
The socio-economic monitoring of the Ignalina Nuclear Power Plant region: methodology, programme, implementation

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INTRODUCTION

On the 19th of February 2001, Government of Lithuanian Republic has passed Resolution No 172 "On the approval of the programme of cancellation of exploitation of the first unit of the Ignalina Nuclear Power Plant". Shortly after that, Ministry of Economy has prepared a plan of measures for implementation of this programme. Some measures, which should help to diminish the possible negative consequences of the closure of the Ignalina Nuclear Power Plant (INPP) were designed. Systematic and reliable information on changes in the social and economic processes in the Ignalina NPP region is a necessary condition to make these measures effective. Therefore a socio-economic monitoring of this region, *i.e.* systematic observation of the social processes relevant to the conversion of the region from one state to another is inevitable. The monitoring is being organised in the context of preparations for the closure of the Ignalina NPP, seeking to increase the effectiveness of social policy measures.

The programme of the socio-economic monitoring of the Ignalina NPP region was compiled and prepared by the scientists of the Division of Regional Geography of Institute of Geography. Preparation of the programme was funded by United Nations Development Programme (UNDP/Lithuania) and co-ordinated by the Ministry for Social Security and Labour, Republic of Lithuania.

THE CONCEPTION OF SOCIO-ECONOMIC MONITORING OF THE REGION

Conception of the region

The region of the Ignalina NPP is a targeted problematic region, which includes the territories of Ig-

nalina, Zarasai and Visaginas municipalities, which are functionally related to the INPP and its infrastructure and are also closely located to the official zone of 30 km of observation of the INPP (Baubinas, Taminskas, Balevičienė, Paškauskas, 1998; Social..., 1999; Baubinas, Burneika, 2001).

Conception of social policy

Social policy is an aggregate of measures seeking social equity and equality. Therefore the monitoring firstly has to observe the social development of the region and the factors that influence it. It has to establish the effectiveness of the preventive measures of social policy and to enhance their flexibility.

Conception of socio-economic monitoring

In general, socio-economic monitoring is mostly conceived as an organised systematic observation of social and economic processes related to the transition of the region from one state to another. A more concrete conception of the monitoring:

- **Social-economical monitoring of a region** is a system including the observation, analysis, assessment, forecasting of the socio-economic state of the region and preparation of the measures for its improvement.

- **The aim of the monitoring** is to supply exact and universal information concerning social processes taking part in the region and factors that effect them for the institutions implementing social and economic policy in the region.

- **The purpose of the monitoring** is systematical-gather and generalise information on the processes taking part in the region and their interdependence.

There are different examples of the monitoring of social processes (social, economical, social-economical ect.) (Kogut, Rochtchine, 1994; Van der Werf, Ronge, 1996; Van der Werf, 1996; Estreguil, Demicheli, 2001). There are a lot of examples of different levels of socio-economic monitoring as well (global, national, regional, local). The examples of programmes of regional level and order (Dandy, Scotland; Kerns, Australia; Christchurch, New Zealand; Bashkortostan and Orlovskaya oblast, Russia) are discussed at this stage of investigation.

General principles of organisation of a socio-economic monitoring

The main principle of organisation of the monitoring should be expedience. A systemic view to the organisation of the monitoring requires that a region should be analysed as part of a higher spatial social region. Among other principles of the monitoring, the constancy, periodicity, compatibility of indicators in time, complementarity should be mentioned. When organising a monitoring it is necessary to keep to the requirements usually applied to the information intended for the purposes of management: completeness, presentability, reliability, timeliness.

Indices of socio-economic state of the region and principles of their selection

The main principles of selection of indicators of socio-economic monitoring are determined by the purposes of monitoring. The spatial constitution of the region, characteristics of socio-economic processes determine that the main indices in the region are to be gathered on different spatial levels. An important principle of selection of the indices should be their accessibility and costs of observation.

Most important are groups of indices related to the observation of social state (especially quality of life, demographic situation, suspense of social development, social stability), development of economy, effectiveness of measures of social policy (Table).

A system of indices adapted to the INPP region is presented in the programme of socio-economic monitoring of the INPP region (Ignalinos..., 2001).

Peculiarities of data accessibility

The possibilities of collecting data for monitoring of social processes mostly depend on the complexity of the process, system of statistical services, aims and scale of the monitoring, legal and financial possibilities of research. Main sources of the data used for the purposes of monitoring are the official system of statistics and targeted applied researches (Figure). Ten to 20 percent of data in the analysed programmes of monitoring in the foreign countries are collected using direct research.

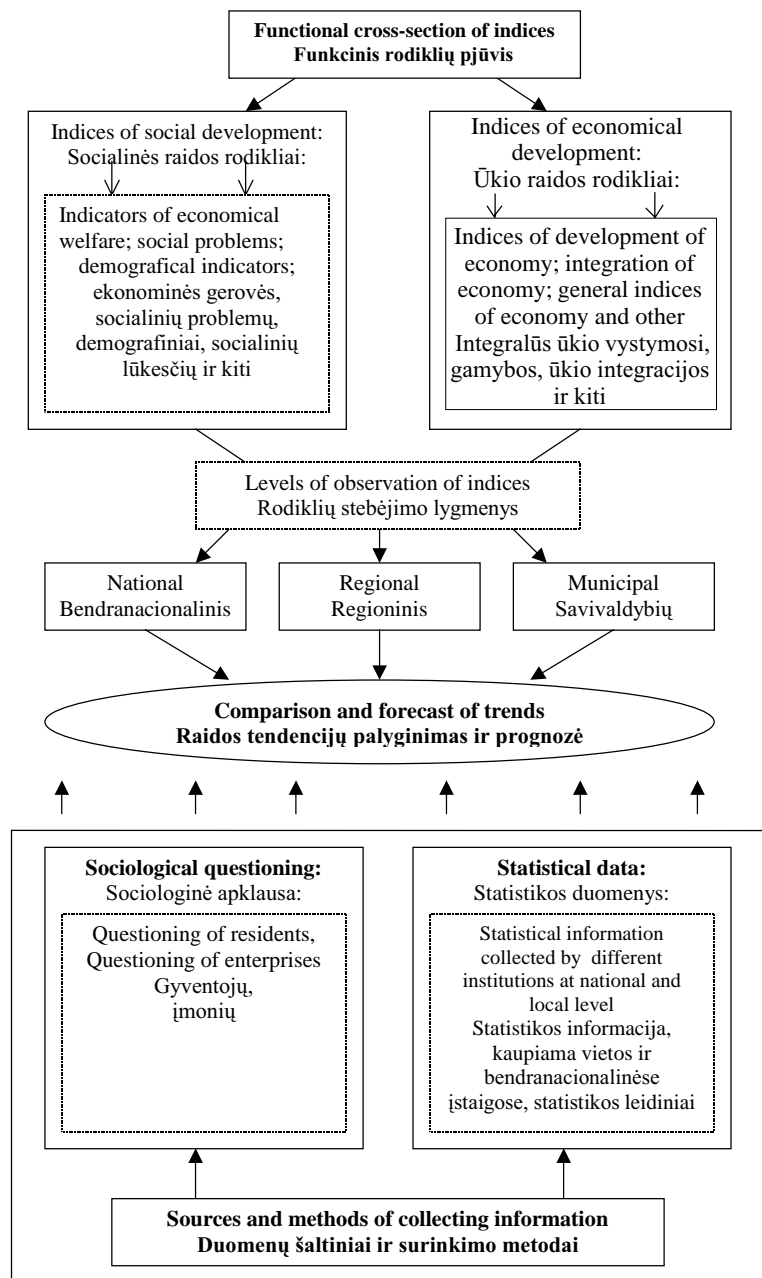


Figure. System of indices of socio-economic monitoring
Pav. Socialinio-ekonominio monitoringo rodiklių sistema

THE SOCIO-ECONOMIC MONITORING OF THE IGNALINA NPP REGION

Peculiarities of geographical location and constitution of the region

The Ignalina NPP region is a relative conception, which determines a territory that is relatively closely connected with the functioning of the INPP. More than 90 percent of the territory of the region is a zone with a higher level of regulation of social and economical life (50 km around the INPP) due to

the operating nuclear power plant. The region involves 4.3% of the territory of Lithuania (2839 km²) and 2.3% of the population of Lithuania reside there. There are 1526 settlements in the region.

The core of the region (the town of Visaginas, which has potential possibilities to become an organisational centre of the region) is very young and therefore permanent social links are just at the stage of formation (Baubinas, Burneika, 2001).

Due to various geographical, economical and political circumstances the region cannot be classified to any usual type of regions.

Table. The number of indices Lentelė. Rodiklių skaičius		
Group of indices Rodiklių grupė	Subgroup of indices Rodiklių pogrupis	Number of indices Rodiklių skaičius
1. Demographic and socio-demographic indices Demografiniai ir socialiniai-demografiniai rodikliai		20
2. Indices of quality of life Gyvenimo sąlygų kokybės rodikliai	2.1 Indices of economic welfare Ekonominės gerovės rodikliai	6
	2.2 Indices of socio state Socialinės būklės rodikliai	10
	2.3 Indices of quality of environment* Aplinkos kokybės rodikliai	1
3. Indices of economy Ūkio rodikliai	3.1 Indices of economical activity of population Gyventojų ekonominio aktyvumo rodikliai	2
	3.2 General indices of the state of economy Bendrieji ekonominės būklės rodikliai	13
	3.3 Indices of the structure of economy Ūkio struktūros rodikliai	18
	3.4 Indices of integration of economy Ekonominės integracijos rodikliai	6
4. Indices of social and cultural integration Socialinės ir kultūrinės integracijos rodikliai		7
5. Indices of socio-psychological state Socialinės psichologinės būklės rodikliai		6
6. Indices of effectiveness social policy measures Socialinės politikos efektyvumo rodikliai		10
7. Indices of social expectations Socialinių lūkesčių rodikliai		6
Total Iš viso		105
* A separate exhaustive environmental monitoring programme of the Ignalina NPP region has been prepared. * Yra parengta atskira išsami Ignalinos AE regiono aplinkos būklės monitoringo programa.		

Peculiarities of the socio-economic monitoring of the INPP region

In the case of a problematic region (such as the INPP region), special attention should be given to the observation, analysis and forecast of exceptional phenomena, usually not common for other territories. Specific social problems require exceptional measures of social policy. The closure of the INPP is taking place in a unique socio-cultural environment, which is effected not just by a potential economic recession but also by the existing cultural isolation, closed society, social and economical reforms.

The purpose of the monitoring is systematic collection and generalisation of information, as complete as possible, on the social processes taking place in the region, their interdependence and dependence on the processes outside the region, as well as their spatial differentiation.

Regional attitude means that the monitoring should consider the territory as an integral entity, but with its internal structure, which was established during earlier studies of the country.

Organisation of the socio-economic monitoring of the INPP region

The principles of organisation of the monitoring of the INPP region are mostly the same as of any other monitoring, which have been mentioned above, but some corrections should be made. As the main social problems of the region are related to the closure of the INPP, a system of indices and periodicity of their observation should be changed and adapted to the scheduled evolution of the INPP. The possibility of additional observations should be foreseen (in cases when decisions related to the future of the INPP and Visaginas are made). For the same reasons special attention should be paid to the principle of complementarity.

Selection of indices of the socio-economic monitoring of the INPP region

Most serious complications can arise due to the changes of principles and methods of gathering statistical information. Due to these reasons the indices of monitoring sometimes cannot be directly used for establishing differences among municipalities. The main reason for complications arises from the actual situation, when the INPP is located in the territory of the municipality of Ignalina, but its employees reside in Visaginas. The whole economic activity and some of its consequences (first of all the number of employees and the volume of income) are attributed to the municipality of Ignalina. Actu-

ally the greatest part of income is being received by residents of Visaginas.

Trying to establish the specific character of the phenomena studied and their territorial differentiation, comparison of the trends of changes of the indices in Lithuania, in the whole region and in each municipality separately is necessary. At the local level some indices, if necessary, are gathered only in closest to the INPP, most problematic territories – local administrative units of Rimšė and Turmantas.

The socio-economic monitoring of the Ignalina NPP region should involve the whole period of the closure of the INPP and continue until social transformations determined by the closure are expected.

SOME PROBLEMS OF IMPLEMENTATION OF SOCIO-ECONOMIC MONITORING IN THE IGNALINA NPP REGION (RESULTS OF A TRIAL OF THE METHODS)

The main task of the trial of the methods was to determine the accessibility of social/economic data and to find the legal, organisational, financial and other stimuli necessary for improvement of their accessibility. Some problems that came to light during the methodical trial should be briefly discussed.

The problem of territorial compatibility of statistical data registration and accumulation. Though Visaginas was qualified as a separate municipality in 1995, the process of generalisation, registration and accumulation of data on the city and NPP is still in progress. Some indices have been distinguished only recently. For this reason an analysis of changes of the indices will inevitably confront the problem of territorial compatibility. The economic activity of the NPP and its social implications (the number of employees and wages in the first place) are statistically calculated as those of Ignalina Municipality, but actually Visaginas receives the greater part of the income. For this reason the index “average salary” in Section 2.1 has been split into two territorial levels: Ignalina district with the NPP and the Ignalina district without it. In the first case Ignalina Municipality takes one of the leading positions in Lithuania, in the second case it is among the most backward municipalities. The centralised character of data registration and accumulation and Visaginas “attraction” served as the main reason to refuse some indices reflecting the state of health: many people from rural districts and Visaginas environs go to Visaginas for qualified medical service. Statistically Visaginas stands out for a high sickness rate.

The problem of data objectiveness and representativeness. Only a detailed analysis has raised doubts as to the objectiveness and representativeness of some data and indices. For this reason some common indices should be rejected (*e.g.*, the bag of main consumption), because they are not very representative of this region or may hardly become such in the future. Many rural districts have no centralised utilities, therefore the bag of consumption services may be determined only very approximately. Some land use indices preserve a certain long-term stability and their monitoring loses its importance, especially in the regions where agricultural development is not very intensive. Changes in the order of data registration and accumulation forced to reject some indices of land use in the region, because their reliability diminished.

The inquest data are characterised by certain subjectiveness. However, they can be analysed in the context of data obtained from other sources. It is only natural that the social/economic monitoring of the Ignalina NPP region should take a long time during which the topicality of some indices would change (this is especially true with the indicators discussed in questionnaires). The questionnaires and the indices should be characterised with regard to the political, social and economical changes in Lithuania. *E. g.*, when Lithuania enters the EU or the NPP is closed, the importance and formulation of certain questions will change. Extra observations and investigations must be carried out particularly urgently when the resolutions determining the fate of the INPP and Visaginas are adopted. In the future, if necessary, the monitoring could be implemented on the local level – in the most problematic areas that are in the impact zone of the NPP, *i. e.*, Rimšė and Turmantas local administrative units.

Objectiveness of the data provided by special institutions is by far a more complicated problem. According to the data of Migration Department of Visaginas, Police Commissariat, in comparison with 1997 the number of inhabitants annually leaving Visaginas increased 2.5 times (those incoming – 1.5 times). The population of Visaginas is actually decreasing. However, it should be taken into consideration that most of the city population cross off the register in order to reduce the burden of taxes of public utility services (registering temporarily again when necessary). Only a small part of the leaving actually leave the town. It is impossible to exclude the monitoring of migrational indices in the region, but, it is necessary to seek for more objective data. Moreover, though the actual migration rates are not high, the attempts of inhabitants only to cross off the register serve as a valuable indicator of the social state of the population.

The problem of exceptional indicators. Observation of exceptional processes is one of the main tasks of regional monitoring. Changes taking place in the region should be considered in a wider context. Only a comparison of the regional and general tendencies of the country allows us to reveal the distinctive features of regional processes. Evaluation of the situation in the problematic regions often confronts the problem of monitoring of exceptional indicators, which are important only for this specific region. In such cases it would be incorrect to base some principles of monitoring on investigation data collected in other localities. The specific character of the INPP region requires to include exceptional (extra) indices into the monitoring system. Most of them could be of temporary importance.

For example, for the INPP region (more precisely for Visaginas) the number of persons renouncing citizenship of the Republic of Lithuania is an exceptional indicator, which was included into the monitoring after a methodical trial. Data on the number of such persons have been included into the register of Department of Migration (in Visaginas) only recently. However, some trends have taken shape. In 2000 the number of applications for renouncement of citizenship was 28, while in 2001 it reached 127. The extraordinary position of Visaginas becomes evident. The number of people renouncing the citizenship is an important indicator of expectations, *i. e.* it reflects the attitude of the population toward social development in the future.

An analysis of the situation in the region has also revealed that knowledge of the indices of criminality is indispensable for Visaginas. From the social point of view it is especially important to know the proportion of adolescent delinquency. This information will be necessary for development of social policy.

Various social stability indices characterizing the probability of social conflicts (national, cultural, etc.) should be also considered important for evaluation of the situation in the region. Unfortunately, employment of these indices in the monitoring of the region is rather restricted because of the lack of data and the ambiguity of their interpretation.

Problems of compatibility of organisation and investigation. An analysis of data availability revealed different accessibility of sources. Some data are hardly available due to the bureaucratic obstacles.

For example, it has turned out that the dependence of many enterprises of the region on the INPP has reduced. Only the companies serving the INPP make an exception. Thus, the dependence of companies on the INPP should be followed on the basis of the inquest organised by Statistical Department (about 100–150 enterprises are regularly questioned

in Visaginas alone) rather than on the basis of the number of orders of the NPP provision service.

At present, it is not expedient to carry out a regional investigation of household economy, because the differentiation of incomes is high and most of the households with higher incomes are concentrated in Visaginas. Besides, investigation of household economy requires permanent extra costs. In Visaginas it could be organised if there were adequate financial possibilities.

Lithuania is engaged in different national monitorings of the social/economic situation. The monitoring in the INPP region should be linked with the implementation of other programmes specially designed for this region (environmental monitoring, monitoring of labour market, etc.) The Department of Statistics provides quarterly reports on the economic and social situation as well as data on household budgets, state of enterprises, etc. However, owing to the specific methods employed by this department it is difficult to integrate these data into the database of the INPP regional monitoring. Investigations carried out by the department do not reveal regional differences, and the circle of respondents is not constant. A possibility should be considered for the Department of Statistics to carry out investigations whose results would better reflect the state and development of the INPP region. However, organisation of such kind of work would require extra organisational measures and financing.

Establishment of a special institution for implementation of the monitoring is gaining importance. The best results could be achieved if there were a special institution (public enterprise established by the ministries and local municipalities) located in Visaginas and inviting the assistance of local experts and institutions providing the information. The trial revealed that the situation is perceived better locally and the information is collected more operatively. Scientific staffs could analyse and evaluate the social/economic situation in the region and make amendments to the methodical principles. Such a collaboration would create premises for a higher efficiency of the monitoring system.

CONCLUSIONS AND RECOMMENDATIONS

1. The socio-economic monitoring of the Ignalina NPP region, which is perceived as systemic supervision of human processes connected with the transformation of the region from one state to another, is inevitable seeking to gain reliable and systematic information about the dynamics of the social/economic state of the region, trends of social/psychological reactions of its population. This information is

necessary for the highest effectiveness of measures of social policy.

2. The formation of the system of indices of socio-economic monitoring should be based on the idea that exceptional attention should be paid to the supervision, analysis and forecast of the phenomena that are not common for other territories. The closure of the INPP is taking place in a unique social/cultural environment, which is effected not only by the potential economical recession, but also by the *de facto* existing cultural isolation, closed society, reformations of economic and political character. Such specific information is required, because the exceptional social problems require exceptional measures of social policy.

3. The direct indices of socio-economic state, which are accumulated in different state organisations, comprise the biggest part of the indices (38%). Calculated indices comprise 32%. They are calculated using data from state organisations or other indices of this monitoring. The indices that require direct researches comprise 30%. They include sociological questioning of the population, enterprises and organizations or specialized researches.

4. The monitoring of the INPP region should be implemented on three territorial levels. The main level in this programme is that of municipalities.

5. A trial of the programme of the INPP monitoring enables to conclude that complications in the implementation of the monitoring can be caused mainly by the problems of territorial organization of statistical researches, objectiveness and representativeness of collected data, use of exceptional indicators and organization of researches.

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IGNALINOS ATOMINĖS ELEKTRINĖS REGIONO SOCIALINIS-EKONOMINIS MONITORINGAS: METODOLOGIJA, PROGRAMA, PRITAIKYMAS

S a n t r a u k a

2001 m. vasario 19 d. Lietuvos Respublikos Vyriausybė priėmė nutarimą Nr. 172 „Dėl valstybės įmonės Ignalinos atominės elektrinės pirmojo bloko eksploataavimo nutraukimo programos patvirtinimo“. Siekiant, kad Ignalinos AE uždarymo metu socialinės politikos priemonės būtų efektyvios ir lanksčios, būtina turėti sistemingą ir patikimą informaciją apie Ignalinos AE regiono socialinės-ekonominės būklės kaitą, regiono gyventojų socialinių bei psichologinių nuostatų tendencijas. Tam reikalingas šio regiono socialinis-ekonominis monitoringas – socialinės ir ekonominės būklės, besiformuojančios regione, stebėjimo, analizės, vertinimo, prognozės sistema bei rekomendacijos jai pagerinti.

Ignalinos atominės elektrinės regionas yra sąlyginė sąvoka, apibūdinanti teritoriją, santykinai glaudžiai susietą su Ignalinos AE funkcionavimu abipusiais poveikio ryšiais. Ignalinos AE suvokiamas kaip tikslinis probleminis regionas, apimantis Ignalinos, Visagino ir Zarasų savivaldybių teritorijas, funkciškai labiausiai susijusias su IAE ir infrastruktūros veikla bei artimiausias AE 30 km stebėjimo zonos lokalizacijai. Regiono branduolys (Visagino miestas, turintis potencialias regiono organizavimo galimybes) yra labai jaunas, todėl pastovūs socialiniai ryšiai dar tik formuojasi. Dėl įvairių geografinių, ekonominių ir politinių aplinkybių Ignalinos AE regiono negalima priskirti nė vienam iš įprastų regionų tipų.

Socialinio-ekonominio monitoringo rodiklių (dar vadinamų socialinės-ekonominės būklės indikatoriais) parinkimo pagrindinius principus nulemia šio monitoringo tikslai. Atsižvelgiant į erdvinę regiono sandarą, socioekonominių procesų charakteristiką, didžioji dalis monitoringo rodiklių regione turėtų būti parenkama keliais erdviniais lygmenimis. Svarbus rodiklių atrankos principas yra jų prieinamumas bei stebėjimo galimybes. Probleminių regionų (toks yra IAE regionas) atveju ypatingas uždavinys tenka išskirtinių, dažnai nebūdingų kitoms teritorijoms, reiškiniių stebėjimui, analizei ir prognozei. Specifinės socialinės problemos reikalauja išskirtinių socialinės politikos priemonių. IAE uždarymas vyksta unikaloje sociokultūrinėje erdvėje, veikiamoje ne tik potencialios ekonominės digresijos, bet ir *de facto* egzistuojančios kultūrinės izoliacijos, uždaro sociumo, pastaraisiais metais sparčiai vykusių eko-

nominių ir politinių reformų. Socialinio-ekonominio IAE regiono monitoringo paskirtis – sistemingai rinkti ir apibendrinti kuo platesnę informaciją apie regione vykstančius visuomeninius procesus, jų savitarpio bei išorinę priklausomybę, erdvinę diferenciaciją. Regioninis požiūris reiškia, kad monitoringas turi apimti teritoriją kaip integralią visumą, turinčią savo vidinę erdvinę struktūrą, kuri buvo nustatyta ankstesnėse šio krašto studijose (Atominė..., 1997).

IAE regiono monitoringo organizavimo principai atitinka anksčiau minėtus bendruosius monitoringo organizavimo principus, tačiau dėl problemos specifikos būtinos tam tikros korekcijos. Darbą gali apsunkinti statistikos duomenų rinkimo principų ir metodų kaita. Dėl šių priežasčių socialinio-ekonominio monitoringo rodiklių dažnai negalima tiesiogiai naudoti skirtumams tarp savivaldybių nustatyti. Ignalinos AE regiono socialinio-ekonominio monitoringo trukmė turi apimti visą AE uždarymo laikotarpį ir tęstis iki socialinių regiono transformacijų.

Šioje monitoringo programoje pagrindinis yra savivaldybių teritorinis lygmuo. Tyrimų kartojimo periodas, nustatytas atsižvelgiant į stebimos teritorijos rangą, ypatumus ir duomenų prieinamumą, – kalendoriniai metai. Kai kurie socialinės-ekonominės būklės rodikliai (stebėjimų ir socialinės politikos priemonių operatyvumui padidinti) kaupiami ir apibendrinami kalendorinių metų ketvirčiais. Būtni ir nereguliarūs tyrimai.

Ignalinos AE regiono socialinio-ekonominio monitoringo rodiklių sistemą sudaro 106 socialiniai-ekonominiai rodikliai. Bendra rodiklių imtis, įvertinant regioninį pjūvį, – 215. Daugumai rodiklių (38%) naudojami tiesioginiai žinybų surinkti arba apdoroti duomenys. Išvestiniai rodikliai (32%) apskaičiuojami iš žinybinių duomenų arba kitų šios monitoringo sistemos rodiklių. Rodikliai, kuriems reikia tiesioginių tyrimų, sudaro 30% ir apima specializuotus surašymus (gyventojų ir būsto, žemės ūkio ir kt.), gyventojų, ekspertų, įmonių ir organizacijų apklausas bei specialius tyrinėjimus.

Metodikos ir programos tikrinimo rezultatai priverstė peržiūrėti ir pakoreguoti pirminę monitoringo rodiklių sistemą, patikslinti rodiklių formulavimą, duomenų šaltinius, dalies rodiklių atsisakyta, papildomai įvesta naujų, koreguotos ir derintos tarpusavyje apklausų anketos. Kai kurios tikrinimo metu išryškėjusios problemos aptartos atskirai: statistikos teritorinio organizavimo (duomenų teritorinio suderinamumo), duomenų objektyvumo ir reprezentatyvumo, išskirtinių rodiklių (pvz., LR pilietybės atsisakančiųjų skaičiaus rodiklis ir kiti visuomenės stabilumo rodikliai, apibūdinantys esamų ir potencialių visuomeninių konfliktų tikimybę) panaudojimo, tyrimų organizavimo ir kitos.