

# Regional programmes for improving labour productivity: An example from the western Ukraine

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One of the most important tasks facing planners in times of rapid scientific and technical progress is to ensure that the quantitative and qualitative characteristics of the labour force are such as to guarantee a balanced supply of manpower for the national and regional economy.

This article will explain how – despite the unfavourable prevailing demographic trends – the labour force requirements in the western region of the Ukrainian SSR are being met through a new approach to regional planning known as the special “integrated” programme. First, however, we shall briefly describe the context in which this new initiative is being carried out.

## The geographical, economic and demographic setting

The western region of the Ukrainian SSR comprises the provinces of Lvov, Ivan-Frankovsk, Ternopol, Volynia, Rovno, Transcarpathia and Chernovitsy. Its favourable geographical situation and proximity to other socialist States enable it to play a key role in the process of socialist economic integration, while the natural conditions and resources of the region give it an enormous economic potential which is not belied by its rapid rates of growth.

The western provinces spread over two natural zones – the forest lands, yielding high-quality timber, and the woodland-steppe, with its extremely fertile black-earth soil. They also contain considerable reserves of useful minerals, such as coal, natural gas, sulphur, potash, various crystalline rocks and other raw materials much prized by the building trade. Tourism and recreational activities are developing rapidly thanks to local sources of mineral waters and the generally favourable climatic conditions of the region. This is particularly true of Transcarpathia, which possesses unique mineral water springs and has established efficient sanatoria for treating asthma sufferers. With its wealth of historical and cultural monuments, picturesque

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scenery and well-developed transport network, the western Ukraine has good prospects of becoming a centre for international tourism.

Since the Revolution an impressive production potential has been built up in the western provinces, spearheaded by a number of big mining, chemicals and engineering plants. Today the region boasts a diversified economy using advanced production techniques. The growth of industry has been particularly rapid, the volume of industrial production of undertakings in Lvov province having increased no less than 6,600 per cent over the past 45 years.

The western provinces occupy a leading place in the Republic in the manufacture of several types of products. For example, Lvov province alone produces 90 per cent of the Ukrainian SSR's buses and all its fork-lift trucks, mopeds, sulphur and conveyor belts. The agro-industrial sector is also developing rapidly.

The region's economic expansion is well serviced by the highly qualified personnel turned out by 25 higher educational establishments and 135 technical colleges and schools. A large proportion (approximately 95 per cent) of the potential labour force is already economically active. However, a shortage of labour resources has begun to make itself felt of late because new job openings are being created at a rate outstripping that of population growth.

On 1 January 1983 the population of the western region accounted for 18.7 per cent of the Republic's total. More than 44 per cent of it was urban, the most highly urbanised province being Lvov with 56 per cent urban. Between 1959 and 1982 the population of the region increased at an average annual rate of 0.79 per cent (0.78 per cent for the Ukrainian SSR as a whole). Urban growth rates were much higher, at 2.87 and 2.2 per cent respectively. The average annual rates of population growth for the individual provinces during this period ranged from a low of 0.28 per cent in Ternopol to a high of 1.07 per cent in Transcarpathia. There is a clearly marked trend towards a decline in the rates of growth both in the urban areas and in the total population, the respective figures for the western region during the period 1979-82 being 2.18 and 0.47 per cent. The urban population of the western region is increasing more rapidly and the rural population is declining at a slower rate than in the Ukrainian SSR as a whole.

The steady drop in the birth rate not only has social and economic causes but is also due to purely demographic factors, since the 1941-45 war affected both the age and the sex structure of the population. The sex structure has been evened out as a result of natural population movements and migration, particularly in the urban areas. The ageing process is expected to continue into the future.

It may help to understand the expected changes in the population dynamics of the western region of the Ukrainian SSR if we take as an example the population living in the Carpathian region. Projections for this

region show that there will be a further drop in the average annual rate of growth of the urban population and a slowing down in the rate of decline of the rural population. The shortage of people of working age resulting from the reduced birth rate during the Second World War will continue to be felt up to the year 2005, i.e. until the time that men born in 1945 become pensioners. The results of the decline in the birth rate that started in 1960, and continues today, will be reflected in the size of the population of working age even beyond the year 2000 (perhaps as far as the year 2040).

With the present shortage of labour resources the only possible way of attaining the targets set for the country's economy at the 26th Congress of the Communist Party of the Soviet Union in 1981 is to make full and rational use of the present labour resources and to spare no effort to improve labour productivity. One of the most promising instruments for achieving this is the special integrated "Trud" (labour) programme.

## **The place and role of special integrated programmes in the Soviet planning system**

The purpose of the special integrated programmes is to deal in greater depth with particular tasks that are laid down in more general terms in the relevant sections of the national plan. They are drawn up at various levels but are not intended to replace the territorial or sectoral plans *per se*.

It follows that their fundamental objectives are identical with those of national planning: satisfying the material needs of the population for an adequate and balanced diet, for necessary consumer goods and other types of services; satisfying the spiritual needs of society by creating conditions for the harmonious all-round development of the individual; protecting the environment in various ways, including the rational use of natural resources; balanced and harmonious development of the labour force through the establishment of an optimal social infrastructure; and in general the improvement of every aspect of social life. But the aims of the special integrated programmes, which may be roughly categorised as either scientific and technical or socio-economic, are of course generally more narrowly defined than the range of tasks outlined in the national economic plan and its various subdivisions, so that great importance attaches to the proper co-ordination of the two types of planning.

The scope of the programmes can be national, regional or sectoral. Currently, programmes are drawn up at the All-Union, Republican and provincial levels though, as we shall see, there are even finer divisions. During the eleventh five-year period (1981-85) 170 all-Union integrated programmes of the scientific and technical variety are being implemented. There are also scientific and technical programmes drawn up specifically for the Republics, provinces or large regions. The Ukrainian SSR, for example, has special programmes for the metal, sugar and energy sectors.

In the case we consider in this article, the "Trud" programme is drawn up at the Republican level, but the provincial programmes form an integral part of it. In their turn, the "Trud" programmes of the undertakings, particular sectors or industries, ministries and departments as well as of the territories (urban and district authorities) form part of the "Trud" programme of the relevant province.

Regional socio-economic programmes, which are the ones that concern us here, are appropriate for dealing with major territorial problems cutting across several branches – problems which, because of their complexity, cannot be solved within the framework of existing sectoral and territorial planning since they call for concerted efforts by undertakings and organisations coming under the jurisdiction of different ministries and departments. The problems tackled are of a long-term nature; they include increasing the effectiveness of the utilisation of labour resources, improving the regional infrastructure, developing recreational facilities, and improving the utilisation of fuel and energy resources. Whatever the administrative level at which the programmes are drawn up, the methodology used in their elaboration is identical; this does not mean, of course, that the particularities of the social and economic development of each region need not be taken into account.

Like any other form of planning and scientific research activity, the preparation of the programme involves a succession of procedures and methods for diagnosing the problems and exploring, assessing and selecting the most promising means of solving them. The various stages will be illustrated in greater detail in the next section. Suffice it to say here that they include: initial analysis and formulation of the problem and of the programme objectives; drafting and appraising possible variants of the programme; and detailed elaboration of the selected variant as a planning document. It need hardly be added that if the programmes are to succeed they need to be backed up by action to provide the necessary capital investment, material, financial and labour resources, and information channels.

## The "Trud" programme

### General aims

The type of regional programme with which we are particularly concerned here – the "Trud" (labour) programme – offers a reliable means of improving management techniques and turning the socio-economic advantages of developed socialism to account by drawing regional reserves of labour into public production and thus helping to make these activities more efficient. Its main objective can be broken down into four primary goals: (1) optimising the supply and deployment of labour resources; (2) improving the workers' technical skills; (3) rational utilisation of working time; and (4) improving the structure of employment.

The general goals are next broken down into more specific tasks. To take an example, the first goal mentioned above, optimising the supply and deployment of labour resources, is subdivided as follows: (1) alleviating the demographic situation (increasing the overall size of the population, improving the age structure of the population, raising the birth rate); (2) developing the educational system (both general education and the different levels of vocational and technical education); (3) improving public health (expanding the network of medical establishments, opening rest and holiday centres, building dispensaries); (4) optimising the settlement system (town planning); (5) increasing labour force participation rates (e.g. by drawing persons engaged in personal subsidiary farming into public production and providing moral and material incentives for pensioners to return to work), and "stretching" the existing labour force by reducing the proportion of manual labour.

### **Managing the programme**

The programme management process can be divided into two phases. The first, which covers the preparation and elaboration of the programme, occupies a relatively short span of time. The second phase, implementation and monitoring, covers the major part of the life of the programme.

An ad hoc, matrix-type management structure is created, comprising special permanent bodies selected from the existing administrative structure to co-ordinate programme preparation and implementation. The management of the programme at each level (territorial, sectoral, undertaking) is entrusted to directors (chairmen) who are responsible for meeting their particular targets and for co-ordinating the work of the different bodies involved. In this way the traditional vertical hierarchy is supplemented by "horizontal" management and co-ordination bodies responsible for each of the various programmes.

In the case of the "Trud" programme we are considering here, the management structure selected drew on the experience of the Ukrainian Academy of Sciences and, in particular, on that gained by the Western Scientific Centre of the Ukrainian Academy of Sciences for the Integration of Science and Production in executing scientific and technical programmes. A joint management unit was set up, comprising the Lvov Branch of the Institute of Economics of the Ukrainian Academy of Sciences (the lead organisation), the economics faculties of higher educational establishments in the western region of the Ukrainian SSR and the provincial labour departments. Close co-operation between research personnel, the planning bodies and the labour and economic executive organs contributes to the effective implementation of the programme. Overall direction of the unit's activity is entrusted to a scientific and technical council consisting of the chairmen of the constituent organisations, the heads of the labour departments of the western provinces and leading production specialists.

The unit's work is carried out in accordance with the programme of research for 1981-85, which was drawn up by its scientific and technical council on the basis of proposals submitted to it by the constituent organisations and approved by the State Labour Committee of the Ukrainian SSR and by the Western Scientific Centre of the Ukrainian Academy of Sciences. To ensure that this research is of the highest possible quality, the labour departments have set up production and research laboratories under the direction of senior members of the Institute of Economics of the Ukrainian Academy of Sciences and the heads of the respective provincial labour departments.

The scientific and organisational research undertaken by these laboratories provides an important stimulus to the labour departments in their efforts to tackle the problems of improving the utilisation of the provinces' labour resources; by enabling the labour departments to keep abreast of the latest scientific developments, it makes a very real contribution to ensuring that each industry, undertaking and establishment is supplied with the manpower it needs.

The work of the laboratories is directed essentially towards improving and refining the "Trud" programme at every level of management, from the undertaking to the city, district and province, and focuses on the efficient handling and analysis of information received from the lower management units with a view to programme elaboration. In 1983 alone, the laboratories, together with the competent management bodies, trade unions and other organisations, held six inter-provincial conferences on the more effective use of labour and material resources. Studies carried out by the laboratories covered such areas as ways of achieving a better balance between the regional social and economic development plan and the sectoral plans; socio-economic problems involved in the all-round development of Transcarpathia; rational utilisation of labour resources in the light of scientific and technical progress; and the mechanisation and automation of labour-intensive transport and loading/unloading work.

The results of surveys carried out in 1,500 undertakings and the processing of 30,000 questionnaire forms have enabled the laboratories to make practical proposals to the economic management bodies at the provincial and Republican levels on questions relating to the supply of labour resources for undertakings and industries as well as on ways of using them more efficiently. Generally speaking these proposals have been followed up by appropriate administrative decisions.

It has been shown, for example, that in the assessment of manpower requirements by type and source of supply, surveys of workers' opinions and studies of work organisation, skill profiles and other characteristics can help to determine the true manpower and training needs and the effectiveness of various types of training. In particular, an objective assessment can be made of social factors influencing the turnover of skilled manpower; investigation of a wide range of such factors also makes it possible to discover which

undertakings are training their workers most efficiently and those where training still needs to be improved. Public opinion and sociological surveys help to elucidate workers' motives for preferring this or that occupation and to reveal the social factors underlying such preferences. They also throw new light on the links between the labour resources problem and unfavourable demographic trends. Determined action on the social front to alleviate the demographic situation is an essential component of contemporary economic planning.

The level of management responsible for particular tasks under the provincial "Trud" programme depends on the scale of work involved in their preparation and execution: these tasks can range from isolated groups of measures to the programmes for undertakings (or organisations), districts and towns and the province as a whole. The management bodies can be divided into three basic groups.

*Higher-level bodies.* A provincial co-ordination council is responsible for overall direction of the planning and implementation of the programme, and for the systematic monitoring of its progress. It provides general guidance to the undertakings and organisations through the intermediary of the urban and district co-ordination councils (see below). The Provincial Executive Committee is given regular progress reports, and the five-yearly results are discussed by the council. The provincial labour department and the provincial planning committee monitor the progress made in implementing the programme by the various trade associations, industrial complexes, undertakings and organisations and present their findings to the provincial co-ordination council, which takes any necessary decisions; these are then submitted to the Provincial Executive Committee for approval.

*Intermediate-level bodies.* The urban and district co-ordination councils draw up and systematically monitor the implementation of the programme measures at the territorial (urban and district) level and also in the undertakings and organisations; they hear reports from the undertakings and organisations on the progress made in carrying out the programme and they provide guidance and take action to rectify delays in the fulfilment of the programme objectives. The decisions of the co-ordination councils are submitted to the urban and district executive committees for approval.

The urban and district executive committees of the Soviets of People's Deputies hear regular reports on the progress made in executing the programme and submit their findings to sessions of the Provincial Soviet for discussion. Industrial branch administrations, trade associations, combines and industrial complexes review the fulfilment of the "Trud" programme in the undertakings and organisations under their jurisdiction and take steps to correct deviations from the approved programme indicators.

*Lower-level bodies.* Various services of the undertakings and organisations – the planning section, the labour and wages department, the chief engineer's department, etc. – and the so-called "social" bodies – the workers' inspectorate, the bureaux of economic analysis, the council for

scientific work organisation, etc. – participate in planning and executing the various programme measures and monitoring the progress made. Each body is responsible for a specific group of programme tasks, and full reports are submitted to the urban or district co-ordination council. The results of the planning exercise and the implementation of the programme are widely publicised with a view to stimulating the process of socialist emulation.

### Programme targets

The “Trud” programme for Lvov province includes the following objectives to be attained by the end of 1985:

- increasing labour productivity in the major branches of production by 16-26 per cent over the 1980 level; this productivity increase should account for 84 per cent of the projected rise in industrial output and 95 per cent of the rise in the volume of construction work and agricultural output;
- making labour savings of not fewer than 200,000 persons and redeploying large numbers of them to other jobs;
- reducing avoidable losses of working time by not less than 30 per cent by comparison with 1980, and idle time during shifts by not less than 20 per cent;
- reducing losses of working time as a result of illness by 20 per cent thanks to improved working conditions and health and hygiene measures;
- reducing the level of labour turnover in industry by 1.7 percentage points.

The programme provides for a reduction in the proportion of manual workers in industry (not counting machine-setters and repairmen) from 39.5 to 33.8 per cent, or almost 1.2 percentage points a year. This will be achieved by setting up highly mechanised workshops and undertakings and transferring workers from manual to mechanised jobs in existing undertakings.

During the eleventh five-year period Lvov province plans to establish 480 fully mechanised and automated industrial units, more than 400 mechanised and automated production lines, and 305 numerically controlled machines. It is also planned to mechanise a significant amount of hoisting and transporting work as well as warehouse jobs. The number of mechanised warehouses will be increased by 215, or 56 per cent, providing an additional 221,000 square metres of floor space.

In construction it is planned to increase labour productivity mainly through wider use of industrial building methods based on the use of strong new materials, advanced prefabricated elements and high-quality finished parts.

Agricultural output will be increased by introducing more efficient methods of farming and livestock rearing, strengthening the material and

technical base of the collective and state farms, land improvement, more extensive use of chemicals, and specialisation and concentration of production through inter-farm co-operation and agro-industrial integration. The special integrated National Foodstuffs Programme also provides for improving the efficiency of agricultural production and includes specific measures for its long-term development.

Increased labour productivity obviously reduces the amount of human labour needed for the production of a given quantity of goods. For example, in 1980 in Lvov province it took approximately 72 workers to produce 1 million roubles' worth of industrial output; the 1985 target is only 57 workers. The corresponding figures for construction work are 121 and 101 and for agriculture 367 and 286. Each per cent of increase in labour productivity will save the labour of 4,500 workers in industry, 400 in construction and over 2,000 in agriculture.

Intensive efforts are also being made to improve work organisation and working conditions. Special attention is being devoted to the introduction of the team system as a basic means of organising work and improving labour productivity. The programme provides that by the end of the eleventh five-year period 58 per cent of industrial workers will be working in teams compared with 23 per cent in 1980. It is also intended to step up the introduction of industry-wide and inter-industry standards concerning the organisation of work stations, multi-skilling and improved labour norm-setting.

Factor analysis shows that 14 per cent of the increase in labour productivity under the "Trud" programme may be expected to result from the introduction of scientific methods of work organisation and management, 5 per cent from the training and further training of skilled personnel, and a further 5 per cent from improved conditions of work, life and rest. The remaining 76 per cent will be achieved by raising the technical level of production (introduction of advanced technology, automation, modernisation of equipment, etc.) and changes in the volume and structure of production.

Similar "Trud" programmes for 1981-85 have been drawn up for the other western provinces. In Ternopol, for example, it is planned to increase labour productivity in the principal branches of production by between 18 and 32 per cent by the end of 1985. Even more importance will be attached to such tasks as modernising production methods, which is expected to account for about 60 per cent of the increase in labour productivity in industry and construction and more than 40 per cent of that in agriculture. In this province, too, great attention is paid to such factors as the introduction of scientific work organisation, raising workers' skills and improving conditions of work, life and rest. In agriculture – one of the leading branches in Ternopol – it is planned to set up 143 totally mechanised and automated farms and 606 livestock-raising stations and to bring the number of specialised harvesting detachments up to 1,370 and those for laying in

fodder up to 350, involving a total of over 33,000 workers. The number of machine operators and other skilled agricultural workers will also rise considerably: it is planned to train them for the most part in vocational-technical schools.

### Analysis of results

We are now in a position to analyse some of the results of the programme during the first three years of its operation.

The ultimate aim of the regional "Trud" programme is, as we have seen, to achieve the targets laid down in the five-year plan for increases in industrial and agricultural production, the construction and commissioning of production units, as well as the development of the necessary infrastructure – all this against a background of limited growth of labour resources.

As was envisaged both in the economic and social development plans and in the "Trud" programme itself, industry in the western provinces of the Ukrainian SSR has developed at a rapid rate, surpassing the average indices for the Republic as a whole. Between 1980 and 1983 industrial production increased by 11.5 per cent in Ivan-Frankovsk, 18.4 per cent in Rovno and 23.5-24 per cent in Ternopol and Volynia. The rates of growth of industrial production in these first three years are generally higher than those achieved in the last year (1980) of the previous five-year plan. In Volynia, for example, the average annual rate for 1981-83 was 7.4 per cent compared with 0.7 per cent in 1980, and in Rovno 5.8 as against 0.3 per cent.

Despite the unfavourable climatic conditions in 1981-82, the average 1981-83 gross agricultural output of collective and state farms in the seven western provinces exceeded the average annual output for 1976-80 by amounts ranging from 1.4 per cent in Rovno to 6.2 per cent in Transcarpathia.

Given the severely limited numbers of industrial production workers, the significant increases in industrial output noted above had to be achieved mainly through more efficient use of labour resources. The growth in industrial labour productivity over the period 1981-83 surpassed the programme targets in a number of provinces, reaching 18.6 per cent in Volynia and Ternopol, 14.8 per cent in Transcarpathia and 11.0 per cent in Rovno. These increases accounted for between 62 and 92 per cent of the increase in industrial output and saved the labour of almost 130,000 workers. Improved labour productivity accounted for 74-100 per cent of the increase in the volume of construction work during these three years and for labour savings of almost 18,000 workers. Labour productivity on collective and state farms increased between 1981 and 1983 in comparison with the tenth five-year period by rates ranging from 5.2 per cent a year in Ternopol to 16.2 per cent in Ivan-Frankovsk, with labour savings in all the western provinces totalling 100,000 workers.

The decisive factor in saving labour and increasing its productivity is the acceleration of scientific and technological progress and the introduction of

more advanced production methods, the main thrust of which is to reduce the input of manual labour. During the years 1981-83 more than 1,970 fully mechanised and automated industrial units and approximately 1,450 mechanised and automated production lines were put into operation in the western provinces, which is considerably more than the targets laid down in the "Trud" programme.

Mechanisation and automation and the improvement of production technology led to a significant reduction in the use of manual labour in 1981-83. In Lvov province the proportion of workers doing manual jobs dropped by almost 4.5 percentage points in industry. During these three years 138,000 workers in the western provinces were transferred from manual to mechanised jobs, compared with the "Trud" target of 125,000.

The release of workers from manual and physically arduous jobs has an added bonus in that it increases the effectiveness of social and organisational measures to improve labour productivity which, together with the introduction of team work and remuneration according to actual output, fulfil the important social functions of stabilising the undertakings' workforce, reducing losses of working time, and so on. In this connection the years 1981-83 saw a definite downward trend in labour turnover figures and in production losses due to turnover.

It is results such as these that testify to the effectiveness and real value of the "Trud" programme.

Finally, it should be emphasised that the social orientation of the programme demands that constant attention be paid to regional particularities and the study of public opinion. It is only under these conditions that it is possible to ensure more effective utilisation of labour resources and to satisfy the economy's future needs for high-quality manpower.