

# Role of agriculture in the development of rural regions

## *Role zemědělství v rozvoji venkovských regionů*

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**Abstract:** In connection with the conception and realisation of the principles of sustainable development, profound changes happen with regard to the position and role of agrarian sector in the frame of the national economy development. Not only developed states respond to these changes, but also the so-called “candidate countries” should react. The contribution is applied to the problems of determination and definition of indicators that characterise regions so that it would be possible, based on them, to determine the prosperity of individual regions.

**Key words:** agrarian sector, rural regions, structural policy, statistical methods

**Abstrakt:** V souvislosti s koncepcí a realizací principu TUR dochází k zásadním změnám v pohledu na postavení a roli agrárního sektoru v rámci rozvoje národní ekonomiky. Na tyto změny reagují nejen vyspělé země (SZP EU, FAIR ACT USA), ale tak by také měly reagovat tzv. kandidátské země. Příspěvek se zabývá problematikou vymezení a definování ukazatelů charakterizujících regiony takovým způsobem, aby na jejich základě bylo možné stanovit prosperitu jednotlivých regionů.

**Klíčová slova:** agrární sektor, venkovské regiony, strukturální politika, statistické metody

## INTRODUCTION

In connection with the integration of Czech agriculture into the Common Agrarian Policy (CAP) of the European Union, there comes forward the following question: What will be the future of this sector not only as a separate section within the national economy, but also what will be its role as an integral and important part of the so-called “rural regions”? These two levels of the conception of agriculture differ especially with regard to the social role of agriculture.

At present in the Czech Republic, the hitherto predominant sectoral view represented a narrower dimension that considers the fulfilment of production functions above all and – from the non-production functions – the relationship to environment especially. This conception of the role of agriculture leads the agrarian policy by means of agrarian-political measures that are aimed at the agrarian sector in itself.

The view of agriculture as an integral part of rural regions begins to assert itself in the connection with the acceptance of the fundamental principles of the regional policy of the European Union. Agriculture is not defined as a separate sector in these principles but as one of many elements of a region, and the measures, that tend

towards agriculture and have the regional dimension, are concentrated on the fulfilment of functions regarding the whole society, as the social role (employment, the stability of settlement), cultural role (the preservation of traditions and the character of the country), and, last but not least, the landscape-creating function.

In respect of the importance of agriculture for society and owing to the financial demands of its supporting policy, it is necessary to decide pragmatically:

- What will society ask from the agricultural sector?
- How will its position and, primarily, its role in national economy and in society, be defined?
- What agrarian-regional political measures are appropriate?

There are essentially three possibilities:

1. To approach agriculture separately from social surroundings and environment in the so-called *clear sectoral approach*.
2. *The balanced sectoral and regional approach* – the combination according to specifics, or the differentiated preference of sectoral or regional view.
3. To see agriculture as an integral element of rural region and to solve its problems only in connection with regional questions – it means *clear regional approach*.

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*The first possibility* preferred in the present development of the approach of the state to agriculture entails the danger of the detachment (eradication) of one economic branch from the whole of economic and social activities that characterise a certain territory as a complex. For example, the position of agricultural enterprises and the role of agriculture will be quite different in densely inhabited areas and in the so-called “central areas” (close to important urban areas) and the position and role of agriculture will be different in sparsely inhabited areas, with undeveloped industry, with the historic development standing “on the periphery”. If there existed only one sectoral view, it could not consider the diversity of roles of agriculture that are given just by the diversities of conditions in which agriculture exists in the given area, it would consider only the specifics affecting the agricultural production (position, land fund, climatic conditions a.s.o.).

*The second possibility*, that combines the regional and sectoral aspect of the action of agriculture, exists within the policies of the European Union (Common Agrarian Policy, regional policy); in connection with the harmonisation with the rules of these policies the conditions begin to be created for its application in the Czech Republic. At this approach, it is possible to evaluate positively the reality that the simplex sectoral dimension is exceeded and agriculture stops being “an isolated element”. There is a negative fact – at least for this period – that it leads practically to overlapping of agrarian-political and regional-political measures; that means “the confusion” in applied instruments (the same instrument can be a component of the agrarian and regional policies) on the one hand, and it produces the growth of financial demands on the other hand.

*The third possibility* represents a certain extreme approach to the solution of the given problems. Agriculture is taken here clearly as the component of a region; the applied measures are conformed to the priorities of the regional development, without the application of the specifics of the agricultural activities.

## METHODOLOGY AND AIMS

The purposes of this contribution, with reference to the above-mentioned facts, are:

1. The design of indicators able to be used at the determination:
  - a) of regions in general – from the standpoint of their economic stabilisation and possibilities of their further economic development (in this frame also of rural regions)
  - b) of the differentiated role of agricultural activities with reference to concrete regions.
2. The design of suitable statistical methods; by the means of these methods, it will be possible to quantify the importance of individual indicators. It will allow to create a simpler model that will characterise individual regions by the help of some (principal) indicators and will enable their mutual comparison and differentiation.

## SOLUTION

If we accept the thesis of combined sectoral and regional approach to agriculture mentioned in the introduction, it means the fundamental approach to individual territorial units, according to what position and what role this sector has in given area. The measures asserted on agriculture will be logically different in the areas where the agrarian sector belongs to no priorities of the regional development, and different in the areas where agriculture should enact the socially and economically stable role. In both cases, the landscape-creating role and the role of preservation and creation of quality environment must be considered.

It is possible to consider pragmatically this variant as a real and tenable in future providing that certain conditions are fulfilled, for example on the common level the following conditions:

1. the clear definition of a region with concrete and transparent indicators:
  - a) the indicators must describe the economic strength (weakness) of a region and the developing potential of a region
  - b) the indicator set must not be too large so as no duplicity of indicators occurs and so that it is possible to deduce definitive results;
2. the determination of a value scale;
3. the clear specialisation of the position and role of agriculture in region;
4. the clear profiling of agrarian-political and regional-political measures that should proceed from evaluation.

### The definition of a region by means of an indicator set

The European Union defines the regional policy on agriculture by the Regulation of the Council 1257/1999. The basic philosophy of this Regulation is to support the development of agriculture at the integration with the rural development and regional development. In the Czech Republic, there is the so-called “Sectoral Operational Programme” (concerning agriculture) that, together with the “Regional Development Programme”, creates a component of the “National Development Plan”. These documents form the basis for the possible application of combined regional and sectoral approach, but on condition of the exclusion of possible duplicities (Figure 1).

At the choice of indicators that can be used for the examination of stabilisation and possible prosperity of region, it is necessary to proceed from criteria that will characterise:

- the summary description of region; in this case it is possible to consider these indicators: the area of the regional territory, the density of settlement (inhabitants per km<sup>2</sup>), the number of municipalities in the division according to the number of inhabitants, the proportion of urban inhabitants and the like;
- economic situation in region: GDP, the share in export, the level of employment in the region, numbers of en-

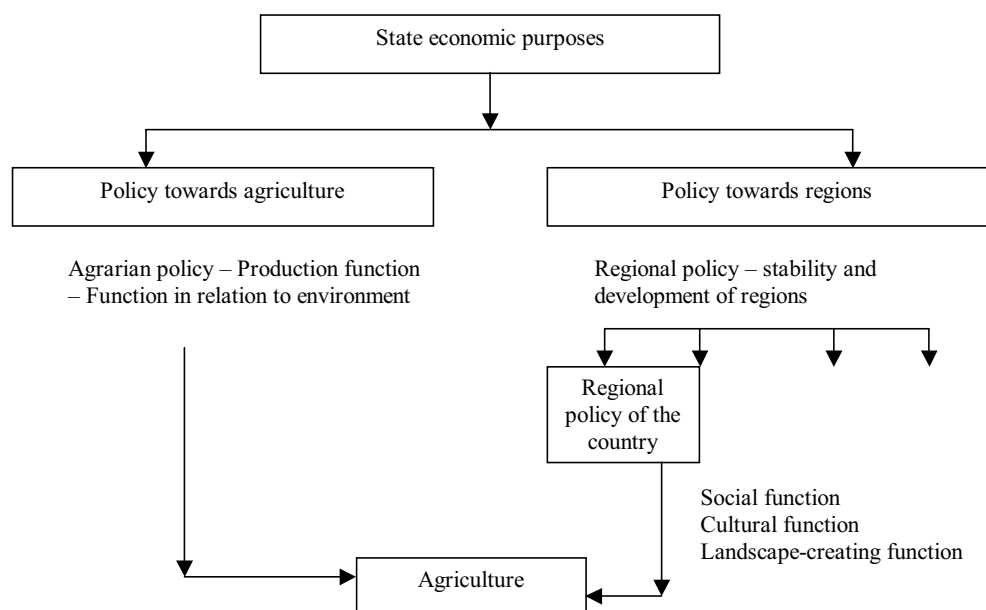


Figure 1. The system of the combined regional and sectoral approach to agriculture

terprises, the level of industrial and agricultural production and the like;

- human potential of region: demographic indicators, the age index, the migration balance, indicators characterising the living standard of inhabitants, the level of education, the health;
- the social level: the share of retired persons, the level of social security benefit and the like;
- infrastructure: transport (motorways, roads, airports, public transport, passenger services), technological facilities (telephone stations, gas pipelines, sanitation), the level of habitation (the housing construction: opened, under construction, finished);
- the environment: the character of nature (the areas of agricultural land, arable land, protected areas, damage to woodland and the like), the cleanness of atmosphere and waters, refuse system and the like.

Then it is possible to use the following indicators for the characterisation and differentiation of *rural regions*:

- the density of settlement,
- the percentage of inhabitants employed in agriculture,
- the proportion of agricultural land in the total area (%),
- the percentage of sub-mountain areas,
- the percentage of mountainous areas,
- the percentage of the so-called “small (plot) areas”,
- the percentage of agricultural land damaged by industrial development,
- the share of agriculture in GDP of the region.

The method of principal components and method of cluster analysis were chosen for the analysis of these multidimensionally characterised regions.

We range the analysis of principal components among the methods used to the reduction of starting (great) number of original variables. The method is based upon the residueless explication of the total dispersion of all variables by means of “*p*” components. It proceeds from

the construction of linear combinations of original variables; the dimension of variables of individual components is observed at the same time namely for the explication of the total dispersion.

The task is the transformation of the set of original variables into new suppositional variables. These variables are called components. The components are ranged according to the size of their contribution for the explication of the total dispersion of original variables. It concerns thus, in principle, the creation of more universal variables out of the original great number of data, but the loss of information, that include the original variables, is minimal.

The purpose of the cluster analysis is the distribution of a given set of units, that are characterised by the group of signs, into some relatively homogeneous subsets – clusters, namely so that the objects inside individual clusters should be similar maximally and the units belonging to different clusters should be similar minimally.

The simplified description of a region by means of a few principal indicators is acquired by the application of above-mentioned methods; at the same time, their significance is quantified. In conclusion it is possible to define the total characteristic that can have a different form (index, number of gained marks, evaluation) and will characterise clearly a region in the light of mentioned criteria. Thus the evaluated region can be confronted with “the prosperity scale”. This confrontation makes it possible to define a region as a “standard, disadvantageous or prosperous region”. On the basis of the differentiation of regions (the calculation of total characteristic on the basis of analysis outputs of principal components or on the basis of results from the cluster analysis), it is then possible to deduce the conclusions for the support state policy, regional policy or the support from another sources (the European Union) (see Figure 2).

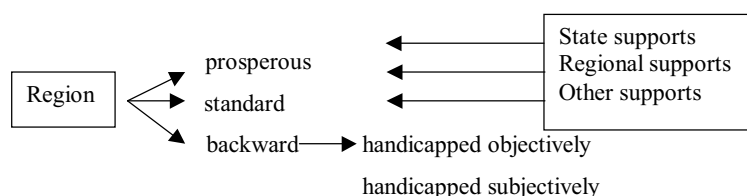


Figure 2. The differentiation of regions

## CONCLUSION

The outlined variant for the choice of indicators serving the characterisation of regions from the standpoint of economic and social aspects and from the standpoint common conditions is the first step in the methodology procedure for the evaluation of the regions level and also for the examination of their possible development potential. The set of proposed indicators needs not be large so that the predicable ability and the importance of individual indicators are not corrupted by the quantity, but it must be transparent and describing the substance of criteria that it should fill up. It is impossible at present to trace some of indicators on all levels (for example: GDP is followed only to the level of a region; a problem will be

also the proportion of agriculture in GDP). But in future there should be it no problem. The further steps will be “the testing” of the proposed methodology in a chosen region, the determination of limit values for the differentiation of regions and the elaboration of the problems of rural regions and the position of agriculture in them.

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