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Invention support and commercialization in the field of agriculture and food production of scientists from public research centres on the example of Poland

Piotr Jurga

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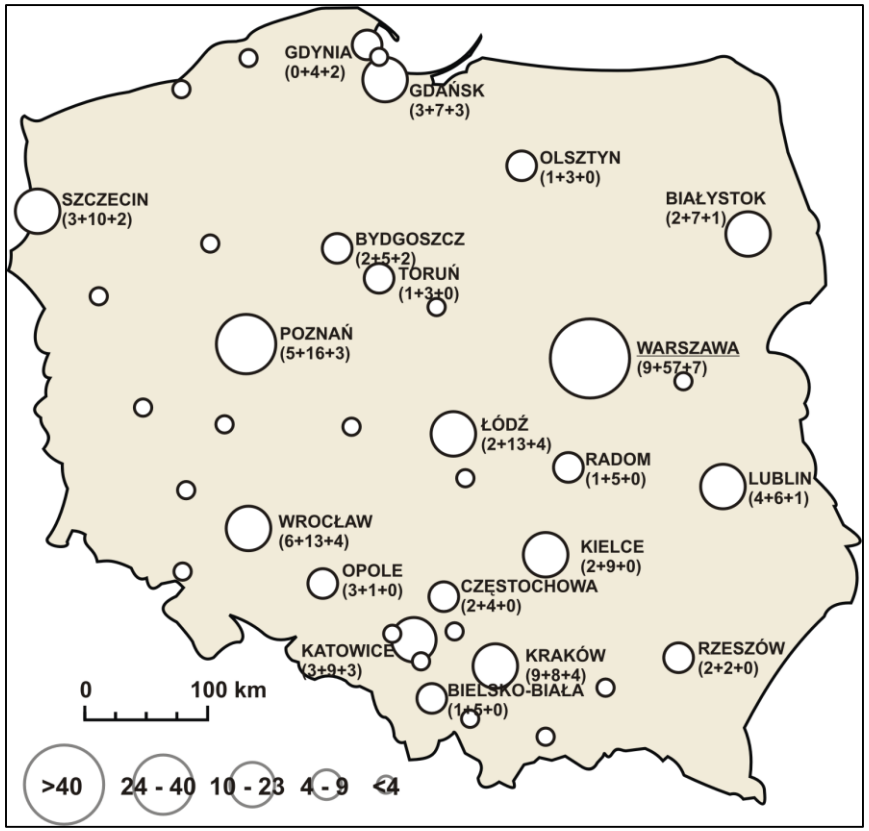
Characteristics of public research centres in Poland

Higher education institutions (e.g. Universities)
Around 430

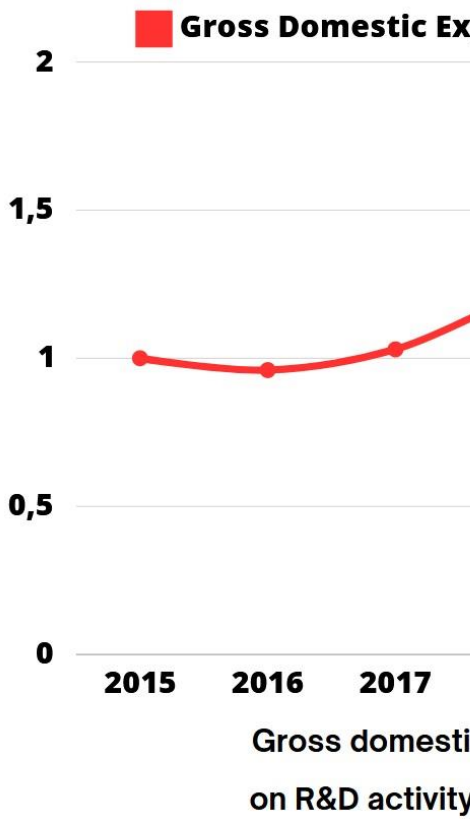
Sectoral research institutes (ministerial)
Around 200

Scientific institutes of the Polish Academy of Sciences (PAN)
Around 70



In Poland approx. 1,000 units are subject to evaluation - faculties of universities, research institutes and institutes of the Polish Academy of Sciences. Units are evaluated by the Research Units Evaluation Committee. The evaluation consists of assigning one of four categories: from A+ for outstanding units to C denoting unsatisfactory level. Category A+ has been given only to 4%/5% of all institutions in Poland.

Accessible funds to support the commercialisation of research



R&D intensity (GERD) in the EU27 was 2.27% of GDP in 2021

Centers for Technology Transfer

The objective of TTO's are:

- supporting research by academics and students at universities,
- shaping an environment conducive to innovation and commercialization
- promoting cooperation between industry and the scientific sector, or making laboratories and other research resources available to universities,
- Assistance in the development and transfer of new technologies to industry

How was it in 2013?

According to a study conducted by the Supreme Audit Office in 2013., where sixteen universities were analysed. Out of almost 5,000 research projects worth around 730,000, only 95 projects were commercialised.

How is it currently?

The system of intellectual property management or the change of existing procedures concerning the technology transfer process **is working better and better in practice**, giving a real chance for the success of the organisation. The services that are realised by TTOs are characterised by **increasing professionalism** and thus the parameters and results realised by them are more and more promising. **The sales from the implemented scientific projects are becoming more and more popular** and thus other innovation centres, such as technology parks or academic business incubators, are also being established.

The Polish Association of Centers for Technology Transfer (PACTT.pl)

The Polish Association of Centers for Technology Transfer (PACTT) is a voluntary association of representatives from units responsible for the management and commercialisation of intellectual property from Polish universities, research institutes and the Polish Academy of Sciences. The agreement is nationwide, currently has more than 80 members, and its ranks are gradually being joined by new units.

Main objectives:

Integration of the professional community dealing with knowledge and technology transfer in an academic setting.
Exchange of knowledge, experience, operating standards and good practices.
Development of professional competencies of technology transfer centre employees.
Cooperation in the commercialisation of research results.
Joint representation of Covenant members to public administration bodies, employers' associations and other entities working for innovation and cooperation between science and business.

The Polish Association of University Knowledge Transfer Companies (PSC)

The Special Purpose Companies Agreement (PSC) was established on 8 January 2014 between special purpose companies of scientific entities established in accordance with the provisions of the Higher Education Act. The PSC is a forum for the cooperation of 34 university SPVs from all over the country, established for the commercialisation of the results of research conducted at universities and research institutes and the implementation of research commissioned by companies. SPCs of universities and research institutes are vehicles that support the creation of spin-off companies, in which they acquire shares on behalf of the universities. SCs cooperate with investors, business angels and innovative entities ready to implement scientific technologies.

PSCs in figures:
Number of completed R&D and consultancy projects: **2900+**
Number of companies and administrations for which projects have been carried out: **1900+**
Number of spin-off companies established by PSC members: **230+**
Funds raised from investors by spin-off companies established: 20 million EUR
Funds gained from research grants by created spin-off companies: 40 mln EUR

Ministerial 'Innovation Incubator' programme

Project implementation period: 01.01.2016 – 30.06.2019

Initial project value: around 12.8 mln EUR, **final project value** 38 mln EUR

Aim: Promotion of scientific achievements, increasing their impact on the development of innovation and strengthening cooperation between the scientific community and the economic environment by increasing the human resources potential of the R&D sector through support for Innovation Incubators - Technology Transfer Centres at universities and research institutes, special purpose vehicles and consortia of these entities.

1699 Number of R&D works carried out

414 ... and in environmental or ecological terms

3919 Number of patent applications filed

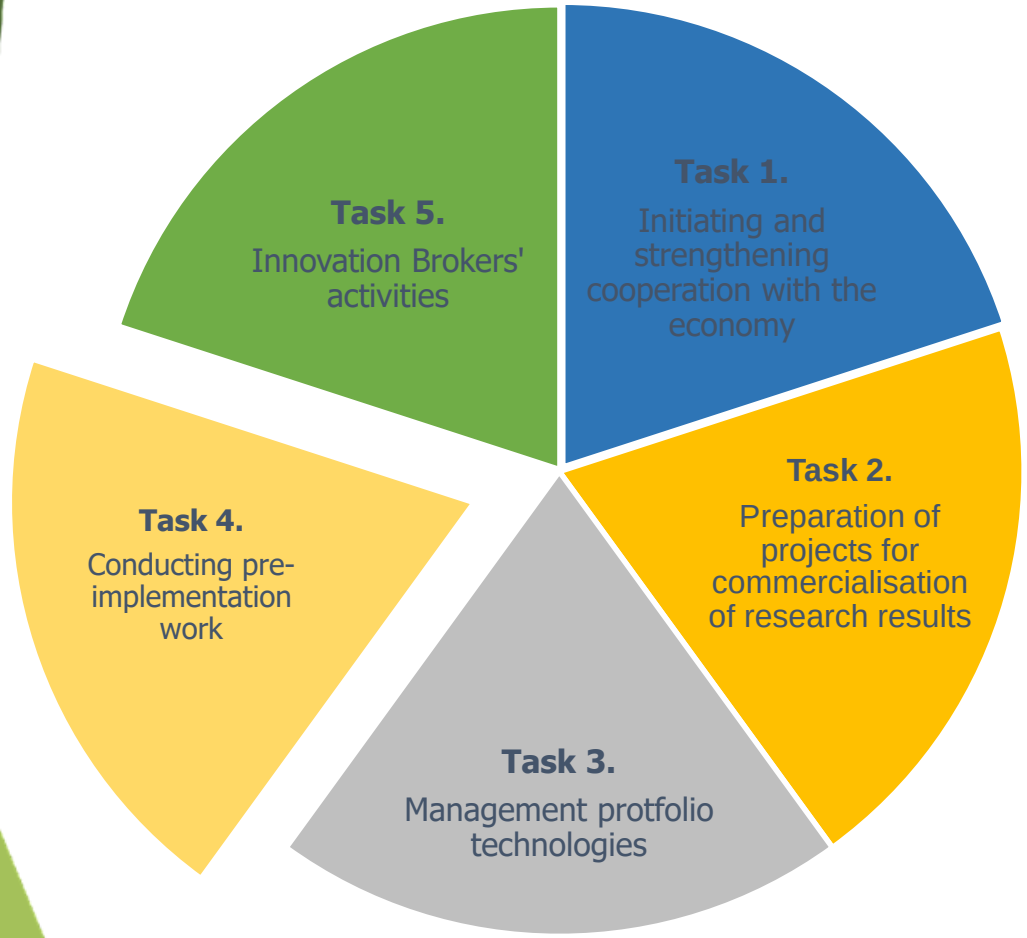
700 ... and in terms of eco-innovation

7138 Number of established forms of cooperation between the scientific community and the business environment (licensing, sale, lease, research service agreements)

177 Number of spin-off companies created

10 069 Number of people supported in terms of R&D staff development

Poznań University of Life Sciences & IUNG study case (1)



AgriBioFood PULS IUNG 4.0

Project co-financed under the programme of the Minister of Science and Higher Education (MNiSW) entitled **Innovation Incubator (ININ 4.0)**

Consortium composition: Poznań University of Life Sciences (Leader) & Institute of Soil Science and Plant Cultivation - National Research Institute (Consortium Member)

Project implementation period: July 2020 - December 2023

Poznań University of Life Sciences & IUNG study case (2)

Pojects conducted in IUNG:

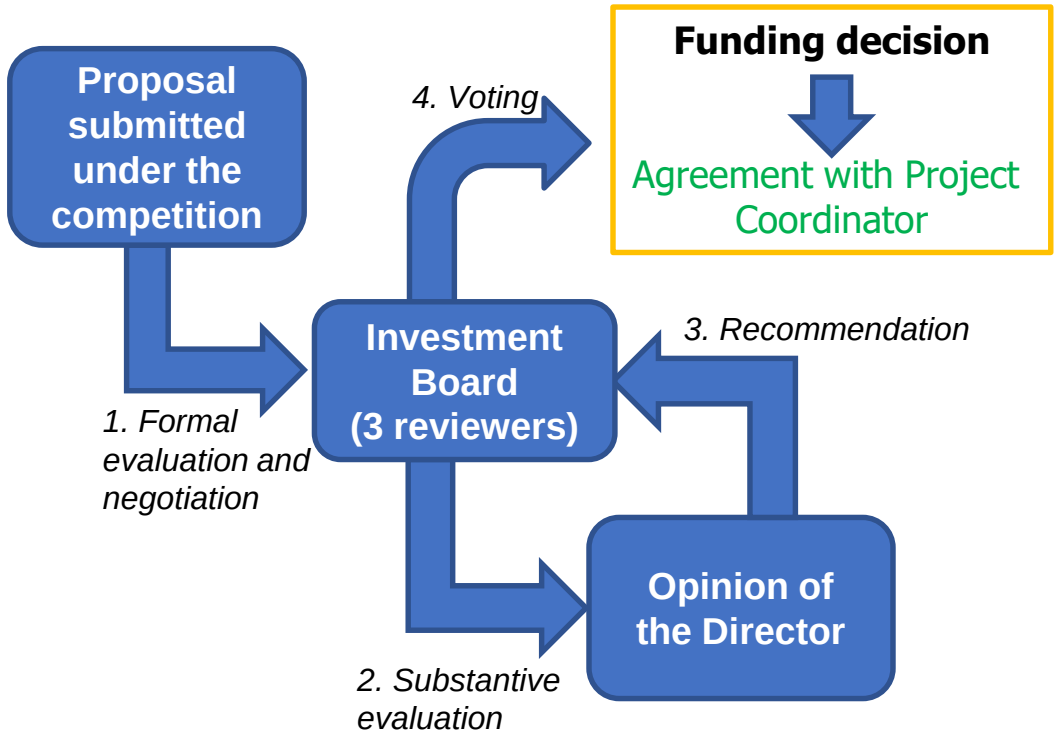
- **Application of microorganisms** and seed pelleting to improve soil fertility and plant yield in organic and conventional cultivation of legumes; Project Leader: prof. Anna Galazka
- **Development of an innovative technology** for the production of microbially enriched biofertilisers to support the growth of celery and pepper vegetables under drought conditions (KOMPO-MIK); Project Leader: Grzegorz Siebielec
- **AsysteNt+ Creation of a mobile application** to support agricultural producers in meeting obligations arising from the Nitrates Directive and environmental requirements; Project Leader: Beata Jurga

Application for funding of the Pre-Implementation Work Project

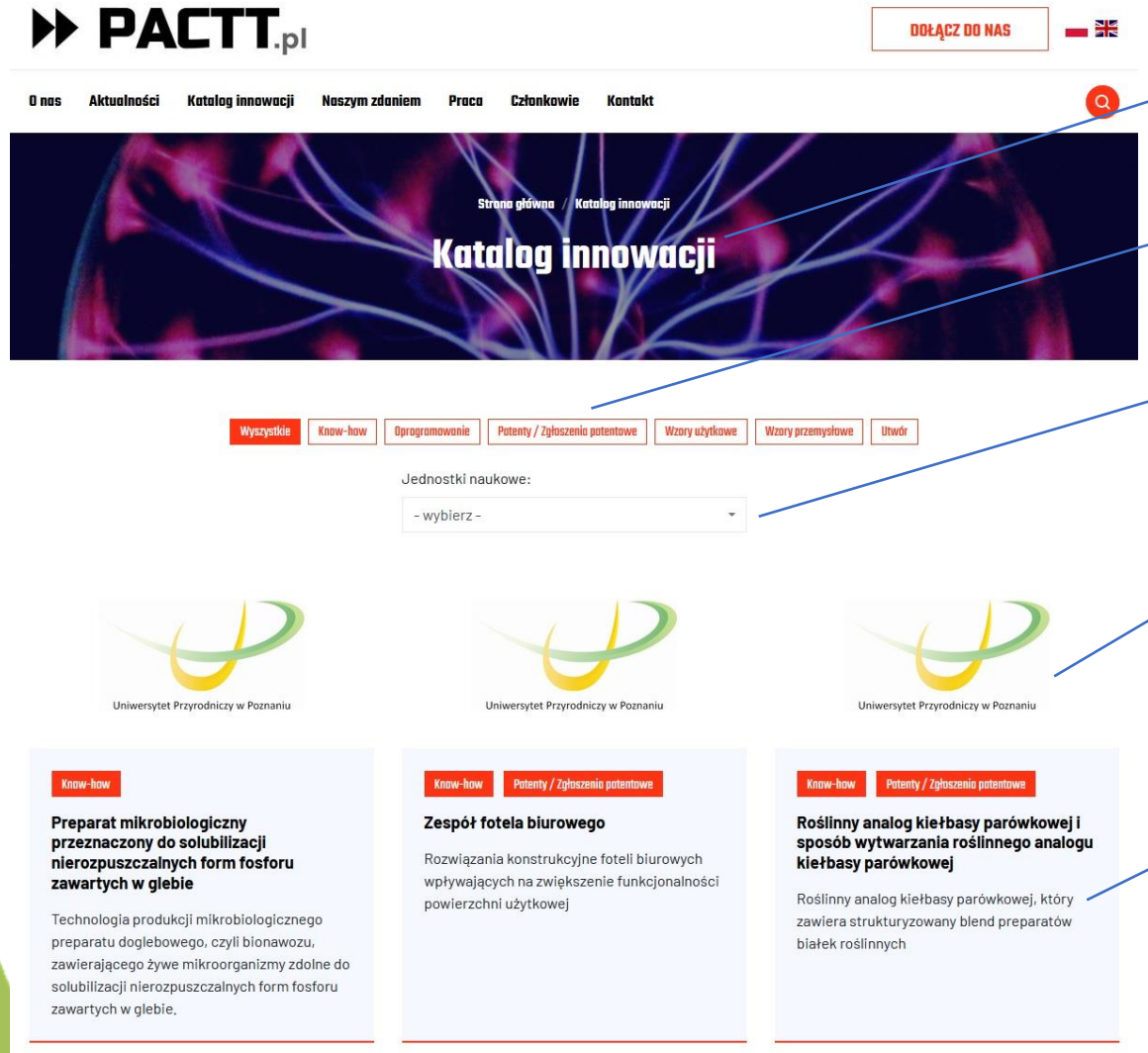
POINTS:

- Project description: ... / 30 points
- Patent application: ... / 5 points
- Market analysis: ... / 25 points
- Project timetable: ... / 10 points
- Project cost estimate: ... / 10 points
- Applicant's experience: ... / 10 points
- Acquisition of a letter of support from the entrepreneur: .... / 10 points

Total number of points: 0-100 points



PACTT Technology Database



Catalogue of innovations

Type of technology: e.g. know-how, software, patents/patent applications, utility models, industrial designs, work

Research institution (please choose)

Research institution (e.g. Poznań University of Life Sciences)

Technology:
- Microbial preparation designed to solubilise insoluble forms of phosphorus contained in soil,
- Vegetable analogue of sausage and method of production of vegetable analogue of sausage,
- Office armchair assembly.

https://pactt.pl/katalog-innowacji

Main conclusions

- Despite the extensive system of public research institutions in Poland, only a certain percentage of research centres commercialise research results,
- In addition to the existing many funding sources for research, there are targeted support for Technology Transfer Centres, which support the commercialisation of research,
- Some of the research carried out by scientists fits into the concept of bioeconomy – please check tha PACTT database!
- An entrepreneur does not need to possess a research and development center to enter into cooperation and commercialize a technology,
- The assessment for evaluation should change - it refers to the patents actually granted, not to commercialisation or the actual impact of a scientific discovery on society and the economy.
- There are many barriers that prevent increasing the level of commercialization of research created in public R&D centers - one of them is collaboration,
- Organizations such as PACTT or PSC, which bring together Polish R&D centers and SPVs derived from public scientific institutions, support the key element of cooperation,
- Collaboration, including the possibility of finding receivers for emerging technologies and their commercialisation, is also supported by established Hubs, including the National Bioeconomy Hub in Poland, which we established last year. I invite you to watch a short film from inauguration!

National Bioeconomy Hub in Poland

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Thank you for your attention

Piotr Jurga

16.02.2024, Pulawy, Poland