


Central Institute for Labour Protection – National Research Institute

Directional thematic plan
for research and development work
in 2024-2025

Warsaw, November 2023



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INTRODUCTION

The Central Institute for Labor Protection - National Research Institute (CIOP-PIB), as a scientific entity under the authority of the Ministry of Family and Social Policy, directs its scientific research and implementation activities to actively support the Ministry in carrying out its tasks related to the following two branches of government administration, as defined in the Act of September 4, 1997 on branches of government administration (consolidated text, Journal of Laws 2022, item 2512):

- labor - in matters related to labor relations and working conditions (Art. 21 par. 1 item 2),
- social security - with respect to matters related to social and vocational rehabilitation of disabled persons (Art. 31 par. 1 item 6).

The Institute conducts scientific research and development work in the field of engineering sciences, in the discipline of environmental engineering, mining and energy, in the subject of human protection in the working environment and ergonomics. The Institute also carries out scientific research and development work in two other scientific fields: medical and health sciences as well as social sciences. CIOP-PIB's scientific research and development work aims to increase the quality of work and life and improve health and social security.

Comprehensive implementation of the aforementioned scientific research and development work is carried out in order to:

- 1) develop innovative solutions supporting the improvement of working conditions, safety and protection of health and life,
- 2) prevent social exclusion of various workers groups and prolong professional activity,
- 3) develop innovative personal and collective protective equipment using the latest technologies,
- 4) develop modern tools, including those using VR and AR techniques, for application in educational and rehabilitation activities,
- 5) acquire new knowledge in the field of human protection in the working and living environment.

- Re 1)** Comprehensive assessment of hazards in the workplace is possible thanks to the Institute's highly competent staff, recognized by international and national scientific communities, representing many scientific disciplines, including engineering and technical sciences, medical and health sciences, and social sciences, among others. The staff's potential, together with its globally unique laboratory and mobile test stands, allows **the Institute to carry out interdisciplinary work that includes: identification, study of human impact, assessment and elimination of all occupational hazards, including new hazards accompanying economic development (e.g., new energy sources, digitization, artificial intelligence), hazards caused by climate change and new psychosocial hazards.**
- Re 2)** Conducting scientific research and development work aimed at:
- **ensuring appropriate psychosocial and physical working conditions, well-being, work-home balance, for young and older workers, mothers, as well as for those working in new forms of employment,**
 - **strengthening appropriate mechanisms for labor activation of people with or at risk of disabilities by developing and preparing for the implementation of a model for comprehensive diagnosis of occupational competence and psychosocial and physical fitness.**
- Re 3)** Conducting scientific research and development work aimed at **improving the protective and utility functions of personal protective equipment, resulting from the latest advances in materials engineering (e.g., bionic-inspired, self-repairing, shape-memory materials) and information technology, as well as taking into account the needs for rapid response to problems associated with emerging threats, such as epidemic and civilization threats.**
- Re 4)** Conducting research and development work to **design innovative training applications based on virtual reality and augmented reality technologies, tailored to the needs of various professional groups, responding to the challenges arising from the implementation of the Industry 4.0 concept.** Other training tools based on virtual reality techniques are machine and vehicle simulators for training employees in industries with a high number of occupational accidents, such as mining.
- Re 5)** The acquisition of new knowledge in the field of human protection in the working and living environment aims to identify and study the impact of new physical, chemical, biological and psychosocial hazards on humans.

The results of the above activities effectively assist the Ministry of Labor and Social Policy in implementing the state policy directed at improving safety and working conditions and shaping a culture of safety in the working and living environment.

The dynamically developing potential and experience of the Institute's staff provide **outstanding and indispensable support for the activities of the Ministry of Labour and Social Policy in both European and national forums. This support includes, among other things, establishing new, amending existing and interpreting regulations and legal requirements in the area of occupational safety, as well as conducting the work of the Interdepartmental Commission for Maximum Admissible Concentrations and Intensities for Agents Harmful to Health in the Working Environment.**

An important support for the Ministry of Family and Social Policy in the European forum is the Institute's contribution to the cyclical reports for the European Commission on the practical implementation of occupational safety and health directives. In addition, between 2024 and 2025, the Institute will support the Ministry of Labour and Social Policy in preparing and implementing a program on occupational safety and health to be carried out during Polish presidency of the European Union in the first half of 2025.

BASES AND THEMATIC DIRECTIONS FOR RESEARCH AND DEVELOPMENT WORK FOR 2024-2025

Thematic directions - basics

The topics of scientific research and development works, in accordance with the statutes of CIOP-PIB and the *Perspective directions of scientific, development and implementation activities for 2021-2030*, are established on the basis of:

1. a systematic analysis of the state of safety and working conditions and the socio-economic trends and needs resulting from this analysis,
2. the activity plan and objectives of the Ministry of Family and Social Policy and other ministries (including: Ministry of Health, Ministry of Economic Development and Technology, Ministry of Science and Higher Education), public administration bodies (including: Social Insurance Institution - ZUS, Agricultural Social Insurance Fund - KRUS, State Fund for the Rehabilitation of the Disabled - PFRON), as well as institutions controlling working conditions (State Labour Inspection - PIP, State Sanitary Inspection - PIS),
3. positions of the Labour Protection Council at the Parliament of the Republic of Poland,
4. international strategies related to safety and protection of humans in the working environment.

Between 2024 and 2025, the Institute's **research and development work is planned to be funded** from four main sources:

1. from the funds of the State Budget within the framework of the implementation of the National Programme for the Improvement of Safety and Working Conditions (Phase VI of the National Programme),
2. from a subsidy granted by the Minister of Education and Science,
3. from funds obtained under national and international programmes for the implementation of research projects and development works (i.e. European Funds, Horizon Europe, National Health Programme, National Recovery Plan),
4. from agreements signed with external entities, obtained through participation in tenders and calls for proposals.

Thematic directions - plan

Between 2024 and 2025, it is planned that **the Institute will carry out scientific research and development work on the formulation and dissemination of new solutions for the shaping of a modern system of human protection in the working environment and the improvement of social security through the implementation of:**

- 1) National Programme for the improvement of safety and working conditions (phase VI)

- 2) statutory scientific activity,
- 3) projects implemented with funds obtained from national and international programmes,
- 4) agreements signed with external entities for the implementation of expert work and scientific research.

Re 1) National Programme for the improvement of safety and working conditions (phase VI), the implementation of which will be continued in 2024 and 2025. This programme **supports the implementation of the obligations of the Government of the Republic of Poland resulting from membership of the European Union and fulfils the function of the National Strategy in the field of occupational safety and health**. It includes the implementation of the services of the state and research and development projects.

The topics of the services of the state tasks in the period 2024-2025 will include the following issues:

- methods for testing and assessing measures and equipment to protect against harmful factors in the working environment,
- prevention of risks associated with new forms of work and the use of Artificial Intelligence systems,
- testing and assessment of exposure to harmful and arduous working environment factors,
- assessment of mental and physical health and fostering health-promoting behaviours,
- development of online databases and information and training services,
- innovative tools for education, training and support of occupational health and safety management, using VR and AR techniques, including for use in educational and rehabilitation activities,
- knowledge transfer through publications, dissemination activities and social media.

The themes of the research and development projects planned for implementation at the Institute in 2024-2025 include:

- new materials and technologies for personal and collective protective equipment,
- monitoring of working environment parameters using Internet of Things and Artificial Intelligence technologies,
- criteria, test methods and equipment for measuring and assessing working environment factors,
- assessment of psychophysical risk and prevention of social exclusion.

Re 2) Statutory scientific activities will be carried out at the Institute within the framework of the subsidy granted by the Ministry of Education and Science. The topics of the tasks planned to be carried out in 2024-2025 will be from the field of:

- development of principles for the identification, assessment and mitigation of risks of chemical, dust and biological factors in the working environment,
- development of principles for the identification, assessment and mitigation of risks of physical factors in the working environment,
- adaptation of workstations to human psychophysical capabilities,
- work aimed at developing scientific and dissemination activities.

Re 3) Projects implemented with funds obtained from national and international programmes (i.e. European Funds, Horizon Europe, National Health Programme, National Recovery Plan) in the period 2024-2025 will address:

- preventing labour market exclusion and ensuring appropriate psychosocial and physical working conditions,
- using advanced information technologies and artificial intelligence to improve efficiency and working conditions,
- healthy, friendly environment and resilient food production and distribution systems,
- substantive support to the Central Office of Measurements in the development of methods for the measurement of physical factors.

Re 4) Agreements signed with external entities for the implementation of expert work and scientific research will be implemented successively as they are undertaken. For the years 2024-2025, continuous expert participation in programmes implemented by external institutions (ZUS) is planned, as well as successive acquisition of orders as a result of participation in tenders/competition procedures. This activity will include research, expert opinions, analyses, opinions, recommendations and guidelines, as well as consultations and training in the field of occupational safety and health, using the results of the scientific and research work carried out. As a part of this activity, the Institute conducts works that provides support to companies and institutions in acquiring knowledge on the hazards occurring at workplaces and the possibilities of their elimination or reduction, as well as conducts laboratory tests of products for the purposes of their certification and tests of parameters of the work environment and factors related to safety and health protection of employees.

In addition, in 2024-2025, it is planned to continue the following activities:

1. **standardisation, in the field of occupational health and safety and ergonomics** – carried out at the Institute in accordance with the rules resulting from the Standardisation Act of 12 September 2002 (Journal of Laws No. 169 item 1386, as amended), including:

- substantive and organisational work,
- participation of experts from the Institute in CEN and ISO technical committees and working groups,

2. **Interdepartmental Commission for Maximum Admissible Concentrations and Intensities for Agents Harmful to Health in the Working Environment** - including substantive and organisational work,

3. **related to international cooperation in science and technology** - including:

- participation in European Union programmes in the field of research and innovation, according to the topics of announced calls for proposals,
- cooperation with foreign institutes, mainly within the PEROSH network, including participation in projects, seminars, webinars and scientific internships,
- cooperation with international organisations, including network structures (EU-OSHA, EUROSHNET),
- participation in the work of the European Commission and other EU bodies (including the ACSH and EU-OSHA Management Board).

A detailed description of the ongoing research and development topics will be presented in the CIOP-PIB annual activity plans.

In view of the ongoing development of global threats (e.g. climate change) and the new risks arising from the dynamic development of digitisation, which is becoming increasingly prevalent in the working and living environment, a cyclical update of the directional thematic research and development plan for the period up to 2025 will be carried out.

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