies are in fact insignificant, amounting to less than 0.1% of GDP (Harberger 1954). This also provides support for the claim that motives for vertical integration are not only monopolistic in nature, but can also be related to efficiency.

E. Katz and J. Rosenberg showed that the higher a country's level of development expressed in GDP per capita, the lower the degree of active rent seeking (Katz, Rosenberg 1989). On the other hand, in the Anglo-Saxon models of the market economy (Albert 1994), there is a dynamic rise in transaction costs and society incurs the costs of disintegration. Citizens are required to participate more and more in activities which increase the domestic product, but not necessarily well-being. Although transaction costs of growth are unavoidable, they do not serve well-being. Some of the growth consequently has the nature of an idle gear. In such conditions, rent seeking becomes an inevitable mechanism of defence against various forms of exclusion in a polarised society (Sztaba 1998).

If rent seeking involves increasing outlays on the "internal" organisation of transactions, but this action has the goal of optimising transaction costs, then social losses do not occur, or else are compensated for by the increase in the producer's rent and the exchange value of goods. It is also argued that sectors with a high degree of consolidation feel a much smaller need for state intervention. This is because they are able to generate economic rents by using their market potential. A parallel process, however, is the intensification of lobbying, directly proportionally to the degree of consolidation of the sector.

Modern institutional economics sets itself the goal of integrating the neoclassical theory with an analysis of the way "in which institutions modify the set of choices available to individuals" (North 1986). In this way methodological individualism, which ascribes the feature of potential rationality to individuals, combines with structural determinism (path dependency), which acquires significance in systems with a large degree of uncertainty, in which market failures accumulate. Theoretically such failures always occur when the market cannot distribute every unit of a shared resource in such a way that the benefit resulting from its switch to another use is



exactly equal to the loss related to its withdrawal from the alternative use. According to institutional economics, transaction costs are among the key types of market failure, and their size reflects the level of the market's inefficiency.

There is no doubt that the level of market failure and imperfection in agriculture is high. Non-optimal allocation in the food economy is caused by the natural rigidity of demand for food, the inelastic supply of raw agricultural products, and the low mobility of assets in agriculture. This means, among other things, that agriculture in Poland is characterised by overpopulation and irrational use of agricultural production space. At present around 17% of the working population is connected to agriculture (compared with just 5% in the "old" member states of the EU-15). Opportunities for the development of Polish agriculture must be sought in improving labour efficiency and the quality of agricultural products, which is forced by the cross-compliance principle realised under the CAP (Leopold 2002). The goal of structural changes in Polish agriculture is therefore to increase labour efficiency or reduce labour intensity, to initiate a process of extended reproduction, to bring about the accumulation of land rent, and to increase the rural population's contribution to the country's economic development. This growth should result to a large extent from the diversification of the sources of agricultural incomes. It should be noted that in the "old" EU-15 member states agriculture accounts for about 5% of the total working population, who produce about 2.0% of GDP. In Poland agriculture accounts for around 17% of the working population, but also currently produces about 2.0% of GDP, counting the added value of agriculture excluding CAP subsidies, or approximately 4% including subsidies.

An effect of the market failure in the agricultural sector is the need for the state to operate a large-scale policy of agrarian interventionism (although there are some economists who would say that this is not an effect, but the cause). It is shown, however, that the retransfer of incomes to the agricultural sector is justified to a large extent by objective economic arguments resulting from the theory of optimisation of transaction costs (see also Czyżewski 2005). A higher degree of contractual integration (vertical and horizontal) of productive structures in the Polish food industry, for example in pig and dairy production, increases the added value realised on individual farms and initiates processes of high-capital intensification of production. This phenomenon, however, could take place on a wider scale. These processes are theoretically stimulated by flows of capital from agriculture-related sectors to farms, made possible by savings of transaction costs in the processing sector and by the increased share of agricultural producers in the processing margin. This is therefore a complementary mechanism to the budgetary retransfer of profits to agriculture, and may ameliorate the problem of rent seeking as agribusiness develops.

To sum up, the motives for rent seeking and related actions in the food industry may be efficiency-related, serving to produce savings of transaction costs. From a theoretical standpoint, the mechanism operates as follows: an economic rent occurs if average productivity is higher than marginal productivity. In the market for final goods the average takings are higher than the marginal value, and the sale price is higher than the equilibrium price. Classically, this phenomenon is explained by a monopoly rent. However, if it is assumed that the lower marginal cost results from the optimisation of transaction costs (and an increase in efficiency), the producer realises a rent. Transaction costs are not, by assumption, subject to market valuation. In terms of factors of production, if the average product of labour is greater than the marginal product of labour (equal to the unit price of inputs), then either we are dealing with the rent of a monopsony, or we explain the phenomenon by a fall in transaction costs.

The above considerations also imply that, regardless of the motivations, rent seeking does take place in the food industry. The accumulation of market imperfections in agriculture means that this involves the seeking of land rent. The market environment, in view of the rigidity of demand and supply in the agricultural sector, takes over the effects of the growth in the real productivity of agriculture, thus realising economic rents. Perhaps these compensate for higher transaction costs which are not subject to market valuation – this is another matter. It may also be disputed to what degree rent seeking is stimulated by inappropriate national regulations rather than market inefficiencies. It is nonetheless a fact that the process of the creation and division of economic rents in the food industry is determined by the land rent. Other rents in the system of the food industry outside agriculture undoubtedly also occur, but they are short-term in nature. Only land rent is a timeless phenomenon. For this reason the process of its creation and division deserves to be given particular attention.

### **Rent seeking and the paradigm of sustainable development**

In the previous section, doubt was cast on the monopolistic motives for rent seeking in the food industry. Apart from these, an important role is also played by efficiency-related motives, which lead to contractual integration for the purpose of achieving savings of transaction costs. The problem of transaction costs takes on particular importance when we recognise that agricultural land provides not only raw agricultural products, but also public goods (Klimowicz, Bokajała 2012). The concept of public goods here is generalised to some extent. In economic theory four types of goods are distinguished: private, common, club and public. The classification is made based on four features: “rivalrousness”, “non-rivalrousness”,

“excludability” and “non-excludability”. In a narrow sense, public goods are those which are non-rivalrous and non-excludable (Ulbrich 2003). For our purposes, however, it is necessary to broaden this definition, above all to include:

- rivalrous goods, because an increase in the consumption of utilities of the well-being of the natural environment may negatively affect its remaining utility;
- merit goods, related to the multifunctional nature of agriculture<sup>11</sup>.

In some cases the utilities provided by the land factor may also have the status of club goods<sup>12</sup>. Hence we take public goods also to include common goods related to the agricultural land factor, merit goods related to the multifunctionality of agriculture, and in certain cases also club goods<sup>13</sup>.

The well-being of the natural environment and rural areas can be regarded as common property, namely such that is not assigned to specific parties and thus cannot be transferred. Environmental resources are therefore exploited on a “first come first served” basis, and the related costs and benefits are hard to value objectively and assign to specific users. Any attempt to value them gives rise to high transaction costs, but failure to do so also generates transaction costs *ex post*, related to, for example, the repair of the effects of inappropriate exploitation of resources or the budgetary redistribution of the rents of the land factor which agriculture has “lost” to other sectors.

It is a matter of debate what in fact creates the new utilities of the well-being of the natural environment. Is it land “intrinsically”, or are capital and labour also involved? The authors propose the thesis that there are intrinsic utilities of the agricultural land factor. The aim of our further deliberations will be to justify this claim.

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<sup>11</sup> Merit goods are those that have a social utility that is greater than their individual utility. J. Wilkin points out a number of non-commercial functions of agriculture: “green” functions – management of land resources for the maintenance of its valuable properties, creation of conditions for wild animals and plants, protection of the welfare of animals, maintenance of biodiversity and improvement of the circulation of chemical substances in systems of agricultural production; “blue functions” – management of water resources, improvement of water quality, flood prevention, production of hydrothermal and wind energy; “yellow” functions – maintenance of the coherence and vitality of rural areas, maintenance and enrichment of the cultural tradition and identity of the countryside and regions, development of agrotourism and hunting; and “white” functions – assurance of food security and food safety (Wilkin 2010).

<sup>12</sup> They then have the features “non-rivalrous” and “excludable”. This applies to all types of concessions and permits to use specified utilities of the well-being of the natural environment – for example, for the operation of distilleries, drilling for mineral water, tree felling, economic activity in national parks, hunting, angling, etc.

<sup>13</sup> Public goods in the narrow sense will be called “pure public goods”.

To begin with, however, it should be considered whether the concept of sustainable development deserves the status of a “paradigm”, and what place agriculture takes in it. The concept of sustainable development has been described as a new paradigm by many authors (Borys 2009, Morozova 2009). This view is also well established in studies by international institutions, in particular in the 1987 report of the World Commission on Environment and Development – the Brundtland Report – and in the EU Sustainable Development Strategy adopted by the European Council in 2001.

Sustainable development is defined more broadly than simply in terms of the precedence of ecological over economic requirements (Borys 1998), creating concepts of an integrated order over the environmental, social, economic, spatial and ethical planes. Quoting B. Fiedor and R. Jończy, sustainable development “involves a maximisation of the net benefits from economic development, at the same time protecting and ensuring the reproduction of the utility and quality of natural resources in the long term. Economic development must then mean not only growth in per capita income, but also improvement of other elements of social well-being. It must also include necessary structural changes in the economy and in the whole of society” (Fiedor, Jończy 2009, Pearce, Turner 1990). This definition alludes to the original idea contained in the aforementioned Brundtland Report, to satisfy the aspirations and needs of today’s generations without limiting the possibilities of satisfaction of the needs of future generations<sup>14</sup>.

It is clear how the foregoing definitions can be applied in agricultural economics, on the assumption that the utility and quality of all natural resources is inseparably linked to the land factor, which at the same time constitutes the principal resource in agricultural production. Adding to this the fact that most of the world’s population lives in rural areas, it might be concluded that problems of social and economic balance are also concentrated in the agricultural sector. It is easy to show that the problems of an integrated order are particularly linked to that sector. Agriculture has an impact on most ecosystems and to a large extent determines the quality of natural resources, but also the “quality” of human capital, because it supplies products the consumption of which is forced – namely foodstuffs, in a broad sense. The agricultural sector is also a key element of the social (including political) and economic order.

Social order is defined by, among others, such factors as rural culture and tradition – elements of the well-being of the countryside, the rural population’s access to infrastructure and services, waves of rural-urban migration, diffusion of knowledge and technical progress in rural areas, and the participation of the agricultural sector

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<sup>14</sup> In that report sustainable development is defined as a “path of human progress which meets the needs and aspirations of the present generation without compromising the ability of future generations to meet their own needs” (Estes 1993).

in national economic development, which is the greater the less highly developed a country is. From a global perspective, however, it is agrarian interventionism that has been and continues to be a bone of contention in the forum of the WTO. Representatives of less developed and developing countries take the position that the developed countries' subsidisation of agricultural production and protectionism in markets for raw agricultural produce block their development and processes of convergence with the developed countries. It also upsets the environmental order in developing countries, because they are forced to rapidly increase the efficiency of agricultural production at the cost of natural resources.

As regards the creation of an economic order, agriculture can again be distinguished from other sectors, because on the one hand it is a strategic sector, while on the other it does not have functional self-regulating market mechanisms. Developed countries, despite an extensive range of instruments of agricultural policy, remain unable to solve the problem of disparity between agricultural incomes and those of other sectors.

In the light of all this, the paradigm of sustainable agriculture is fundamentally an elaboration of the paradigm of sustainable development. This is confirmed by selected definitions of the integrated orders – economic, social, and environmental – as used in agricultural economics (see Table 1.1.). Long-term forecasts tell us that agriculture of the 21st century will be increasingly environmentally sustainable; it will nonetheless remain unbalanced in economic terms, as this results from processes which by nature involve the continuous destruction of the achieved balance and the attainment of a new one, on a new and higher level. Nonetheless, these processes will be subjected to ever stricter environmental requirements. The social aspect will thus be “torn between globalism and locality” (Zegar 2007).

From the paradigm of sustainable agriculture comes the following message: natural and social capital (including public goods) can only to a limited degree be replaced by human-made capital, and the degradation of natural and social capital cannot be compensated for by the benefits provided by human-made capital (Jeżowski 2009).

In reference to this thesis it may be noted that in the conditions of the new paradigm, the land should create certain utilities “intrinsicly”, that is, without the participation of capital. Land cannot therefore be treated in accordance with the mainstream economic doctrine as just another type of fixed asset, with neoclassical microeconomic concepts applied to the optimisation of its inputs. The foregoing also implies that the productivity of natural resources cannot in all conditions be increased by means of the substitution of capital.

**Table 1.1.** Definitions of sustainability of the economic, environmental and social orders under the paradigm of sustainable agriculture

Author	Economic (productive) order	Social order	Environmental/ecological order
M. Adamowicz	Production in sufficient quantities with acceptable quality and good efficiency.	Provision of satisfactory conditions for the population living in the agricultural and rural environment, both in terms of level of incomes and in terms of social status and place in contemporary societies.	Absence of pollution, but above all the valuing of natural resources.
A. Harasim	Creation of <i>agricultural income</i> ensuring a decent quality of life for farmers and their families and enabling <i>farm development</i> . Creation in appropriate quantities of agricultural products with the qualities required by the consumer or the processing industry.	Creation of agricultural income <i>ensuring a decent quality of life</i> for farmers and their families and enabling farm development.	Assurance in the long term of a balanced agrosystem and avoidance of degradation of the natural environment.
L.H.G. Slangen	The economic dimension is the ability of agricultural productive potential to satisfy society's food needs.	The social dimension is linked to a system of institutions (formal and informal) laying down principles that guarantee to the whole of society food security and the protection of nature.	From an ecological perspective it is important that the agricultural sector be able to maintain the resources of the natural environment in good condition.
J. S. Zegar	On a microeconomic scale, the delivery of a satisfactory income, which means that satisfaction occurs when there is parity between agricultural and non-agricultural incomes. On a macroeconomic scale, gross added value and the value of agricultural production, particularly commercial production.	Valuation of environmental services, use of agricultural labour resources, contribution to the maintenance or development of the economic and social vitality of the countryside and of cultural values.	Adherence to a code of good agricultural practices and consideration of legal and administrative criteria in the granting of support from public funds.

Source: Based on Matuszczak (2009)

Similar doubts arise regarding the process of substitution of capital for the labour factor in the context of the problem of hidden unemployment in rural areas and the so-called “storage” functions of agriculture in the period of systemic transformation in Poland. It is hard to speak about a labour-intensive model of agriculture in Poland, because the degree of intensity of organisation of agricultural production, measured for example by Kopeć's index (Kopeć 1984), is low. Following the first five years of transformation, the population of redundant persons in agriculture was estimated at 916,800, of whom 48% were classified as “totally redundant”, and thus by the

nature of things excluded from processes of substitution (Błąd 2010). This means that capital-intensive progress, in the sense of interdependent processes of growth of the resource of capital and reduction of the resource of labour, is a debatable development scenario for agriculture in Poland and other countries of Central and Eastern Europe that face similar problems.

### **Capitalisation of the intrinsic utility of land in its market value**

From the start of human civilisation, land has created certain utilities satisfying that civilisation's needs. These arise without the participation of other factors of production, constituting an unquestionable gift of nature. In his encyclical *Caritas in Veritate*, Pope Benedict XVI describes it as a “miraculous fruit which human beings may use responsibly so as to satisfy their rightful needs – material and immaterial – with respect for internal balance” (Czyżewski, Matuszczak 2012).

In tribal (natural) economies, where agricultural land in today's sense did not exist, examples of such utilities were forest fruits, hunted animals, and access to water and firewood. The creative role of the land factor in providing these was dominant over the required inputs of labour and capital. It can therefore be stated that the dominant part of the utility of land arose intrinsically. When land came to be cultivated and animals domesticated, the part ascribable to nature decreased slightly in favour of the active role of human beings. Increments in the mass of plants and animals, building materials, and broadly-defined living space were nonetheless still obtained with minimal inputs.

In the feudal system, a kind of legitimisation of the intrinsic utilities of land can be seen in “servitudes”, understood as the right to make use of the natural utilities of land belonging to the feudal lord (in the form of brushwood, fruits, clay, or fish).

As the money-goods economy developed, that part of the utility of the land factor which arose without the participation of capital and labour was transformed into “intrinsic productivity” (in money terms). This is expressed, for example, in the previously mentioned concept of *produit net* proposed in the 18th century by the physiocrats.

Hence, in the peasant economy, the part of the utility ascribed to the exclusive action of forces of nature (land) was relatively large, and was also expressed in a certain part of the cash productivity of the economy (since it created part of the product without inputs). Its importance began to decline in the face of the industrialisation of agriculture and activation of the law of diminishing marginal utility. In industrial agriculture the intrinsic contribution of land to the creation of utilities decreased in favour of capital and hired labour. The intrinsic cash productivity of land also vanished to a significant degree.

With time, however, the productive functions of agricultural land, subordinated to microeconomic optimisation, and the requirement for it to satisfy existential needs, became mutually competitive. This led to the need to seek a new concept of economic development.

To what extent does the assertion of the existence of an “intrinsic utility of land” hold in the context of the paradigm of sustainable development? One of the reasons for the development of this paradigm is the fact that in developed countries the natural environment has become almost completely anthropogenic. In such conditions there must also be a change in the way of using natural resources. This is enforced by new needs and priorities – for example, the desire to ensure the renewability of natural resources. These uncover anew the “utilities” of the land factor which were marginalised in industrial agriculture, assigning them the status of public goods for which the whole of society should pay. This cannot, however, be the same intrinsic utility of agricultural land as in the 18th century, because, at least in developed countries, the natural environment has been changed overwhelmingly by human action. An increasing part of the utility of land is again coming into being intrinsically, but in conditions of far-advanced and irreversible accumulation of capital. It can therefore be said that in sustainable agriculture many new utilities of the land factor are created intrinsically, that is, without additional inputs of capital and labour (but not without them playing any active role whatsoever). Since these have the nature of public goods, they are paid for largely out of taxes (through the CAP in EU countries)<sup>15</sup>, and that payment goes to the owners of the land resources which created them. In this way the intrinsic utility of land takes the form of an economic rent, which increases the cash productivity of farms and is discounted by the market for agricultural land and through prices of certain products (e.g. organic products).

For example, the extensification of the cultivation of meadows under agro-environmental programmes makes it possible to reduce capital and labour inputs and to pay an economic rent under the CAP. This rent is sometimes erroneously interpreted as compensation for reduced productivity. It should be noted, however, that even if in terms of value it scarcely compensates for the lost productivity, this occurs in conditions of lower inputs of capital (working capital and depreciation) and labour. Thus, in effect, the cash productivity of the factors of production (understood as the ratio of the cash product to the inputs) increases. This increase can be ascribed to the creative force of nature (land), since a lower intensity of management activates its natural utilities, which are of the nature of public goods. In the cited example of the extensive cultivation of meadows, these utilities will include, for example,

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<sup>15</sup> Given an adequate level of social awareness, these utilities can also be paid for through prices of products and services.



increased biodiversity, landscape and recreational values, and a more “ecological” raw material (hay).

Another example is organic farming. In this case capital inputs are reduced with the substitution of labour inputs, this being a condition for obtaining the aforementioned rent from the CAP. Given adequate social awareness, the fall in productivity here may be compensated for by an increase in the prices of organic produce. However, the rent received from the CAP is remuneration for new utilities of land and, as above, increases the cash productivity of the factors of production. Analogous reasoning may be applied to other subsidies given under the CAP. In the author’s view, the CAP programmes represent an attempt to value the intrinsic utilities of land that have the nature of public goods. Rent on this account is received by the owner of the resource or by the user, who passes it on in the form of payments for the lease of land. The user is nonetheless required to enable (or at least not obstruct) the creation of those utilities by the land.

To recap, agricultural land creates some utilities intrinsically, these being subject to institutional valuation (through rents paid under agricultural policy) or valuation by the market (through the prices of products), insofar as the intensity of the agricultural economy is limited to some degree. This, however, is conditioned by a specified level of “original” accumulation of capital, which means that the economy has reached a stage in its evolution where society voices a demand for those utilities.

This “original accumulation” should be understood here in a broad sense. It includes technological progress, advancement of processes of urbanisation, development of infrastructure, standard of living, as well as the attained level of spatial management, agricultural culture and cultivation of land. Referring to the cited example of meadows, one must not forget that it was through many years of cultivation that those meadows (in today’s meaning) came into being, and neglect to prevent the secondary succession of vegetation (encroachment of bushes and trees). In this case the essence of the utility of the land is the meadow ecosystem. This is so unless secondary succession is a conscious choice, having the aim of enabling the land to create other utilities – for example, non-cultivation of land in the buffer zone of a national park.

The driving force here, then, is the demand side. As an effect of its action, a multifunctional model of agriculture is formed, delivering public goods as side effects of agricultural production. These include, according to A. Vatn: environmental factors (landscape, biodiversity, pollution, recreation, cultural heritage, food and nutrition security) and factors relating to rural life such as settlement models and rural culture and tradition (Vatn 2010, Falkowski 2010).

We can therefore conclude that at present, the reason for the existence of land rent are the intrinsic utilities of the land, which in a money-goods economy cause

the expected productivity of capital in agriculture to be higher than in related market sectors. These expectations are largely connected with the political rents received by agriculture, and hence with the phenomenon of rent seeking, but not exclusively. To an increasing degree the market for agrotouristic services and organic produce also values the intrinsic utility of land. The value of land rent is therefore determined by the positive difference between the expected productivity of capital in agriculture and in related market sectors. The market for agricultural land discounts, in prices, the expectations concerning this excess productivity of capital in agriculture.

Evidence of this is provided by the data given in Tables 1.2. and 1.3., relating to land rents discounted in the prices of land and payments for the leasing of land in Poland.

**Table 1.2.** Annual value (in Polish zloty<sup>1</sup>) of payments for the lease of land in Poland (a proxy for the use value of land)

land area (ha)	1999	2000	2001	2002	2003	2004	2005	2006
up to 1.00	90.38	86.23	92.03	77.54	108.85	155.76	97.75	156.14
1.01–9.99	87.94	81.53	75.59	75.91	98.41	129.60	114.12	188.54
10.00–99.99	99.39	115.55	96.73	89.08	126.99	223.56	157.89	211.54
>=100.00	85.98	120.82	111.75	109.16	122.96	256.60	177.75	196.56
300.00 or more	-	-	-	-	-	211.83	210.62	141.59
<b>Average</b>	<b>90.92</b>	<b>101.03</b>	<b>94.02</b>	<b>87.92</b>	<b>114.31</b>	<b>195.47</b>	<b>151.63</b>	<b>178.87</b>
land area (ha)	2007	2008	2009	2010	2011	2012	2013	2014
up to 1.00	282.22	335.24	316.98	299.65	710.67	621.43	641.71	549.59
1.01–9.99	348.84	373.75	250.00	356.23	587.45	643.32	703.59	612.36
10.00–99.99	451.14	445.57	297.78	436.15	651.15	942.92	886.88	944.89
>=100.00 <sup>2</sup>	450.77	426.71	207.02	321.68	1064.03	437.53	595.23	1298.57
300.00 or more	425.54	799.19	230.02	521.64	581.00	466.07	500.75	368.73
<b>Average</b>	<b>391.70</b>	<b>476.09</b>	<b>260.36</b>	<b>387.07</b>	<b>718.86</b>	<b>622.25</b>	<b>665.63</b>	<b>754.83</b>

<sup>1</sup>Euro (EUR) to Polish zloty (PLN) average exchange rate over 1999–2014: 1EUR=4,06 PLN

<sup>2</sup>from 2004: 100.00–299.99

Source: Central Statistical Office (GUS) and Agricultural Property Agency (ANR) in Poland (granted by the National Science Centre in Poland, OPUS 6 UMO-2013/11/B/HS4/00572)

**Table 1.3.** Value of land rent discounted in prices of land (in Polish zloty<sup>1</sup>), and the excess part of the value of land rent depending on land area (a proxy for farmland amenities and speculation)

item	1999	2000	2001	2002	2003	2004	2005	2006
<b>Average land rent (zloty)<sup>2</sup></b>	<b>418.4</b>	<b>564.3</b>	<b>612.7</b>	<b>371.1</b>	<b>332.5</b>	<b>457.7</b>	<b>430.3</b>	<b>485.9</b>
Land area (ha)	Surplus part of the value of land rent							
up to 1.00	0.78	0.85	0.85	0.79	0.67	0.66	0.77	0.68
1.01–9.99	0.79	0.86	0.88	0.80	0.70	0.72	0.73	0.61
10.00–99.99	0.76	0.80	0.84	0.76	0.62	0.51	0.63	0.56
>=100.00 <sup>3</sup>	0.79	0.79	0.82	0.71	0.63	0.44	0.59	0.60
300.00 or more	-	-	-	-	-	0.54	0.51	0.71
<b>Average</b>	<b>0.78</b>	<b>0.82</b>	<b>0.85</b>	<b>0.76</b>	<b>0.66</b>	<b>0.57</b>	<b>0.65</b>	<b>0.63</b>

**Table 1.3.** cont.

item	2007	2008	2009	2010	2011	2012	2013	2014
<b>Average land rent (zloty)</b>	<b>665.0</b>	<b>934.0</b>	<b>1043.0</b>	<b>1042.5</b>	<b>1192.2</b>	<b>1272.1</b>	<b>1061.5</b>	<b>1137.6</b>
Land area (ha)	Surplus part of the value of land rent							
up to 1.00	0.58	0.64	0.70	0.71	0.40	0.51	0.40	0.52
1.01–9.99	0.48	0.60	0.76	0.66	0.51	0.49	0.34	0.46
10.00–99.99	0.32	0.52	0.71	0.58	0.45	0.26	0.16	0.17
>=100.00	0.32	0.54	0.80	0.69	0.11	0.66	0.44	-0.14
300.00 or more	0.36	0.14	0.78	0.50	0.51	0.63	0.53	0.68
<b>Average</b>	<b>0.41</b>	<b>0.49</b>	<b>0.75</b>	<b>0.63</b>	<b>0.40</b>	<b>0.51</b>	<b>0.37</b>	<b>0.34</b>

<sup>1</sup> Euro (EUR) to Polish zloty (PLN) average exchange rate over 1999-2014: 1EUR=4,06 PLN

<sup>2</sup> Annual land rent ( $R$ ) discounted in prices of agricultural land, calculated from a formula discounting the stream of perpetual rents:  $R = L * s$ , where  $L$  is the market price of land (according to the Central Statistical Office, Eurostat code: apri\_ap\_aland), and  $s$  is the discount rate, i.e. the long-term interest rate (Eurostat code: irt\_lt\_mcby\_a)

<sup>3</sup> from 2004: 100.00–299.99

Source: Central Statistical Office (GUS) and Agricultural Property Agency (ANR) in Poland (granted by the National Science Centre in Poland, OPUS 6 UMO-2013/11/B/HS4/00572)

The lease payments are the results of tender procedures for the leasing of land from the national stock administered by the Agricultural Property Agency (ANR), in which the participants are primarily farms. This value therefore reflects the productive utilities of the land and the expected income from them. Table 2 shows the land rent discounted in average prices of agricultural land, assuming that the current value of the land is a discounted stream of perpetual rent. This can be seen to be significantly higher than the lease payment, but it must be noted firstly that the difference is smaller in farms above 100 ha in size, and secondly that it decreases year by year (for example, the average land rent was 4.5 times higher than the average lease payment in 1999, but only 1.5 times higher in 2014). The following conclusions are therefore suggested:

- 1) since the end of the 1990s the market for land has discounted, in rising prices, the process of integration with the EU and the introduction of the SAPS system in Poland from 2004;
- 2) year by year, and in line with the phasing-in of CAP subsidies, land prices reflected the increasing political rents and the related expected increase in farm income, but also the new utilities of land. On large farms land has primarily a use value, hence the excess value of the land rent contained in land prices is smaller. We believe that the process of discounting of political rents has now ended;
- 3) formally, the phasing-in process in the EU-12 countries ended in 2013 (in 2011 in Poland, due to national support). The excess value of land rent discounted in prices is nonetheless still found to be approximately 34–40% of that rent

(cf. Table 2). This shows that prices of agricultural land are still discounting expectations of increasing productivity of capital in agriculture. The question is: from what is that growth expected to result? Is it purely speculation, or is account being taken of non-agricultural utilities (amenities) of land, including environmental ones? This is a complex problem, requiring an analysis of the market for land in different locations and with different uses. This topic will be addressed in later parts of the book.

## Conclusions

The statistical data presented here show that land prices in Poland discount a significantly greater quantity of utilities than would result from the agricultural functions of land. A similar situation exists in other EU countries. The question is where the excess value of land comes from. It is undoubtedly created by expectations of political rents and by speculative motives, but also by the non-agricultural utilities of the land. It is nonetheless difficult to determine the proportional contributions of these factors. A new theory of land rent should take account of the fact that in sustainable agriculture many new utilities of the land factor are created intrinsically, that is, without additional inputs of capital and labour. These have the status of public goods, and are paid for chiefly through agricultural policy (that is, through taxes). In this way the intrinsic utility of land takes the form of an economic rent, but we believe that this process may also take place through market channels. In this way history has come full circle, and the pure product of land as described by the physiocrats has been reactivated.