

# **STATE OF THE ART OF CLIMATE CHANGE ADAPTATION AND MITIGATION AT THE POZNAN AGGLOMERATION (POLAND)**

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## Introduction

This report is one of the first outcomes of Project TeRRIFICA that helps identify the state of the art of climate change adaptation and mitigation in Poznań Agglomeration as one of six pilot regions. It contributes to achieving the following objectives:

- to create a comprehensive overview on the state of the art of climate change adaptation research and innovation strategies, tangible climate change adaptation examples and communication strategies and methods at different levels of complexity,
- to create an overview and corresponding information and exchange structures between science, civil society and local government,
- to highlight areas that TeRRIFICA can address and improve,
- to identify useful content for TeRRIFICA from recent and current projects about climate action and climate change,
- to reflect on climate change adaptation ideas and strengths and weaknesses (co-creation),
- to define and adapt supporting innovative outreach and dialogue actions and formats for general public, education, policy makers and the virtual platform, ready for implementation in partner institutions and collaborating organisations,
- to develop common methodologies and recommendations of implementation for Pilots with special focus on social innovation corresponding to SDGs.

Recognition of the current state in the field of climate change adaptation and mitigation activities undertaken by academia and education, local government, civil society and business in each pilot region is helpful to select the relevant case studies for the purpose of accomplishing next TeRRIFICA tasks aimed at enhancement of climate actions as well as strengthening stakeholders engagement and co-creation.

### Abbreviations:

NGOs – non - governmental organizations

CSOs–civil society organizations

SDGs – sustainable development goals

CSR– corporate social responsibility

RRI – responsible research and innovation

SMEs – small and medium enterprises

## Glossary – key definitions

**Climate change** refers to a change in the state of the climate that can be identified (e.g. using statistical tests) by changes in the mean and/or the variability of its properties, and that persists for an extended period, typically decades or longer. It refers to any change in climate over time, whether due to natural variability or as a result of human activity (IPCC).

**Climate change adaptation** means anticipating the adverse effects of climate change and taking appropriate action to prevent or minimise the damage they can cause, or taking advantage of opportunities that may arise. Examples of adaptation measures include: using scarce water resources more efficiently; considering fresh air corridors in urban planning to improve the air quality in cities; and setting aside land corridors to help species migrate. Adaptation strategies are needed at all levels of administration: at the local, regional, national, EU and also the international level. Due to the varying severity and nature of climate impacts between regions in Europe, most adaptation initiatives will be taken at the regional or local levels. The ability to cope and adapt also differs across populations, economic sectors and regions within Europe (Description of Actions).

**Climate change mitigation** refers to a wide scope of efforts to reduce or even prevent the emission of greenhouse gases. These efforts range from changing consumer behaviour to boosting the efficiency of out-dated equipment to the use of newest technologies and renewable energies. Planning a new city can be a means of mitigation as well as the replacement of an old furnace. This means that mitigation often involves fundamental changes in the way individuals and societies as a whole produce and use energy (Description of Actions).

### **Responsible Research & Innovations (RRI) - building blocks:**

- **public engagement** - in Responsible Research and Innovation is about co-creating the future with citizens and civil society organisations, and also bringing on board the widest possible diversity of actors that would not normally interact with each other, on matters of science and technology.
- **open access** - the global shift towards making research findings available free of charge for readers, so-called 'Open access', has been a core strategy in the European Commission to improve knowledge circulation and thus innovation. It is illustrated in particular by the general principle for open access to scientific publications in Horizon 2020 and the pilot for research data.
- **gender equality** - in Horizon 2020 Gender is a cross-cutting issue and is mainstreamed in each of the different parts of the Work Programme, ensuring a more integrated approach to research and innovation.
- **ethics** - For all activities funded by the European Union, ethics is an integral part of research from beginning to end, and ethical compliance is seen as pivotal to achieve real research excellence.
- **science education** - Building capacities and developing innovative ways of connecting science to society is a priority under Horizon 2020. This will help to make science more attractive to young people, increase society's appetite for innovation, and open up further research and innovation activities (European Commission).

**Co-creation:**

Collaborative development of new value (concepts, solutions, products and services) together with experts and/or stakeholders (such as customers, suppliers etc.). Co-creation is a form of collaborative innovation: ideas are shared and improved together, rather than kept to oneself. It is closely connected to – and mentioned alongside – two other buzz-words: “opensource” and “mass-customisation” (<http://fronteer.amsterdam/what-is-co-creation/>).

**A case study is understood as an example of current actions allowing for identification both good and bad practice in climate change adaptation and mitigation. It is related mainly to a pilot region. A case study is focused on a co-creation process.**

# Identification of the state of the art of climate change adaptation and mitigation

## I. GENERAL CHARACTERISTICS OF A PILOT REGION

### 1. Name of the region, its location and a short description (max. 300 words)

#### **Poznań Agglomeration (PL)**

As one of the oldest and largest Polish cities, Poznań is the historical capital of the Wielkopolska Region where the Polish State was born over 1,000 years ago. Today Poznań is an important national and European centre of industry, trade, culture, higher education and science; it is also one of the leading Polish cities in terms of its economy. Its geographic and communication location in Europe and in the country provides the city with a privileged position. Poznań is the meeting place of west-east and north-south transportation routes, including the pan-European transport corridors from Berlin to Moscow and from Gdańsk to Prague. The city is situated half way between Berlin and Warsaw, 160 km from the Polish-German border.

Poznań agglomeration is comprised of Poznań and the 17 neighbouring communes forming a system of two rings surrounding the city and is characterised by a highly urban character of outlying areas, huge demographic potential with possible migration areas, a buoyant and developed labour market, dynamic economy, established transportation network and a high level of attractiveness for tourism. The region benefits from rich natural resources, as 28% of the total region's area is legally protected. In the metropolitan area layout, the characteristic wedge and ring system of greenery can be distinguished. The main green wedges extend from the suburban area to the city center along the Warta river valley and its tributaries, and along the post-glacial valley of 70 lakes.

Poznań agglomeration has developed & implemented a common development strategy and sectoral policies, including social issues management, water and sewage management, waste management, adaptation and mitigation of climate change, flood protection and rainwater management.

### 2. Strategies/agendas/reports developed by the local government

*(please provide max. 3 cases using the criteria below for each example)*

#### Case study 1

**Title:**

**The Urban Climate Adaptation Plan (UCAP) for the City of Poznań to 2030**

**Timeframe:**

2019 – 2030

**Main challenges and goals regarding climate change identified:**

**Challenges:**

- City’s adaptation to climate change, strengthening of resistance to the extreme weather conditions and improving the potential to counteract the outcomes of the climate change, observed within the city.
- By 2030, Poznan will become a modern and functioning metropolitan area, supporting the balanced development of innovative economy, population- and environment-friendly, all thanks to the effective climate change adaptation.
- Improvements to the city inhabitants’ awareness, safety and living conditions in the changing climate.

**Goals:**

- Mitigating the negative impact of extreme thermal conditions, including pollution accumulation (thermal inversions, MWC).
- Lessening the impact of torrential rainfalls, urban flooding, droughts, storms and damaging winds.
- Communicating the general knowledge of climate change and its impact on the greater community.
- Improving the city organisations and institutions’ ability to act against climate change and extreme weather conditions.

**Main indicators (of product/result/impact) applied (MoRRI indicators/SDGs indicators):**

**Examples of indicators of achieving goals and tasks (29 in total):**

- the total area of green-blue infrastructure solutions being introduced
- the ratio of green rail tracks length to the total length of the rail track system
- the length of newly established bike paths
- the ratio of public transport users to the total city population
- the count of the days in the year with over the limit concentration of PM 10 and PM 2.5
- the number of dwellings modernised to improve their thermal properties
- the number of buildings connected to the heat distribution network,
- the number/floor area of newly established buildings with water retention functionality
- city inhabitants’ opinion about the living conditions (survey research)
- city inhabitants’ climate change awareness level (survey research)

**Main actions aimed at climate change adaptation:**

- introduction of local green and blue infrastructure objects into the densely built-up urban areas (green roofs and walls, pocket gardens, water fountains and water curtains, small parks, rain gardens, flower fields, shaded playgrounds)
- introduction of arboriculture into the damaged areas, the establishment of new tree lines along streets and avenues, using wind resistant species. The arboriculture will be developed in degraded areas, i.e. post-industrial estates
- green areas development strategy for the city (city floral diversity improvement, the establishment of common and stable eco-network, taking

into consideration the needs and expectations of the city population in regard to the access to green areas)

- strengthening the biotical, hydrological and climatic properties of existing parklands, their development, and establishing new park areas
- perforating of existing sealed road surfaces, the introduction of porous and heat-repelling road surfaces
- protection and redevelopment of existing waterways and reservoirs to rationally manage the rainwater, focusing on the management of torrential falls
- establishment of water retention reservoirs system with water treatment capabilities
- establishment of the roadways drainage system to aid with rainwater removal and prevent flooding
- establishment of green-blue infrastructure elements, aiming at the reduction of surface outflow, filtering and in-situ storage of torrential rainfalls, for the use during dry seasons
- construction of complex urban water drainage system supplying 20 reservoirs, using natural methods of water retention
- introduction of water management practices handbook
- promotion of proper management of flood-, fall- and melt-waters, aimed at the improvement of water retention in local reservoirs (social campaign)
- establishment of modern, effective weather warning system
- introduction of urban planning guidelines into planning documents, concepts and projects, aimed at the improvement of urban area preparation for adverse weather conditions
- consecutive improvement to the medical services standards (systematic aged care)

**Main actions aimed at climate change mitigation:**

- reduction of ground level vehicular emissions through administrative and technical measures:
  - ✓ traffic management prioritising public transport, limitation in private vehicles traffic, increase to the parking fees structure in the city centre, construction of new tram lines, development of metropolitan railway system, expansion of existing Park and Ride facilities
  - ✓ expansion of the bicycling infrastructure (bike parking and bike hire facilities) including combined pedestrian and bicycle laneways in the city centre
- emissions reduction from heat generation plants – technical measures transforming the heat generation industry: replacing solid fuel-powered plants with modern plant systems powered by renewable energy sources, connecting individual buildings to the municipal heat distribution network, reducing losses in the heat transfer infrastructure (thermal isolation)
- reduction of heat energy requirements for thermal comfort (thermal isolation of buildings)
- promoting energy-conscious community (rational energy usage, reducing energy consumption, the social campaign against refuse burning in individual heat generating devices)

<p><b>Are the guidelines for operationalization of activities related to the climate change provided? If yes, please describe them.</b></p> <p>The Urban Adaptation Plan establishes:</p> <ul style="list-style-type: none"> <li>– the adaptation plan introduction schedule</li> <li>– the adaptation plan introduction rules (bodies responsible for the tasks introduction and the introduction schedule, financing framework, monitoring measures, the guidelines for the evaluation and actualisation of UCAP). The progress in task completion is to be reported biannually. The report needs to provide the information about initiated, prepared for realisation and completed tasks.</li> </ul>
<p><b>Indicate the SDGs relevant for the region:</b></p> <ul style="list-style-type: none"> <li>– Goal 3: Good health and well-being</li> <li>– Goal 7: Affordable and clean energy</li> <li>– Goal 11: Make cities and human settlements inclusive, safe, resilient and sustainable</li> <li>– Goal 13: Climate Action</li> </ul>
<p><b>Is there a need for cooperation between different groups of stakeholders articulated/described?</b></p> <p style="text-align: center;"><input checked="" type="checkbox"/> YES <input type="checkbox"/> NO</p>
<p><b>If YES, mark the appropriate stakeholder groups and describe them</b></p> <p><input checked="" type="checkbox"/> local government <input checked="" type="checkbox"/> civil society <input checked="" type="checkbox"/> academia &amp; education <input checked="" type="checkbox"/> business</p> <p><b>Short description of stakeholders:</b></p> <ul style="list-style-type: none"> <li>– representatives of the City Hall responsible for particular sectors - faculties for environmental protection, spatial planning, socio-economic development, crisis management, social assistance, investment, transport and greenery</li> <li>– municipal companies - Veolia Energia, Public Transport Authority, Municipal Roads Authority, Aquanet S.A., Municipal Green Management</li> <li>– representatives of the government (Regional Directorate for Environmental Protection, The Provincial Inspectorate for Environmental Protection, Provincial Sanitary-Epidemiological Station, The Provincial Water Management Authority)</li> <li>– representatives of scientific units and universities</li> <li>– residents' representatives</li> <li>– representatives of non-governmental organizations</li> <li>– representatives of entrepreneurs whose activities may be disrupted due to climatic risks</li> </ul>
<p><b>Describe the forms of cooperation between stakeholder groups or the ways of their involvement in climate actions (e.g. public meetings, local workshops, focus groups) (maximum 3000 characters including spaces):</b></p>

**Forms and tools of cooperation between stakeholder groups:**

- workshop and consultation meetings organized at particular stages of work on the Urban Climate Adaptation Plan
- organization of workshops consisting of designing and implementing solutions for green and blue infrastructure for representatives of offices, housing co-operatives, property managers and residents
- strengthening and expanding cooperation with non-governmental organizations, the scientific community and entrepreneurs

The inclusion of stakeholders adaptation activities and decision making in the planning process enabled the simultaneous building of awareness and obtaining acceptance for the actions indicated in the Adaptation Plan.

The open formula of the project with the involvement of stakeholders in shaping the UCAP allowed supplementing the expert knowledge with information obtained from specialists from various areas.

**Web link to the document:**

<http://bip.poznan.pl/bip/uchwaly/x-144-viii-2019-z-dnia-2019-04-16,78779/>

**Case study 2****Title:**

**Strategy for Rainwater and Meltwater Management for the City of Poznań (SRMM, the final draft version for consultation)** - sets out actions aimed at the development of a systematic and complex approach to rainwater and meltwater management in Poznań taking into consideration:

- enhancing urban resilience for climate changes by improvements in grey and green infrastructure;
- avoiding droughts and floods;
- reduction of air pollutants (dust);
- increasing the share of urban green areas;
- creating friendly places for residents;
- reuse of rainwater and implementation of circular economy.

A crucial milestone in this process is establishment of one organizational unit capable to plan and coordinate activities in the field of water management and take responsibility for their effects.

**Timeframe:**

A five-year implementation period - starting year depending on the adoption of project by city authorities (potential timeframe 2019-2023).

**Main challenges and goals regarding climate change identified:**

- incomplete inventory of fixed assets used for water management in the city;
- large expenditures on ongoing infrastructure maintenance;
- relatively high occurrence frequency of local flash floods;
- increase in the occurrence frequency of heat waves and droughts;
- city center of Poznań highly sensitive to flooding;

- inefficient prevention of damage related to spills and floods due to runoff of rainwater;
- high average annual costs of damages caused by flash floods and spills from the drainage (over 11 million euro);
- low share of green/blue infrastructure in the city center and districts with tenement housing;
- increase of sealed surfaces in the city.

The key goal of the SRMM is to increase retention and reduce the dangerous, accelerated outflow of rainwater and meltwater to the sewerage system (enhancing prevention of flash flood and drought phenomena). This goal will be achieved through the implementation of actions grouped under 5 strategic goals:

- 1) Organization of a new water management system in the city and assignment of competences.
- 2) Comprehensive monitoring of the urban drainage system and construction of operational tools.
- 3) Increasing the share of green and blue infrastructure in the urban fabric of Poznań.
- 4) Education and promotion in the field of sustainable water management in the city.
- 5) Effective management, planning and monitoring.

**Main indicators (of product/result/impact) applied (MoRRI indicators/SDGs indicators):**

**Exemplar indicators:**

- the frequency of flash floods - number of fire brigade interventions (incidents/year);
- the frequency of spills from drainage systems (incidents/year);
- the average annual costs of damages caused by flash floods and spills from the drainage (PLN/year);
- the costs of expenditures on ongoing infrastructure maintenance (PLN/year);
- the value of water runoff coefficient for technical catchments (ratio);
- the number of buildings at risk of flooding (number/year);
- the number of residents at risk of flooding (person/year);
- the water infiltration ability by types of soils/surfaces in catchments (category of infiltration);
- land use structure in catchments (% share of land use classes);
- green infrastructure in catchments (% share of urban green);
- blue infrastructure in catchments (% share of water bodies and watercourses).

**Main actions aimed at climate change adaptation:**

All of the goals and actions suggested in the project of SRMM are contributing directly or indirectly to the adaptation of the City of Poznań to climate changes affecting urban water management. Below, the selected actions/tasks included in SRMM are presented:

<ul style="list-style-type: none"> <li>- adoption of the organizational model of rainwater and meltwater management;</li> <li>- preparation of a plan for the distribution of competences between individual units;</li> <li>- construction and calibration of integrated hydraulic models for the urban catchments;</li> <li>- identification of surface retention potential and analysis of rainwater/meltwater infiltration possibilities;</li> <li>- preparation of pilot implementations and guidelines for good practices;</li> <li>- preparation of procedures and standards for City Hall departments, supporting the development of green and blue infrastructure;</li> <li>- ensuring continuity of training of personnel responsible for the management of rainwater and meltwater;</li> <li>- education and promotion addressed to professionals, engineers, architects and officials;</li> <li>- long-term education of children and youth;</li> <li>- creation of spatial planning procedures in the field of rainwater and meltwater management;</li> <li>- development of the path to optimal financing of rainwater and meltwater management.</li> </ul>
<p><b>Main actions aimed at climate change mitigation:</b> In SRMM actions aimed at climate change mitigation weren't included.</p>
<p><b>Are the guidelines for operationalization of activities related to the climate change provided? If yes, please describe them.</b></p> <p>The Strategy is prepared in a consistent and transparent manner. SRMM defines the current state in the field of rainwater and meltwater management in Poznań, identifies specific legal, organizational, environmental and technical conditions, issues and challenges. On this basis, it indicates the goals and strategic tasks together with the schedule, presents possible solutions with their potential outcomes. SRMM proposes patterns/schemes of operation and identifies and describes potential sources of financing. Where possible it gives references and exemplars of good practices.</p>
<p><b>Indicate the SDGs relevant for the region:</b></p> <p>SDGs listed were not written down in the SRMM, the content of the document, however, allows to identify them as the most relevant:</p> <ul style="list-style-type: none"> <li>- Goal 6: Ensure availability and sustainable management of water and sanitation for all.</li> <li>- Goal 9: Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation.</li> <li>- Goal 11: Make cities and human settlements inclusive, safe, resilient and sustainable.</li> <li>- Goal 13: Take urgent action to combat climate change and its impacts.</li> </ul>
<p><b>Is there a need for cooperation between different groups of stakeholders articulated/described?</b></p>

YES  NO

**If YES, mark the appropriate stakeholder groups and describe them**

local government  civil society  academia & education  business

**Short description of stakeholders:**

Work on SRMM have involved a several groups of stakeholders:

- City of Poznań authorities, decision and policy makers, officials;
- Departments of Poznań City Hall (Department of Environmental Protection; Department of Economic Activity and Agriculture, Department of Transport and Urban Green, Department of Crisis Management and Security, Department of Municipal Economy);
- Budgetary units of Poznań City Hall (Board of Geodesy and Urban Cadastre "GEOPOZ", City Road Authority);
- Municipal companies (Aquanet Sp. z o. o. – clean water provision);
- external contractor of SRMM - Ove Arup & Partners International Limited Sp. z o. o.;
- consultant companies specialized in hydrodynamics modelling (companies: Retencja.pl, Biprowodmel Sp. z o. o.).

On the implementation stage, a broader group of stakeholders should be involved - in addition to those already mentioned:

- academia and education (local universities, e.g. Adam Mickiewicz University Poznań, Poznań University of Technology, Poznań University of Life Sciences);
- real estate developers (investors), architects and spatial planners, and other representatives of businesses related to water management topics (recipients of educational and promotion activities);
- representatives of City Halls and municipal companies from other Polish cities, which are dealing with rainwater challenges and actively searching for innovative and effective solutions in this matter (e.g. City of Gdańsk, City of Łódź, City of Bydgoszcz) - sources of good practices;
- residents of Poznań (different demographical and socio-economical groups, e.g. children, youth, seniors, real estate owners) - recipients of educational and promotion activities regarding proper water management in city.

**Describe the forms of cooperation between stakeholder groups or the ways of their involvement in climate actions (e.g. public meetings, local workshops, focus groups) (maximum 3000 characters including spaces):**

**Forms of cooperation and communication between stakeholders (during work on SRMM):**

- meetings and discussions;
- surveys and competence interviews;
- online correspondence.

**Forms of cooperation and communication between stakeholders (for education and promotion on the implementation stage):**

- festivals and public meetings;
- spread of information in media (in local TV stations, press releases);
- spread of information in social media (promotion movies);
- other promotion/education events including leaflet dissemination, publishing posts and articles on websites.

**Web link to the document:**

The project of SRMM is currently under internal consultations (City Hall departments and budgetary units) and the open e-version is unavailable for now. The access to the printed version is provided in the City Hall.

**Case study 3**

**Title:**

**Low Carbon Economy Plan for Poznań Metropolis (LCEP)** - sets out actions aimed at reducing energy consumption, increasing the use of renewable energy and reducing emissions in Poznań, together with an economic assessment of their efficiency. LCEP deals with air quality challenges contributing to climate change mitigation and adaptation.

LCEP covers the area of 23 local government units - the following communes: Buk, Czerwonak, Dopiewo, Kleszczewo, Komorniki, Kostrzyn, Kórnik, Luboń, Mosina, Murowana Goślina, Oborniki, Pobiedziska, Poznań, Puszczykowo, Rokietnica, Skoki, Stęszew, Suchy Las, Swarzędz, Szamotuły, Śrem, Tarnowo Podgórne, and Poznański County.

**Timeframe:**

2015-2020

**Main challenges and goals regarding climate change identified:**

**Main challenges:**

- low emission problem, generated mainly from individual heating systems;
- widespread of biomass use as a solid fuel in low-emission sources (heating);
- relatively high prices of energy carriers;
- high population density and increasing number of vehicles - the increase of emissions from communication;
- increased transit traffic;
- unsatisfactory technical condition of roads;
- lack of "Park & Ride" and "Bike & Ride" car parks;
- excessive air pollution with PM10 and benzo[a]pyrene
- limited financial resources for the implementation of tasks related to air protection.

**Main goals:**

The strategic goal of LCEP is the reduction of greenhouse gas emissions from each municipality by 30% by 2040 (compared to the state in 2010 base year). This will be achieved by reducing energy consumption from conventional sources and raw

materials, as well as increasing the share of energy from renewable sources in the energy balance.

Detailed objectives:

- reducing greenhouse gas emissions by 20% by 2020 compared to the base year;
- reducing energy consumption by 20% compared to BAU forecasts for 2020;
- increasing the share of energy produced from renewable sources to 15% in final energy consumption by 2020.

The goal in the scope of reducing emissions of air pollutants is to achieve and maintain levels of permissible substances in the air in accordance to the current national and local regulations (Environmental Protection Law and Air Protection Program for the Poznań Agglomeration).

**Main indicators (of product/result/impact) applied (MoRRI indicators/SDGs indicators):**

**Main indicators:**

- the volume of CO<sub>2</sub> emissions from the commune area in a given year (Mg CO<sub>2</sub>/year);
- the CO<sub>2</sub> emission reduction compared to the base year (%);
- the energy consumption in the commune in a given year (MWh/year);
- the reduction of energy consumption relative to the base year (%);
- the energy consumption from renewable sources in the commune in a given year (MWh/year);
- the share of energy consumption from renewable sources in the total energy consumption in the commune in a given year (%);
- the reduction of pollutant emissions to the air from the commune area in a given year for PM<sub>10</sub> (Mg/year) and benzo[a]pyrene (kg/year).

**Exemplars of detailed indicators (92 in total):**

- the number of NGOs supported by the city;
- the number of completed "Green" public procurement;
- the number of schools covered by educational campaigns;
- the area of new greenery plantings;
- the number of new elements of cycling infrastructure;
- the length of new/modernized road sections;
- the number of newly built "Bike & Ride" car parks;
- the number of new connections to the heating network;
- the savings in energy consumption (kWh);
- the electricity production from renewable sources (kWh);
- the electricity production from solar systems (photovoltaics) (kWh).

**Main actions aimed at climate change adaptation:**

**Aggregated tasks/actions:**

- development of renewable energy sources and air protection;
- thermo-modernization of buildings and development of passive housing;

- development and maintenance of green infrastructure, including conservation of roadside greenery (e.g. development of the Warta Old Riverbed);
- ecological/environmental education in terms of low-carbon economy and climate protection.

**Main actions aimed at climate change mitigation:**

**Aggregated tasks/actions:**

- development of renewable energy sources and air protection;
- thermo-modernization of buildings and development of passive housing;
- development and maintenance of green infrastructure, including conservation of roadside greenery (e.g. development of the Warta Old Riverbed);
- construction, reconstruction and modernization of road and tram infrastructure;
- development of a bicycle and walking paths system, including the construction of Wartystrada (walking/cycling path along the River Warta in Poznań);
- improving the quality of non-motorised journeys (cycling);
- reduction of organic waste landfilling (use of organic matter produced by green infrastructure);
- ecological/environmental education in terms of low-carbon economy and climate protection.

**Are the guidelines for operationalization of activities related to the climate change provided? If yes, please describe them.**

The main and detailed goals are linked to specific tasks that have identified sources of financing and are assigned to entities responsible for implementation (a timetabled strategy for low-carbon economy activities was presented in detail). The document stress the significant role of local coordinators and leaders as well as cooperation between internal and external LCEP stakeholders. An important success factor is properly planned and carried out educational and promotional activities.

**Indicate the SDGs relevant for the region:**

SDGs listed were not written down in the LCEP, the content of the document, however, allows to identify them as the most relevant for low carbon economy actions in this region:

- Goal 7: Ensure access to affordable, reliable, sustainable and modern energy for all.
- Goal 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all.
- Goal 9: Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation.
- Goal 11: Make cities and human settlements inclusive, safe, resilient and sustainable.
- Goal 12: Ensure sustainable consumption and production patterns.
- Goal 13: Take urgent action to combat climate change and its impacts.

Is there a need for cooperation between different groups of stakeholders articulated/described?

YES  NO

If YES, mark the appropriate stakeholder groups and describe them

local government  civil society  academia & education  business

**Short description of stakeholders:**

Key stakeholders were invited to participate in the implementation of LCEP and participated also in the creation of the emissions inventory base as well as they have the opportunity to report tasks proposals. The participation of a wide range of stakeholders was made possible through public consultation of the document during the final stage of its preparation.

In this document, the term "stakeholders" is linked to individuals, groups or organizations that LCEP directly or indirectly interacts with. LCEP's stakeholders are all residents of the metropolis and enterprises/organizations operating in its territory. The two main groups of stakeholders are:

- local governmental units (internal stakeholders): departments of the city halls/commune offices, budgetary units, health care institutions, local government cultural institutions, municipal companies (e.g. water companies, municipal transportation companies);
- external stakeholders: residents, public institutions, non-governmental organizations, companies and other non-municipal entities (e.g. housing associations, real-estate boards, electricity supplying companies).

The development of an appropriate system of cooperation with stakeholders is extremely important from the point of view of the effective implementation of LCEP and that was directly stressed in the text.

**Describe the forms of cooperation between stakeholder groups or the ways of their involvement in climate actions (e.g. public meetings, local workshops, focus groups) (maximum 3000 characters including spaces):**

For effective implementation, it was recommended to organize of cyclical meetings of LCEP Commission and local Coordinators from the metropolitan area with internal and external stakeholders. The meetings should be aimed at exchanging comments, opinions, but also knowledge, experience and "good practices" in implementing the measures included in the LCEP, implementing solutions limiting energy consumption and greenhouse gas emissions. The LCEP Commission should also conduct joint information and promotion activities in the field of energy saving and climate protection (e.g. festivals, contests, promotion events).

**Web link to the document:**

LCEP is divided into stand-alone parts according to the administrative division (metropolis communes and Poznań county). Here you find a link to the Low-Carbon Economy Plan for City of Poznań: <http://www.poznan.pl/mim/main/-p,38278,38355.html>.

**3. Main stakeholders in the region (quadruple helix model)**

**a) Local government** (indicate local/regional institutions and their main tasks referring to environmental protection and climate change adaptation & mitigation)

**Poznan City Hall** including:

- Municipal Green Authority - management of urban green spaces: programming and planning of greenery in the city, administration of urban areas designated for the creating of new parks and green areas, maintenance and conservation of greenery (parks, squares, trees and shrubs), carrying out restoration works, creating of new park facilities
- Municipal Road Authority - management of greenery located in the city's road lanes, revalorization of street greenery
- Municipal Urban Planning Authority- development of spatial development guidelines in planning documents, concepts, projects, etc. drawing up local plans to increase the city's resilience
- Municipal Departments of the for environmental protection, socio-economic development, crisis management, social service, investment, transport and greenery

**Other Commune Offices** of Buk, Czerwonak, Dopiewo, Kleszczewo, Komorniki, Kostrzyn, Kórnik, Luboń, Mosina, Murowana Goślina, Oborniki, Pobiedziska, Puszczykowo, Rokietnica, Skoki, Stęszew, Suchy Las, Swarzędz, Szamotuły, Śrem, Tarnowo Podgórne, and **County Offices**.

**Poznan Metropolitan Association** - support for territorial governments in the implementation of sustainable development of agglomerations, for example in the field of environmental protection (initiatives to reduce low emissions, educational anti-smog network), transport and communication (urban railway, development of transport infrastructure), improving the quality of life of inhabitants (supporting of residents activity, especially children and seniors)

**Poznan Marshall Office/ representatives of regional government** including:

- **Regional Directorate for Environmental Protection (RDOŚ)** - implementation of environmental policy in the area of nature conservation management, including Natura 2000 sites, conducting Environmental Impact Assessments (EIA), preventing and repairing damage in environment
- **Provincial Inspectorate for Environmental Protection (WIOŚ)**- measurements of emissions and level of substances or energy occurring in the environment, conducting state environmental monitoring, control of entities using the environment
- **Provincial Sanitary-Epidemiological Station (WSSE)** - assessment of the state sanitary and epidemiological situation of Poznan Agglomeration, supervision and education in the field of health protection

**Aquanet S.A.** - the company providing services for the city in the field of expansion and modernization of water supply and sewage infrastructure in Poznan Agglomeration, improving the living conditions and health of the inhabitants by ensuring the supply of water from the collective water supply system and improving

the functioning of the water supply network, ensuring potable water of the appropriate quality, improving the management and control system of the functioning of water and sewage management facilities.

**Veolia Energy Poznan ZEC S.A.** – the company providing services for the city in the field of production of systemic heat and electricity, management of the heating network, promotion of environmentally friendly solutions (district heating from biomass).

**b) Civil society** (population; voter turnout in the last elections related to the pilot region; number of NGOs and CSOs; indicate NGOs/CSOs acting for the environment and/or climate change adaptation and mitigation)

- Poznań Agglomeration in 2017 had 1,029,021 inhabitants, 538,800 women and 490,221 men. The agglomeration currently experiences a positive population growth rate of 2.4%. In the years 2007-2017, the net migration rate for the agglomeration amounted to 34,272 people. According to the economic age, the largest group (61.4%) is the working age population, 18.8% is the pre-working age population, and 19.8% are post-working age people. The share of the unemployed in the working age population in the agglomeration is 2% - and is much smaller than the registered unemployment rate for the whole of Poland (5.2%). Persons over 70 and under the age of 6, the most sensitive to the effects of climate change, together account for 13.21% of the entire population of the agglomeration.
- The community involvement in last local election was the highest in the last 20 years and amounted to 54.43% in the city of Poznań, 60.38% in associated municipalities, and was higher than the attendance in Poland (52.15%).
- In Poznań Agglomeration, the number of active NGOs (mainly foundations and associations) in 2016 amounted to 5,019 entities. It places Poznań in fourth place in Poland. Areas of activity most represented by NGOs are science, higher education, education (27%), culture, art, protection of cultural and national heritage (25%), promotion and dissemination of physical culture and sport (19%). More than 10% of indications concerned activities in the area of protection and health promotion, support for disabled people. Only 82 active NGOs have been inventoried that work in the field of environmental protection, including climate change adaptation and mitigation. Civic participation is completed by a CSO of 273, which is below the average for Poland.

**c) Academia & Education** (number of students; indicate the most important research institutions/universities & basic directions of their research referring to climate change adaptation and mitigation; number of pupils from primary and secondary schools; indicate institutions promoting science or being involved in science communication)

- The school system of the Poznan agglomeration includes 249 primary schools, 169 junior high schools and 437 high and secondary schools, attended by over 161,000 children, youths and adults.
- The Poznan Agglomeration is one of the largest centres of higher education in Poland. At 25 universities (8 public and 17 non-public) studies nearly 140,000

students, including over 1,000 foreign students (mainly at the Medical University). There are 135 students per 1,000 inhabitants, the largest number in Poland. The academic staff of Poznan universities amounts to 8,000 people, including 1,100 scientists with the title of Professor. The largest university, the Adam Mickiewicz University, provides education services to the third of student population in the region.

- Adam Mickiewicz University implements the issues of climate change adaptation and mitigation, namely environmental protection (biotechnologies in environmental protection, renewable energy sources, environmental protection in the industry, use and protection of hydrosphere resources, environmental management, spatial planning, hydrology, meteorology and climatology. The Poznan University of Technology specialises in the field of Environmental Engineering.
- Main institutions promoting science and being involved in science communication:
  - ✓ **Poznan Science and Technology Park (PSTP)** is the **first technology park in Poland** (1995). It is operated (as the key department) by Adam Mickiewicz University Foundation, a non-profit organization with the mission to stimulate collaboration between science and industry to activate the regional development via innovation, technology transfer and international cooperation. Partner in the process of commercializing scientific and technological research results
  - ✓ **Technical Knowledge Accelerator** concentrates on accelerating the development of technical, mathematical and natural science knowledge, but also the competencies and skills. It acts to improve access to knowledge and its dissemination. Their development allows the adaptation to changed living conditions, prevent social exclusion, but also ensures the development of the economy, determines its innovation and competitiveness
  - ✓ **Nickel Park Technology** - the aim is to deliver value from the latest technologies for people, provide friendly workspaces for people and business.

**d) Business** (SMEs and large enterprises (number, employment in SMEs and large enterprises, (%) of total employment in a given region); Regional Smart Specializations (RIS3); general overview of the different industrial sectors which can be found in the region; indicate enterprises actively involved in climate change adaptation and mitigation actions and define the field of their activity)

- The Poznan Agglomeration, together with the Poznan City, belongs to the economically strongest regions of Poland. Local government authorities pursue a policy based on increasing the region's innovativeness and competitiveness. The strategic vision of the region's development is based on the identified areas of smart specializations, which include: food production, furniture production, paper and wood production, machine production and repair (including the motorization sector), transport and storage, as well as information and communication technologies (RIS3).

- Currently, 180,907 business entities are registered in the Poznan Agglomeration (2017), and their number in the last decade (2007-2017) showed significant dynamics - an increase of 41 120 new enterprises. There are 135,700 small and medium-sized enterprises (SMEs) registered that employ 70% of people in this sector. They operate mainly in such industries as trade and repairs as well as real estate and business services. Almost 95% of companies are micro-enterprises employing less than 10 people. Small companies, employing from 10 to 49 people, accounted for 4.3%, medium-sized companies (from 50 to 249 people) were run by over 700 entities, which is only 0.8%. In the structure, large enterprises accounted for 0.14%. Their number is approximately 170, of which 1/5 are companies employing over 1,000 people. Large companies employ approx. 46,800 people or 30% of employees in the enterprise sector. The largest enterprises located in the region include Amazon, Volkswagen Poznań Sp. z o.o., Energy Group Enea SA, Brewery Company SA, GlaxoSmithKline Pharmaceuticals SA, Jeronimo Martins Dystrybucja SA, H. Cegielski - Poznań SA, Centra SA, Kimball Electronics Poland Sp. z o.o., Solaris Bus & Coach S.A., MAN Truck & Bus Center.
- In 2017, 390,475 people worked in the region (37.95%). According to the Polish Classification of Activities, the largest percentage of the population was employed in manufacturing (22.8%), trade (16.8%), education (10.6%), transport and storage (9.1%).
- The enterprises involved in climate change adaptation and mitigation actions include (examples):
  - ✓ Volkswagen Polska (Project Code for Green - organization of school workshops, in which classes are held connecting ecology, programming and the basics of electronics, the goal - development of methods and devices supporting environmental protection).
  - ✓ Solaris Bus&Coach S.A. - the leader in the creation and implementation of comprehensive solutions in the field of ecological transport, including electromobility.
  - ✓ IKEA - implementation of a 100% "renewable" strategy - the production of the same amount of renewable energy as the company consumes, increasing the energy efficiency of buildings, thanks to which the company will use less energy.

**4. Short summary of a pilot region** (most important climate challenges indicated by the local/regional strategy or scientific regional agendas, culture of innovation, institutional framework of the regional innovation system; existing exchange structures between stakeholders; any other relevant information and additional comments)

Analysis of changes in climatic and hydrological phenomena carried out within the last 30 years has shown that the most important threats associated with climate change include:

- increase in average annual air temperature and intensification of the effect of urban heat islands

- increase in the frequency of extreme events: heat waves, cold waves, droughts, intense rainfalls and associated flooding, flood threats, strong winds and storms.

These phenomena, especially in heavily urbanized areas, are accompanied by an increase in low emissions, which is a consequence of obsolete heating technologies on the one hand and uncontrolled and chaotic suburbanisation on the other hand.

According to predictions, in the perspective of 2030 one should expect a deepening of climate change trends, therefore the city should create spatial, social and economic structures prepared for these phenomena.

In urban policy, the most important documents in the climate change area is The Urban Climate Adaptation Plan for sectors and areas sensitive to climate change. The plan challenge, along with the institutional and organizational activities increasing the resistance of cities to extreme events, was to improve the awareness, safety, and comfort of residents in the conditions of a changing climate. Residents of the agglomeration see the greatest threats in exceeding the permissible concentrations of PM10 and PM 2,5 and the harmful effects of smog on health. This creates a wide range of opportunities to use social activity in the counteracting climate change, which consists in ceasing the use of fossil fuels and thus reducing CO<sub>2</sub> emissions. Also in urban policy, improving air quality is the most important challenge, and the implementation of a low-emission economy (reducing energy consumption, increasing the use of renewable energy and reducing emissions in the agglomeration) has been recognized as a priority area for action. Necessity and challenges are shaping the policy of urban development, which will take into account new climatic conditions and adaptations to climate change, in the water management, with particular emphasis on complex approach to rainwater and meltwater management. A comprehensive approach focuses on improving the water management system in the conditions of excess water (floods, flooding) and water scarcity (droughts). It is recommended to increase the share of areas absorbing water excess, delaying the outflow /slowing down the flow, retaining water as: polders, dry water reservoirs, green areas and soils with large water capacity, replacing sealed surfaces with permeable. Another group of activities is the restoration of degraded green areas as well as water reservoirs and their utility functions, with particular reference to small retention.

The weaker party is the operationalization of the above-mentioned activities, limited to the identification of entities responsible for the implementation of tasks, the financing framework, indicators monitoring the implementation of goals set in urban policy without indicating specific mechanisms for implementing these activities.

## II. PROJECTS AIMED AT CLIMATE CHANGE ADAPTATION AND MITIGATION

### 1. Projects aimed at climate change adaptation and mitigation implemented by civil society (NGOs, CSOs)

#### Case study 1

**Title:**

**Biking in Poznan (ROWEROWY POZNAŃ)**

**Source of funding and the budget:** grants received from City of Poznań within a participatory budget

**Timeframe:**

2015-2019

**Main challenges and goals regarding climate change identified:**

- to reduce air pollution in the city
- to promote sustainable transport and a bike as a daily mode of transport
- to educate on a safety cycling
- to design bike paths in the city center and to involve citizens in this process
- to build a new culture of life and moving around the city

**Main indicators (of product/result/impact) applied (MoRRI indicators/SDGs indicators):**

- a new system of bike paths and a 30 k/h zone in the city centre
- cycle safety & skills training for over 2000 pupils
- cycle safety & skills training for over 200 adults
- a movie on cycle safety in the city centre
- around 1 mln euro received for the planning and creating bike paths in the city
- Cycling Programme for the city accepted in 2017

**Main actions aimed at climate change adaptation:** not foreseen

**Main actions aimed at climate change mitigation:**

The organization is involved in many activities that all together build a programme dedicated to promoting cycling in the city. It is a bottom-up movement that was created in the mid 90-ties and grown to a recognized nongovernmental organization in Poznan.

The activities take the following forms:

- the members of the Biking in Poznań are involved in the process of consultation, advising, preparing new investment plans, designing and testing bike paths in the city
- the activities in the social media, organized events are aimed to educate on benefits for human health from cycling, on the advantages of reducing low emission in the city and on successful and resilient planning the new bike paths

- education activities in schools and bike infrastructure audits in the schools’ area
- training activities for adults (safety cycling and biking around the city)
- advising for communes/citizens on the establishing bike paths
- giving opinions on the new bike paths planned by the city hall
- conducting media communication with regard to cycling in the city
- developing social projects e.g. Biking in Poznan received a social innovation grant for an electric rickshaw for seniors from one of the social care home. Volunteers take elderly people on rides through the city and its neighborhood.

**Please indicate the institution/s responsible for the implementation and its/their main tasks**

**Biking in Poznan** – the leader of the activities, a nonprofit organisation  
**Citizens of Poznan** and other **NGOs/CSOs** involved in some of the initiatives as e.g. proposing joint projects to a Poznan Participatory Budget, participating in a Bike Parade, lobbying.

**Please tick the type of stakeholders involved and shortly describe them**

local government  civil society  academia & education  business

**Short description of stakeholders:**

**Poznan City Hall** - The City performs the tasks of a commune and a district, and tasks assigned within the scope of governmental administration.

Poznań’s local government's legislative and decision-making body is the City Council, which sets local by-laws, passes budgets and inspects their execution, decides on local taxes and charges on the grounds of existing legislature and adopts resolutions on property rights. The City Council and the Mayor are the elected bodies.

Local government elections are held every four years to elect the City Council and the Mayor of the City. Council members and the Mayor are elected in general, direct elections on the secret ballot and "one person-one vote" principle. The City Council consists of 37 councilors. The Mayor of the City holds executive power, manages the Poznań City Hall, and directs the work of his deputies, the secretary and the treasurer, who are responsible for administrating specific municipal issues designated to them by the Mayor.

**Shortly describe the forms and tools of cooperation between partners involved in the implementation and the tools used for communication with the society (maximum 3000 characters including spaces):**

The main tool of communication with the society is social media (Facebook) and SMS communicator. Since the initiative has grown and gained quite large publicity the number of followers (around 20th) guarantees the high impact.

The communication with the City Hall is traditional and takes form of meetings, e-mails, phone calls. The Board of the Biking in Poznan is recognizable by the city representatives.

**Indicate the SDGs relevant for the project:**

Goal 9: Industry, innovation and infrastructure

<p><b>Web link to the project:</b> <a href="http://rowerowypoznan.pl">rowerowypoznan.pl</a></p>
<p><b>Case study 2</b></p>
<p><b>Title:</b>  <b><u>Social Gardens in Poznań (Czech's District case study)</u></b></p>
<p><b>Source of funding and the budget:</b> grants received from City of Poznan within a participatory budget or other competitions for a social project</p>
<p><b>Timeframe:</b> 2017-2019</p>
<p><b>Main challenges and goals regarding climate change identified:</b>  <b>Goals:</b></p> <ul style="list-style-type: none"> <li>- to integrate local communities</li> <li>- to promote health style of life</li> <li>- to promote the values of green spaces in the city</li> <li>- to educate children on the healthy and environmentally healthy food</li> </ul>
<p><b>Main indicators (of product/result/impact) applied (MoRRI indicators/SDGs indicators):</b></p> <ul style="list-style-type: none"> <li>- social garden designed and created in the Czech's district in Poznań</li> </ul>
<p><b>Main actions aimed at climate change adaptation:</b> not foreseen</p>
<p><b>Main actions aimed at climate change mitigation:</b></p> <ul style="list-style-type: none"> <li>- planning a social garden- process of a consultations, trainings, designing and applying for funding</li> <li>- a series of workshops in a next-door school for pupils</li> <li>- creating and maintaining the social garden</li> <li>- social events integrating local community</li> </ul>
<p><b>Please indicate the institution/s responsible for the implementation and its/their main tasks</b>  <b>Citizens of the Czech's district</b> - people voluntary engaged in establishing and maintaining the garden, they have been also involved in the process of designing the garden by an architect.  <b>Housing Association of Czech's district</b>- gave a space to establish a garden  <b>"Abrys" company</b> - was the organizer of the competition <b>Inspirations in the space</b> addressed to people, whose passion is design. The aim of the competition was to award and promote city planning projects developing the high standard of public space.</p>
<p><b>Please tick the type of stakeholders involved and shortly describe them</b></p> <p><input type="checkbox"/> local government <input checked="" type="checkbox"/> civil society <input type="checkbox"/> academia &amp; education <input checked="" type="checkbox"/> business</p>
<p><b>Short description of stakeholders:</b></p>

**Housing Association of Czech's district-** is a non-profit organization although it has a status of an enterprise. Such organizations are popular in Poland, they operate on the basis of law on housing associations and their main tasks are to manage the housing properties and to fulfill the housing needs of their tenants; to invest in new buildings, to renovate and maintain them as well as other assets (e.g. green areas, common spaces and community centres). They are managed by the Director, Board and Plenary Assembly.

**Abrys**, a company whose mission is to deliver and promote information and knowledge aiming at improving efficiency of ecological, economic and organizational effects in the area of environmental protection and municipal management. ABRYS remains the leader in the Polish publishing market as well as in organizing conferences, seminars, and trainings concerning environmental protection, municipal management, energy production and related topics.

For 12 years Abrys has been organizing competitions aiming at promoting environmental civic engagement. Addressing local authorities, companies, institutions and private persons they very well play their educational role. The competitions award people and companies who by means of their engagement contribute to the concept of sustainable development and draw special attention to environmental protection.

**Shortly describe the forms and tools of cooperation between partners involved in the implementation and the tools used for communication with the society (maximum 3000 characters including spaces):**

The main tool of communication with the society is social media (Facebook) and a regular meetings in one of the school within the settlement. The citizens were also informed by the competition by a local TV, newspaper and by the posters.

**Indicate the SDGs relevant for the project:**

Goal 13 – Climate action

**Web link to the project: Facebook profile**

<https://pl-pl.facebook.com/OgrodSpolecznynaOsiedluCzecha/>

### Case study 3

**Title:**

**Poznan Design Festival (Water, Earth/Biodiversity, Air/Atmosphere)**

**Source of funding and the budget:** grants received from the City of Poznań; business sponsors

**Timeframe:** 2017-2018-2019

**Main challenges and goals regarding climate change identified:**

**Challenges:**

The majority of the population lives in urban areas, in more and more accessible cities, with numerous creative spaces. We are getting used to staying in a friendly environment with numerous amenities, amidst useful and aesthetically pleasing objects that can be easily recycled. In Europe, we still live in the belief that access to drinking water, food, clean air and electricity is basically unlimited. Our cities have more and more green areas, are increasingly smart and will continue to grow. It is easy to forget that the future is indefinite and unpredictable, and global problems are growing.

The amount of data collected today is overwhelming. However, few of us are aware of how this information is collected, stored and used and who does it. The data can improve our quality of life, for example through smart cities, yet they can also become a source of continuous control of entire societies, not only by governments but also by supranational corporations.

In the Middle Ages it was said that „city air makes one free”. Today, we often equate freedom with free access to information, transmitted via the Internet, which is increasingly available as a wireless signal. The Internet has become the „air” of the 21st century. The above considerations make it possible to take a broader look at the theme of 2019 edition of the Festival. As a result, its motto, i.e. ATMOSPHERE takes on a new meaning.

**Goals:**

- to create a network of sustainable designers and to share experience and knowledge among them
- to educate and to build awareness about climate change in the cities
- to promote more open and sustainable cities

**Main indicators (of product/result/impact) applied (MoRRI indicators/SDGs indicators):**

- number of participants in each edition of the Festival – 2000 participant of the events, 20 000 exhibitions viewer’s
- number of workshops held - 25
- number of exhibitions, lectures and other meetings- 30

**Main actions aimed at climate change adaptation:** not foreseen

**Main actions aimed at climate change mitigation:**

**Poznań Design Festival** in the years 2017-2019 is organized around the idiom: POZNAŃ, THE CITY OF THE ELEMENTS.

As part of the cycle started in 2012, in 2017 the project activities were organized in the area of the broadly understood element of water under the slogan RIVER-BOUND. In 2018, the theme of the event was BIODIVERSITY. The participants were able to observe how the element of the earth inspires designers from different parts of the world who try to take care of sustainable development. In 2019, the Festival activities focuses on the air element, and all the projects presented under the programme are carried out under the motto ATMOSPHERE.

The goal of the Festival is not only to promote Polish design, but also strengthening communication, mutual learning and inspiration. The priority is to build a network of

cooperation, exchange of knowledge and experience in the field of engaged, committed design.

Some of the projects presented at the Festival have a study character, becoming a field for collecting and interpreting visual data. Others take the form of impressions from the frontiers of art on a given topic, often showing the speculative character of the object of reflection. In this way are created scenarios of the world in which we may function in the future. Regardless of their nature, all projects are strictly related to the Festival's slogan.

The main questions asked by the organizers deal with the current global challenges and climate change respectively. Can we prevent global problems and challenges? Can we successfully deal with climate change, reflected in the increasing number of extreme weather conditions which also affect modern cities? Will we be able to cope with the many pollutants which we are often unaware of on a wider scale: light, noise, dust and air? This has an impact on fauna, flora and, above all, on people.

During 2019 edition Festival focuses on the solutions that will show how designers protect their immediate environment, including modern cities, against the problems of the 21st century, i.e. all kinds of pollution, overexploitation of natural and human resources, transfer to the virtual world (Virtual Reality), as well as expansion of the A.I. sphere. (Artificial Intelligence) and their impact on the functioning of modern cities, including ecosystems. Projects implemented in Poznan will be presented as well as from China, Germany and Great Britain.

The Festival agenda includes: exhibitions, presentations, portfolio reviews, films, lectures, discussions, artistic actions and interventions, curatorial guided tours, as well as study walks and workshops for children and adults.

**Please indicate the institution/s responsible for the implementation and its/their main tasks**

**The Open Centre** and **Made in Art Foundation** are both engaged in the organization of the event and all the tasks regarding the project.

**Made in Art Foundation has developed the Open Centre**, an initiative aiming at affecting long-term change in the public space of Poznań, with special focus on the city centre. It is a forum of meetings and exchange of ideas and experience addressed at a variety of communities and stakeholders. It is an ideological continuation and powerful development of the activities initiated during the Poznań Design Festival and of the informal initiative known as "Otwarte" [Open], active in the city in the years 2012-2015.

The Centre is moreover an embryo of a city think tank, a platform of organisation of meetings, exchange of concepts, ideas and solutions furthering innovative and city-friendly actions in the fields of architecture, design and urban planning.

In 2017 The Centre will launch three quarter programs dedicated to the green areas, housing and commerce in the city. There will be supplementary lectures by experienced practitioners, exhibitions, debates, walking tours, and workshops.

The activities carried out by The Centre, like the urban structure of Poznań, are divided into quarters of similar agendas and a number of projects. The synergy of all the above

activities is to contribute to positive and permanent changes in the public space of Poznań.

Complementary educational projects as well as exhibitions and workshops are supposed to inspire, educate and, last but not least, bring together those who care about Poznań and its growth. The Centre strongly appreciates organic team work as a tool of city development.

The aim of The Centre is moreover to aggregate dispersed or previously unknown data on public space and its resources with a view to their being used by public entities and organisations.

Furthermore, a long-term objective of The Centre is to contribute to the creation in Poznań of a museum/centre of architecture, design and urban planning.

local government  civil society  academia & education  business

Business e.g. AQUANET, POMARANCZARNIA.pl are the sponsors of the event

**Shortly describe the forms and tools of cooperation between partners involved in the implementation and the tools used for communication with the society (maximum 3000 characters including spaces):**

The main tool of communication with the society is social media (Facebook) and Festival web page as well as local media. Since the initiative has grown and gained quite large publicity the number of followers guarantees the high impact of the project.

The communication with the City Hall is traditional and takes form of meetings, e-mails, phone calls. The member of the Board of the Open Centre are recognizable in the city as the leaders of the city movement.

**Indicate the SDGs relevant for the project:**

Goal 9 – Industry, innovation and infrastructure

Goal 13 – Climate action

**Web link to the project:** [2019.poznandesignfestiwal.pl](http://2019.poznandesignfestiwal.pl); <http://centrumotwarte.pl>

**2. Projects aimed at climate change adaptation and mitigation implemented by academia & education (research public or private scientific bodies, universities, schools, extracurricular education organisations)**  
*(please provide max. 3 cases using the template below)*

**Case study 1**

**Title:**

**COproductionN with NaturE for City Transitioning, INnovation and Governance (CONNECTING Nature)**

**Source of funding and the budget:**

This project has received funding from the European Union's Horizon 2020 research and innovation programme under the grant agreement No 730222. Estimated budget 11 699 286,15 EUR.

**Timeframe:**

From 2017-06-01 to 2022-05-31 (duration 60 months).

**Main challenges and goals regarding climate change identified:**

The overarching objective of Connecting Nature is to position Europe as a global leader in the innovation and implementation of nature-based solutions - actions which are inspired by, supported by or copied from nature (e.g. green roofs and walls, rain gardens, swales, ponds, community gardens, parks and pocket parks, natural playgrounds, urban farming).

**Challenges:**

Most innovation occurs in cities, but cities are also the location where most of today's major and urgent challenges occur; challenges such as climate and environmental change, complex water and waste management, adverse health and well-being, changes in social cohesion and economic development. Nature-based solutions can provide support in addressing these challenges.

While the benefits of nature-based solutions that directly address the challenges outlined are expected, the development and implementation of nature-based solutions is ongoing and complex process that faces various barriers. Issues like "silo thinking" and tackling the deficit of knowledge that exists around nature-based solutions need to be confronted when developing plans to introduce nature-based solutions in cities.

Connecting Nature has taken these challenges on board and will devise and test approaches using multi-disciplinary methods where solutions are designed and created collaboratively that will lead towards the creation of resilient, greener, healthier cities, leading to a more sustainable living for their citizens.

**Goals:**

- Develop an urban planning process that will 'burst open' silos, enrich and nurture social, business and governance innovations and focus on the scaling-up of nature-based solutions in cities;

- Develop a new master planning process that accelerates the scaling of nature-based solutions in cities by connecting policy and market needs and turning barriers into opportunities for innovations;
- Develop a guiding process for identifying funding and financial mechanisms that establish nature-based solutions as evinced valid solutions for sustainable and resilient cities that are climate prepared; and to valorize knowledge and market mechanisms of nature-based solutions' scaling for stimulating the market for new innovation;
- Showcase, and share learning from, the scaling-up, replication and integration of nature-based solutions for city-making within front-runner cities;
- Implement resourced masterplans in the fast-follower cities, that is collaborative, employing sharing of good practice, working examples and quantifiable evidence, interdisciplinary work and stakeholder engagement;
- Engage the fast-follower cities in capacity-building and experiential learning building on effective knowledge sharing and mentoring between front-runner cities and fast-follower cities and the use of proven curatorial planning processes;
- Develop sustainable support for innovation, exploitation and enterprise development building on selected and promising new nature-based solution exemplars from the front runner cities and other solutions co-created to better suit the specific environmental, organizational and funding scenarios of the fast follower cities;

Connecting Nature will examine five key categories of nature-based solutions influence (climate change adaptation and resilience - sustainable use of resources; health and wellbeing; social cohesion; economic development potential; and green business opportunities).

**Main indicators (of product/result/impact) applied (MoRRI indicators/SDGs indicators):**

**Exemplars of impact indicators planned (27 in total), that are developed within the project:**

- New organizational processes in place by year 4 for municipal policymaking bodies and SMEs to achieve higher effectiveness in the design and deployment of nature-based solutions, as well as on seizing the business opportunities they offer globally;
- Showcase of 100+ tested and marketable nature-based solutions product/service offerings on Oppla community and knowledge marketplace;
- Engagement of quintuple helix actors in development of all urban plans by year 3;
- Participation of at least 3 identified key stakeholder groups in curatorial planning workshops;
- An uptake of novel tools by 5 end users for mitigating heat and flood issues by year 5;
- Quantitative engagement of up to 100 citizens & communities in the codesign, development & deployment of nature-based solutions urban plans by year 5.

Project partners are working together on Monitoring and Impact Assessment Plans, in which different types of indicators (environmental, social, economic, other) will be co-created to measure the effectiveness of implemented nature-based solutions taking the five categories of influence into account.

**Main research tasks or actions aimed at climate change adaptation:**

- Development, implementations and scaling-up of nature-based solutions in front-runner cities (Poznań, Genk, Glasgow)
- Scaling out of nature-based solutions in fast-follower cities (A Coruna, Bologna, Burgas, Ioannina, Malaga, Nicosia, Pavlos Melas, Sarajevo) and multipliers cities in China, South Korea, and Brazil.

**Main research tasks or actions aimed at climate change mitigation:**

In the area of climate change and resilience the Connecting Nature is mostly oriented on adaptation by development and management of green and blue infrastructure, including implementation of innovative nature-based solutions. The project aim to develop indicators measuring NBS efficiency in different areas of influence including climate change adaptation.

**Does the project promote RRI? If yes, please shortly describe (maximum 100 words)**

RRI term is not directly mentioned in the “Description of Actions”, but RRI principles are included and used (obligatorily in each of H2020 projects). Connecting Nature ensure open access to peer-reviewed scientific publications developed during project as well as to other outputs (reports and datasets). It includes Horizon 2020 ethics and gender equity requirements. It co-creates knowledge on nature-based solution using quintuple helix approach (public engagement) and science education.

**Please indicate the institution/s responsible for the implementation and its/their main tasks**

The project coordinating institution is Trinity College Dublin, which is also a leading beneficiary in Work Package 4 – Scaling-out in fast-followers cities, Work Package 7 – Coordination and project management, and Work Package 8 – Ethics requirements. The project consortium is created by the group of 38 project partners (18 countries) from small and medium enterprises (SME), local authorities, NGO’s and science.

**Please tick the type of stakeholders involved and shortly describe them**

local government  civil society  academia & education  business

**Short description of stakeholders:**

In Poznań (front-runner city) project engages and stimulates co-creation processes between City of Poznań (project partner) representatives (including different budgetary units, city hall departments and municipal companies), Adam Mickiewicz University in Poznań (project partner), kindergartens, local NGO's (e.g. community gardens), residents and small entrepreneurs.

<p><b>Shortly describe the forms and tools of cooperation between partners involved in the implementation and the tools used for communication with the society (maximum 3000 characters including spaces):</b></p> <p><b>Forms and tools of cooperation between partners:</b></p> <ul style="list-style-type: none"> <li>- project workshops and meetings (annual general meetings);</li> <li>- webinars and online calls (e.g. Skype calls, Zoom calls);</li> <li>- world café</li> <li>- speed dating</li> <li>- webinars and online calls</li> <li>- project website</li> <li>- project data repository (Documenta platform)</li> <li>- social media (e.g. Twitter, Facebook)</li> <li>- e-mail correspondence</li> </ul> <p><b>Forms and tools used for communication with the society:</b></p> <ul style="list-style-type: none"> <li>- workshops and meetings (including break-out/parallel sessions)</li> <li>- external conferences</li> <li>- EXPO events</li> <li>- policy labs</li> <li>- investments forums</li> <li>- debates</li> <li>- press releases</li> <li>- newsletters</li> <li>- social media (e.g. Twitter, Facebook)</li> <li>- videos streaming</li> <li>- surveys and interviews</li> <li>- e-mail correspondence</li> </ul>
<p><b>Indicate the SDGs relevant for the project:</b> Goal 11 – Sustainable cities and communities</p>
<p><b>Web link to the project:</b> <a href="https://connectingnature.eu/">https://connectingnature.eu/</a></p>
<b>Case study 2</b>
<p><b>Title:</b> <b><u>ESA – Edukacyjna Sieć Antysmogowa, The Educational Anti-SMS Network</u></b></p>
<p><b>Source of funding and the budget:</b> <b>Total budget:</b> n/a <b>Poznań Metropolis (METROPOLIA POZNAŃ):</b> The cost of the project was estimated by the contractor at PLN 1 268 179,20 PLN (EUR 296 275).</p>
<p><b>Timeframe:</b> <b>Total timeframe:</b> n/a</p>

**Main challenges and goals regarding climate change identified:**

**The Educational Anti-SMS Network is a programme dedicated to clean air and carried out by the National Research Institute (NASK) in cooperation with the Polish Smog Alarm.**

**Challenges:** to promote knowledge about the importance of clean air for health and the impact of everyday activities on its quality. Schools - as institutions educating children and youth and as important opinion-forming centers - are the right place where knowledge should be disseminated and for helping the local community to identify and understand problems affecting the quality of life.

Schools participating in the "ESA" project have been equipped with meters that indicate air quality. The data collected by the meters are available via Internet and presented on the displays at schools, which enables students, teachers and the local community to monitor air quality on an ongoing basis and plan outdoor activities appropriately. The measured parameters are averaged over the measurement periods and once every 5 minutes sent to the central server. The results of the measurements are presented on the project portal and on information screens in schools. Students using archival data can carry out their own research and analysis in correlation with atmospheric factors under the guidance of teachers.

**Goals:** to educate children, adolescents, parents and to provide tools for teachers regarding the air purity protection, with particular emphasis on smog issues: reasons for its formation, impact on health, and possible actions that allow to reduce air pollution.

**POZNAŃ METROPOLIS:**

The aim of the project is primarily to raise awareness among Poznań Metropolis inhabitants about the importance of the air quality for their health and the quality of life. The project is carried out by the INEA SA company selected in the tender.

INEA provides measurement systems for 160 schools located in the Poznań Metropolis. The system consists of a pollution meter (installed outside the school), an information monitor (inside the school) and a computer. The results of the measurements go to the website of the Educational Anti-SMS Network project: <https://esa.nask.pl/map>. The measured values are averaged in the given measurement periods and sent to the central server once every 5 minutes. Data are transmitted via the wi-fi network and Ethernet, in the school network and the Internet. The data are also presented on information screens located in schools, together with the educational content.

In addition, as part of the project, the Poznań Metropolis Association will organize together with NASK (Academic Computer Network - Research Institute) during the heating period at least one educational workshop in each municipality of the

Association. The workshops will be addressed to students, parents and teachers as well as members of the local community who counteract air pollution. The project implemented by the Poznan Metropolis Association is the first such metropolitan project in the country. The duration of the project is planned for 3 years.

**Main indicators (of product/result/impact) applied (MoRRI indicators/SDGs indicators):**

- 337 schools (160 schools from the Poznań Metropolitan Area)
- 44 656 students participating in the classes
- 32 157 adults participating in classes
- 2 841 trained teachers

**Main research tasks or actions aimed at climate change adaptation:**

Tasks related to adaptation to climate changes apply to the monitoring of the concentration of air pollutants. As part of the ESA project, air quality meters are installed in schools. Depending on the chosen configuration, the air quality inside and outside the school building is marked. The following parameters are measured continuously:

- PM2.5 dust concentration inside the school
- PM10 dust concentration inside the school
- PM2.5 dust concentration outside the school
- PM10 dust concentration outside the school
- air temperature outside the school
- atmospheric pressure outside the school
- air humidity outside the school

The measured values are averaged over the measurement periods and once every 5 minutes sent to the central server. Data is sent via OSE or the Internet. The server validates and aggregates the collected data, the corresponding result data are presented and presented on the website. The basic presented data is the moving average over the last 60 minutes of the measurement, changing every 5 minutes. Data is presented on the project portal and on information screens in selected schools. Educational content is also presented on the screens. In addition, LED displays displaying the current PM2.5 dust concentration outside the school are installed on school buildings.

**Main research tasks or actions aimed at climate change mitigation:**

Tasks related to limiting climate change apply to educational activities. For this purpose a comprehensive trainings for teachers - ESA project coordinators is foreseen. The trainings are conducted by experts and practitioners dealing with the problem of smog and preventing air pollution. After the training the teachers will be also involved in transferring the knowledge to students and the local community. They will be equipped with meters and didactic materials adapted to the students' needs and constantly improved. They are also supposed to initiate actions activating the school community in the subject of fighting SMOG.

Together with increasing the scope of the ESA project and the development of forms of activities, the preparation of teachers-coordinators will allow them to implement cascading training and information activities, directed to other teachers in their own and other institutions.

In addition, teachers-coordinators and other representatives of the pedagogical team involved in the implementation of the ESA project in the next stages will be invited to actively participate in the development of the concept of a scalable educational program in a nationwide formula.

**Does the project promote RRI? If yes, please shortly describe (maximum 100 words)**

The project does not directly support RRI, but its actions indirectly strengthen the RRI-based relationship. The project responds to the social needs related to the pursuit of life in better environmental conditions (clean air) by involving residents, including children, in efforts to improve them. They are based on the involvement of knowledge and technological solutions and making them available for use in monitoring changes in pollution levels - a measurement module responsible for monitoring climate change. The project also assumes active actions to limit climate change, which in addition to providing information on the state of human pressure (measurement results) are based on a series of training for students and residents led by teachers prepared in this direction, which aim to identify and disprove "smog myths" and answer to "important questions about smog".

**Please indicate the institution/s responsible for the implementation and its/their main tasks**

NASK - Scientific Academic Computer Network (Research Institute supervised by the Ministry of Digitization) - responsible for technological solutions of the monitoring network.

Polish Smog Alert - an initiative gathering Polish citizens concerned about the state of air in our country. It is co-created by: Krakow Smog Alarm, Podhale Smog Alert, Rabka Smog Alarm, Zabrze Smog Alarm, Nowy Sącz Smog Alert, Rybnik Smog Alert, Katowice Smog Alarm, Lower Silesian Smog Alarm and Social Development Initiative Center - responsible for training activities.

Local government and schools (including the Metropolia of Poznań and schools from its area) - responsible for the organization of subsequent measurement points and training places.

**Please tick the type of stakeholders involved and shortly describe them**

local government  civil society  academia & education  business

**Short description of stakeholders:**

- local self-government - as the institution supervising schools joining the project.
- society - students, residents, Poland Smog Alert participating in the project, exchanging knowledge and raising their ecological awareness
- academy & education - NASK and schools providing infrastructure and nodes of project relations networks - measuring and educational hubs

**Shortly describe the forms and tools of cooperation between partners involved in the implementation and the tools used for communication with the society (maximum 3000 characters including spaces):**

The ESA project assumes an active participation of teachers from schools that joined the program in educational and informational activities. For this purpose, trainings for teachers - project coordinators are carried out.

The activities of the Educational Anti-SMS Network focus on the overthrow of smog myths.

**Indicate the SDGs relevant for the project:**  
 Goal 4 – Quality education  
 Goal 11 – Sustainable cities and communities  
 Goal 13 – Climate action

**Web link to the project:** <https://esa.nask.pl/>

**Case study 3**

**Title:**  
**CHASE – PL Climate change impact assessment for selected sectors in Poland**

**Source of funding and the budget:**  
 3 939 357 PLN (920 322 EUR) Norway Grants and EEA Grants

**Timeframe:** January 2014 – April 2017

**Main challenges and goals regarding climate change identified:**

The **CHASE-PL** project contributed to improvement of understanding of climate change in Poland and its impacts in selected sectors in the country. The project extended in numerous ways the state-of-the-art of the detection of change, projection of climate change and its impacts on water management, ecosystems and biodiversity, agriculture and food production.

**Main keywords:** environmental protection and climate change, research and scholarships, civil society, health and children, gender equality, justice and cultural heritage.

**Methodological assumptions** of the CHASE-PL project:

- Assembling a set of data and data products (from different sources) and testing for change.
- Projections via empirical-statistical downscaling of General Circulation Models climate projections, bias correction / post-processing of downscaled projections, arriving at projections of extreme daily precipitation, and modelling of future snow conditions.
- Calibration and validation of SWAT model using multi-site calibration method, identification of in-stream and riparian ecosystems water needs, identification of key crops, current and future land use including different agricultural practices, and scenario based analysis of impact of climate change on ecosystems and agricultural production.
- Uncertainty analysis: identification of sources of uncertainty, quantification of components of uncertainty, and devising a framework for reducing uncertainty.

**Expected results** of the CHASE-PL project:

- Change detection in observed climate of Poland.
- Projections of climate variability and change for Poland.
- Large-scale climate change impact study in the basins of two large Polish rivers, the Vistula and the Odra, and in smaller sub-catchments.
- Issuance of management and policy recommendations and identification of feasible adaptation measures.
- Index-based assessment of climate change impacts for in-stream ecosystems, wetlands, and agrosystems.
- Broad dissemination agenda, ranging from papers in ISI-rated journals, a book on climate change and climate change impacts in Poland and presentations at scientific conferences to media-oriented products (interactive web mapping system).

**Main received results** of the CHASE-PL project:

- The bias corrected predictions for Poland say: „warmer and wetter”;
- The data sets (historical and projected variables) available for public (scientific) use;
- First physically based, distributed model for Odra River and Wisła River basins ready for use.

**Main indicators (of product/result/impact) applied (MoRRI indicators/SDGs indicators):**

Scientific results include a monograph in Polish and English, over 30 articles in scientific journals, scientific data and a geoportal devoted to climate change:

- 16 publications
- 7 publications in print
- 7 other publications
- 48 conference papers

**Geoportal:**

The purpose of the Geoportal is to present the results of calculations carried out as part of the CHASE-PL scientific project regarding observation and projection of climate change and their impact on selected sectors in Poland, including: changes in observed climate variables in 1961-1990, 1991-2013, 1971-2000, 1951-2013;

- adjusted projections of changes in air temperature and precipitation for periods 2021-2050 and 2071-2100 based on regional bundles and global climate models;
- results of calculations of the hydrological SWAT model for Vistula and Odra river basins for various climate change scenarios;
- the consequences of climate change for river ecosystems, wetlands and agriculture.

**Main research tasks or actions aimed at climate change adaptation:**

The project implemented in 2014-2017 (40 months) contributed significantly to improving the understanding of the impact of climate change on selected sectors in Poland: water resources, reducing the risk of natural hazards, environment, agriculture and health. The project improved the state of knowledge in the field of detection of changes, climate change projections and their consequences, and interpretation of uncertainty.

The project provided:

- information on changes in observed climate variables,
- corrected projections of changes in air temperature and precipitation,
- results of calculations of the hydrological SWAT model for Vistula and Odra river basins for various climate change scenarios
- dissemination of information on the consequences of climate change for river ecosystems, wetlands and agriculture.

**Main research tasks or actions aimed at climate change mitigation:**

The CHASE-PL project contributed to the development of an interactive network mapping system ([climateimpact.sggw.pl](http://climateimpact.sggw.pl)), enabling interested parties to use the project results in their own research on climate change, as well as reducing the existing information gap on the consequences of climate change among decision makers, stakeholders and the general public Polish. Free and easy access to processed historical data and hydro-climatic projections allow a critical comparison of different approaches to assessing the effects of climate change. Lessons learned from such research can help raise awareness of the importance of climate change and its consequences, and identify possible strategies for tackling and adapting to climate change.

**Does the project promote RRI? If yes, please shortly describe (*maximum 100 words*)**

There are no direct references to the use and promotion of RRI. Indirectly, the activities of the project are focused on the dissemination of awareness about climate change, which however takes place without active participation and social co-creation, more in the upper-down model than the bottom-up model.

**Please indicate the institution/s responsible for the implementation and its/their main tasks**

**Beneficiary:** Institute for Agricultural and Forest Environment (IAFE), Polish Academy of Sciences  
Bukowska 19, 60-809 Poznań, Poland  
[www.isrl.poznan.pl](http://www.isrl.poznan.pl)

**Norwegian Partner:** Norwegian Meteorological Institute (MET Norway)  
Henrik Mohns Plass 1  
0313 Oslo, Norway

**Polish Partner:** Warsaw University of Life Sciences – SGGW, Faculty of Civil and Environmental Engineering  
ul. Nowoursynowska 166  
02-787 Warszawa, Polska, Poland

**Please tick the type of stakeholders involved and shortly describe them**

local government  civil society  academia & education  business

**Short description of stakeholders:**

- academia & education - research centers that conduct research on climate change and adapt to it
- business and the society as final users of the research results

**Shortly describe the forms and tools of cooperation between partners involved in the implementation and the tools used for communication with the society (maximum 3000 characters including spaces):**

The project has contributed to filling the information gap on the consequences of climate change among policy makers, stakeholders and the general public, which is particularly important in the context of adaptation. It can be treated as a substitute for services poorly rooted in Poland as "climate services".

**Indicate the SDGs relevant for the project:**

Goal 13 – Climate action

**Web link to the project:** <http://www.chase-pl.pl/>

**3. Projects aimed at climate change adaptation and mitigation implemented by business (Corporate Social Responsibility, CSR strategies might be useful)**

*(please provide max. 3 cases using the template below)*

**Case study 1**

**Enterprise Name:**

**Volkswagen Poznań**

**Sector of activity:**

transport (motor vehicle production)

**Size and number of employees:**

large enterprise, above 11.000 employees

**Source of funding and the budget:**

private (corporate) funds, budget: 24.000 PLN ( 5.600 EUR)

**Timeframe:** 2017-2018

**Title of the project:** **"Blue Grants" (5<sup>th</sup> edition)**

**Main challenges and goals regarding climate change identified:**

Preparing and implementation of actions/projects/programmes for:

- improvement of ecological awareness among society,
- diffusion of knowledge about wildlife conservation and biodiversity,
- promoting of active, ecological education,
- supporting local initiatives serving environmental protection in Wielkopolska region,

**Main indicators (of product/result/impact) applied (MoRRI indicators/SDGs indicators):**

- number of planted trees [over 1000],
- number of children taking part in thematic events,
- number of deaf people taking part in the project,

**Main actions aimed at climate change adaptation:**

- *"And you can increase the biodiversity of our forests"* - nearby forest areas were enriched by over 1000 various tree plants

**Main actions aimed at climate change mitigation:**

- *"Butterfly Garden"* - the creation of a beautiful, blooming and full of colorful butterflies garden with a playground near the kindergarten, open to residents of the district. What is more, deaf people also took part in the project implementation.

<ul style="list-style-type: none"> <li>- "Eco-valley - it's starting in Kiekrz!" - promoting the active education of Kiekrz's residents - creating a place to gaining knowledge in practice - the Kiekrz's Ecological Park, which regularly hosts numerous thematic events, exhibitions, competitions, talks, open classes or lectures.</li> <li>- "With Blues play green - EKO -PATROL in the service of nature protection" - occupational therapy workshops in Września – ecological education and building ecological awareness [out of the Poznań agglomeration area]</li> <li>- "Sensory wandering of "Happy Gnomes" - the construction of a special sensory path for the pupils of the kindergarten, including several autistic children [not linked directly to climate change issues]</li> </ul>
<p><b>Please indicate the institution/s responsible for the implementation and its/their main tasks</b></p> <ol style="list-style-type: none"> <li>1) Babki Forest Inspectorate - "And you can increase the biodiversity of our forests"</li> <li>2) Kindergarten No. 40 'Poznańskie Koziołki' - "Butterfly Garden"</li> <li>3) 'Aster' association - "Eco-valley - it's starting in Kiekrz!"</li> <li>4) Occupational Therapy Workshops in Września - "With Blues play green - EKO - PATROL in the service of nature protection"</li> <li>5) Kindergarten "Wesołe Skrzaty" in Pobiedziska - "Sensory wandering of "Happy Gnomes"</li> </ol>
<p><b>Please tick the type of stakeholders involved and shortly describe them</b></p> <p><input type="checkbox"/> local government <input checked="" type="checkbox"/> civil society <input type="checkbox"/> academia &amp; education <input type="checkbox"/> business</p> <p><b>Short description of stakeholders:</b></p> <ul style="list-style-type: none"> <li>- <b>civil society:</b> non-governmental organizations (NGOs)</li> <li>- <b>academia &amp; education:</b> schools and kindergartens,</li> <li>- <b>business:</b> VW Poznań employees</li> </ul>
<p><b>Shortly describe the forms of cooperation between partners involved in the implementation and the tools used for communication with the society (maximum 3000 characters including spaces):</b></p> <ul style="list-style-type: none"> <li>- Webpage as a tool for promotion and dissemination the main information about grants (<a href="http://www.niebieskiegranty.pl/#/">http://www.niebieskiegranty.pl/#/</a>)</li> <li>- Workshops,</li> <li>- News in local newspapers (i.e. <a href="https://gloswielkopolski.pl/niebieskie-granty-volkswagen-poznan-daje-24-tysiacz-zlotych-na-ekologiczne-projekty/ar/12911025">https://gloswielkopolski.pl/niebieskie-granty-volkswagen-poznan-daje-24-tysiacz-zlotych-na-ekologiczne-projekty/ar/12911025</a>),</li> </ul>
<p><b>Indicate the SDGs relevant for the project:</b></p> <p>Goal 11: Sustainable Cities and Communities  Goal 13: Climate Action  Goal 15: Life On Land</p>
<p><b>Web links to a project or to CSR strategy:</b></p> <p><a href="http://www.niebieskiegranty.pl/#/start">http://www.niebieskiegranty.pl/#/start</a></p>

<https://volkswagen-poznan.pl/en/responsibility/strategy>  
<https://gloswielkopolski.pl/niebieskie-granty-volkswagen-poznan-daje-24-tysiace-zlotych-na-ekologiczne-projekty/ar/12911025>

## Case study 2

**Enterprise Name:**

**Kompania Piwowarska S.A.**

**Sector of activity:**

Brewing

**Size and number of employees:**

large enterprise, 3.200 employees

**Source of funding and the budget:**

private (corporate) funds, budget: 1.000.000 PLN

**Timeframe:**

2019 –

**Title of the project:**

**LECHSTARTER programme (4<sup>th</sup> edition)**

**Main challenges and goals regarding climate change identified:**

The aim of the Program "LECHSTARTER" is to inspire and support positive and pro-social (socially useful) changes in Polish cities, with the participation of the "Lech" brand belonging to the Organizer, as part of a project supporting corporate social responsibility. Support under the Program may be provided for the purpose of implementing publicly available and useful for local communities.

Poznań is one of cities taking a part in the programme.

**Main indicators (of product/result/impact) applied (MoRRI indicators/SDGs indicators):**

- Number of created green spaces [3]

**Main actions aimed at climate change adaptation:**

N/A

**Main actions aimed at climate change mitigation:**

Creating a green space of modern design. Place has a shape of square with internal atrium, where plants are an important element (they will grow on the nylon lines forming the side walls. Green also will complement the space around the structure.)

**Please indicate the institution/s responsible for the implementation and its/their main tasks**

Malta Foundation from Poznań is a local partner of urban action LECHSTARTER. Its task involve:

- promotion of action and enhancing to voting on Poznań,
- co-creation of friendly, aesthetic, and safe relax zone,
- gathering different social groups,
- being open-minded for local events and projects implemented in cooperation with activists, artists and culture animators,

**Please tick the type of stakeholders involved and shortly describe them**

local government  civil society  academia & education  business

**Short description of stakeholders:**

**Civil society:** public benefit organizations, associations, foundations, housing communities, housing cooperatives, whose main activity is focused on pro-social development of urban space

**Shortly describe the forms of cooperation between partners involved in the implementation and the tools used for communication with the society (maximum 3000 characters including spaces):**

1. The designer selected by the Kompania Piwowarska S.A. will prepare three innovative projects of Lech's artistic installations, which corresponds to the scarcity of public spaces and greenery in the city, and at the same time has a positive impact on the cities. In total, three (three) projects of Lech's artistic installations will be prepared.
2. Then, 16 entities (1 from each voivodeship) chosen by the Kompania Piwowarska S.A. will be invited to participate in the Programme, such as: public benefit organizations, associations, foundations, housing communities, housing cooperatives, whose main activity is focused on pro-social development of urban space.
3. Each invited participant will choose one project of Lech's artistic installation which in his opinion best fits in and responds to the needs of the city and the local community. After selecting the project by the Organizations, the Designer will adapt the selected project to a specific location, both in terms of space management and personalization for a specific place.
4. In the second stage of the Programme, voting will take place on the [www.lechstarter.pl](http://www.lechstarter.pl) (everyone can vote). There will be 3 winner-cities (with the largest number of votes) where the projects will be implemented.

**Voting tools:**

- 1) Webpage (by clicking on the link sent on e-mail adress)
- 2) Application published on brand Lech fanpage

**Indicate the SDGs relevant for the project:**

Goal 11: Sustainable Cities and Communities

**Web links to a project or to CSR strategy:**

<a href="https://lechstarter.urbanforms.org/#o-akcji">https://lechstarter.urbanforms.org/#o-akcji</a>
<b>Case study 3</b>
<b>Enterprise Name:</b> <u>Allegro.pl sp. z o. o. (Allforplanet foundation)</u>
<b>Sector of activity:</b> e-commerce
<b>Size and number of employees:</b> large enterprise, 1446 employees
<b>Source of funding and the budget:</b> material and financial donations
<b>Timeframe:</b> 2018
<b>Title of the project:</b> <u>Spin Kilometers 2018, 7<sup>th</sup> edition (PL: Kręć Kilometry 2018, Edycja VII)</u>
<b>Main challenges and goals regarding climate change identified:</b> promoting eco-friendly transport (cycling)
<b>Main indicators (of product/result/impact) applied (MoRRI indicators/SDGs indicators):</b> <ul style="list-style-type: none"> <li>– Number of spinned kilometers in 2018 [over 75 mlns],</li> <li>– Number of project participants in 2018 [over 200 thous.],</li> </ul>
<b>Main actions aimed at climate change adaptation:</b> N/A
<b>Main actions aimed at climate change mitigation:</b> <ol style="list-style-type: none"> <li>1) <b>Education</b> – motivating for cycling, teaching of safe behaviors and enhancing employers to implementing pro-cycling solutions.</li> <li>2) <b>Race for awards</b> - active participants of the project are awarded,</li> <li>3) <b>Fight for bicycle stands</b> - organizing a nationwide competition of cities for bicycle stands, which are an important element of urban infrastructure.</li> <li>4) <b>Bicycle aid-kits</b> - equipping cyclists with bicycle aid-kits with safety in mind.</li> <li>5) <b>Cycling Poland</b> - The largest bicycle website in Poland, serving local communities and local governments. It gathers research results and statistics on cyclists and their habits.</li> </ol>
<b>Please indicate the institution/s responsible for the implementation and its/their main tasks</b> <b>Institution:</b> <i>Allforplanet foundation (within Allegro sp. z o. o.)</i> - tasks: <ul style="list-style-type: none"> <li>– organisation and coordination of the project;</li> <li>– providing i.e.: awards, bicycle stands and bicycle aid-kits;</li> <li>– choosing the winners,</li> </ul>

<ul style="list-style-type: none"> <li>- data gathering and publishing,</li> <li>- law affairs (i.e. data protection)</li> </ul>
<p><b>Please tick the type of stakeholders involved and shortly describe them</b></p>
<p><input type="checkbox"/> local government <input checked="" type="checkbox"/> civil society <input type="checkbox"/> academia &amp; education <input type="checkbox"/> business</p> <p><b>Short description of stakeholders:</b>  <b>civil society:</b></p> <ul style="list-style-type: none"> <li>- The Contest Participant may be every adult. Persons who are under 18 years may enter the Competition only with the consent of their legal guardians.</li> <li>- 67 organizations and associations supported and promoted „Spin Kilometers”</li> </ul>
<p><b>Shortly describe the forms of cooperation between partners involved in the implementation and the tools used for communication with the society (maximum 3000 characters including spaces):</b></p> <ul style="list-style-type: none"> <li>- All cycling activities in the campaign "Spin Kilometers" are carried out using mobile applications, which give an interesting knowledge about the cycling habits of Poles.</li> <li>- <a href="https://rowerowapolska.pl/">https://rowerowapolska.pl/</a> → Bicycle webpage and extensive statistics data base</li> <li>- Various ways of promotion: <ul style="list-style-type: none"> <li>✓ Prepared informations for mass media (i.e. posters, videos),</li> <li>✓ Twitter, facebook, Pinterest profiles (#kreckilometry)</li> <li>✓ Each participant can invite friends to joining the event by sending an e-mail information via e-form under link: <a href="https://kreckilometry.pl/wspieraj">https://kreckilometry.pl/wspieraj</a></li> <li>✓ Special materials for bloggers,</li> </ul> </li> </ul>
<p><b>Indicate the SDGs relevant for the project:</b>  Goal 11: Sustainable Cities and Communities</p>
<p><b>Web links to a project or to CSR strategy:</b>  <a href="https://kreckilometry.pl/o-kampanii">https://kreckilometry.pl/o-kampanii</a>  <a href="https://allforplanet.pl/#!/pl/reports">https://allforplanet.pl/#!/pl/reports</a>  <a href="https://raportcsr.allegro.pl/en/">https://raportcsr.allegro.pl/en/</a></p>

<p><b>4. Projects aimed at climate change adaptation and mitigation implemented by local government</b>  <i>(please provide max. 3 cases using the template below)</i></p>
<p style="text-align: center;"><b>Case study 1</b></p>
<p><b>Title:</b>  <b><u>Waste management system for the City of Poznań</u></b></p>

<p><b>Source of funding and the budget:</b></p> <p>Hybrid financing model which combines the use of public funds, funds obtained from the European Union and private capital.</p> <p>Budget: 925 mln zł (EU co-financing is 330 mln zł - Operational Program Infrastructure and Environment 2007-2013)</p>
<p><b>Timeframe:</b></p> <p>April 2013 - December 2016 (investment under construction)</p>
<p><b>Main challenges and goals regarding climate change identified:</b></p> <ul style="list-style-type: none"> <li>– sorting and organization of municipal waste management</li> <li>– adaptation of the entire waste management system in this area to formal and legal, technical and ecological regulations, applicable both in Poland and in the European Union</li> <li>– ecological education of citizens</li> <li>– promotion of ecological waste management</li> </ul>
<p><b>Main indicators (of product/result/impact) applied (MoRRI indicators/SDGs indicators):</b></p> <p>not indicated</p>
<p><b>Main actions aimed at climate change adaptation:</b></p> <ul style="list-style-type: none"> <li>– organisation of waste management conducive to climate change adaptation of City of Poznań</li> <li>– program of ecological education for citizens</li> <li>– program of ecological waste management promotion</li> </ul>
<p><b>Main actions aimed at climate change mitigation:</b></p> <ul style="list-style-type: none"> <li>– organisation of waste management conducive to climate change mitigation of City of Poznań</li> <li>– program of ecological education for citizens</li> <li>– program of ecological waste management promotion</li> </ul>
<p><b>Please indicate the institution/s responsible for the implementation and its/their main tasks</b></p> <p>City of Poznań (local government):</p> <ul style="list-style-type: none"> <li>– transferring a plot to the Private Partner for building the installation,</li> <li>– building a new road infrastructure for installation,</li> <li>– supporting the Private Partner in administrative proceedings,</li> <li>– payment of compensation for the neutralization of 210,000 tonnes of waste per year</li> </ul> <p>SITA Green Energy (business):</p> <ul style="list-style-type: none"> <li>– project, financing and construction of the installation,</li> </ul>

- obtaining permits and decisions necessary to operate the IPTOK,
- IPTOK management for 25 years since the installation was launched,
- maintaining the installation in good technical condition,
- transferring revenues from the sale of electricity and heat to the city,
- handing IPTOK to the City after the expiry of the PPP contract period.

inhabitants (society):

- selective waste collection,
- waste management fee

**Please tick the type of stakeholders involved and shortly describe them**

local government  civil society  academia & education  business

**Short description of stakeholders:**

**Poznan City Hall (local government)** - The City performs the tasks of a commune and a district, and tasks assigned within the scope of governmental administration.

Poznań's local government's legislative and decision-making body is the City Council, which sets local by-laws, passes budgets and inspects their execution, decides on local taxes and charges on the grounds of existing legislature and adopts resolutions on property rights. The City Council and the Mayor are the elected bodies.

Local government elections are held every four years to elect the City Council and the Mayor of the City. Council members and the Mayor are elected in general, direct elections on the secret ballot and "one person-one vote" principle. The City Council consists of 37 councilors. The Mayor of the City holds executive power, manages the Poznań City Hall, and directs the work of his deputies, the secretary and the treasurer, who are responsible for administrating specific municipal issues designated to them by the Mayor.

**SITA Green Energy (business)** is a project company set up to implement the installation of Thermal Transformation of Municipal Waste in Poznań. SITA Green Energy has extensive know-how and experience in the implementation of this type of installation. The company was founded by SITA Polska sp. z o. o. one of the leading national entities dealing in waste management, which belongs to the concern SUEZ ENVIRONMENT, present on 5 continents and a world leader in water and waste management. The SUEZ Group has built and manages nearly 50 "energy from waste" plants in Europe, where approx. 9 million tonnes of waste is transformed annually. The other shareholder is Marguerite Waste Polska, a member of the Marguerite Fund, which was established by leading European financial institutions, among others the European Investment Bank, for the implementation of investments in the transport infrastructure, energy and renewable energy sector. SITA Zielona Energia cooperated in the construction of a Poznań installation with companies recognized in the world as experts in their fields, ensuring the highest quality of work and services. In the field of technology, SITA is supported by Hitachi Zosen Inova, which has completed almost half of such facilities in Europe for SUEZ EnvironNement. Construction works are

carried out by Hochtief Polska and Hochtief Solutions - a German leader in European construction, having the appropriate know-how in the construction of such facilities.

**Shortly describe the forms of cooperation between partners involved in the implementation and the tools used for communication with the society (maximum 3000 characters including spaces):**

Cooperation has been expressed through the division of tasks (see above - main tasks of stakeholders).

Communication with the society:

- program of ecological education for citizens,(e.g. videos)
- program of ecological waste management promotion (e.g. web page, videos)

**Indicate the SDGs relevant for the project:**

Goal 7 - affordable and clean energy

Goal 9 - industry, innovation and infrastructure

Goal 13 - climate action

**Web link to the project:**

- <http://www.suez-zielonaenergia.pl/>
- <https://www.odzyskajkorzystaj.pl/o-projekcie/najwazniejsze-informacje>
- <https://docplayer.pl/13771972-Instalacja-termicznego-przekształcania-odpadow-komunalnych.html>

## Case study 2

**Title:**

**100 trees for Łazarz**

**Source of funding and the budget:** grants received from City of Poznan within a participatory budget or other competitions for a social project

**Timeframe:** 2016

**Main challenges and goals regarding climate change identified:**

- improving the quality of life of the district's residents
- improving the quality of microclimate

**Main indicators (of product/result/impact) applied (MoRRI indicators/SDGs indicators):**

- not foreseen

**Main actions aimed at climate change adaptation:**

- the introduction of tree plantings in the streets of the densely built-up Łazarz

**Main actions aimed at climate change mitigation:**

- the introduction of tree plantings in the streets of the densely built-up Łazarz

**Please indicate the institution/s responsible for the implementation and its/their main tasks**

City of Poznań (local government):

- planting appropriately selected species of trees, the exchange of ground and getting rid of old roots.
- paving works around the tree and repairing the pavement destroyed by cars
- financing the project

Citizens:

- preparation of the project and its cost estimate

**Please tick the type of stakeholders involved and shortly describe them**

local government  civil society  academia & education  business

**Short description of stakeholders:**

**Poznan City Hall (local government)** - The City performs the tasks of a commune and a district, and tasks assigned within the scope of governmental administration. Poznań's local government's legislative and decision-making body is the City Council, which sets local by-laws, passes budgets and inspects their execution, decides on local taxes and charges on the grounds of existing legislature and adopts resolutions on property rights. The City Council and the Mayor are the elected bodies.

Local government elections are held every four years to elect the City Council and the Mayor of the City. Council members and the Mayor are elected in general, direct elections on the secret ballot and "one person-one vote" principle. The City Council consists of 37 councilors. The Mayor of the City holds executive power, manages the Poznań City Hall, and directs the work of his deputies, the secretary and the treasurer, who are responsible for administrating specific municipal issues designated to them by the Mayor.

**Citizens of Poznan** proposing joint projects to a Poznan Participatory Budget

**Shortly describe the forms of cooperation between partners involved in the implementation and the tools used for communication with the society (maximum 3000 characters including spaces):**

The communication between the City Hall and citizens is both traditional and takes form of meetings, e-mails, phone calls and online (social media, web page etc.).

**Indicate the SDGs relevant for the project:**

Goal 11 - sustainable cities and communities

**Web link to the project:**

- [https://pbo2016.um.poznan.pl/i/pbo-2016/proposal/256-100\\_Drzew\\_dla\\_%C5%81azarza](https://pbo2016.um.poznan.pl/i/pbo-2016/proposal/256-100_Drzew_dla_%C5%81azarza)

Case study 3
<b>Title:</b> <b>Wartostrada - Poznań pedestrian and bicycle route along the Warta river</b>
<b>Source of funding and the budget:</b> grants received from City of Poznan within a participatory budget or other competitions for a social project
<b>Timeframe:</b> form 2011
<b>Main challenges and goals regarding climate change identified:</b> <ul style="list-style-type: none"> <li>- consolidation of the alternative means of communication - bicycle</li> <li>- environmental protection through the promotion of moving in an alternative way to cars</li> </ul>
<b>Main indicators (of product/result/impact) applied (MoRRI indicators/SDGs indicators):</b> <ul style="list-style-type: none"> <li>- not foreseen (długość)</li> </ul>
<b>Main actions aimed at climate change adaptation:</b> <ul style="list-style-type: none"> <li>- change the mean of transport from car to foot, bicycle, scooter, rollers</li> </ul>
<b>Main actions aimed at climate change mitigation:</b> <ul style="list-style-type: none"> <li>- change the mean of transport from car to foot, bicycle, scooter, rollers</li> </ul>
<b>Please indicate the institution/s responsible for the implementation and its/their main tasks</b>  City of Poznań (local government): <ul style="list-style-type: none"> <li>- building a coherent pedestrian-bicycle system running along the Warta River</li> <li>- development of a document by the Department of Environmental Protection of the City of Poznań Office "Concept and optimization of pedestrian and bicycle system (walking and cycling routes) WARTOSTRADA in the Warta river valley in floodplain and shafts with the system of inclusions for transversal communication"</li> <li>- financing the project</li> </ul> Citizens: <ul style="list-style-type: none"> <li>- proposal of the project,</li> <li>- using the Wartostrada route instead of traditional means of transport (e.g. car)</li> </ul>
<b>Please tick the type of stakeholders involved and shortly describe them</b>
<input checked="" type="checkbox"/> local government <input checked="" type="checkbox"/> civil society <input type="checkbox"/> academia & education <input type="checkbox"/> business
<b>Short description of stakeholders:</b>

**Poznan City Hall (local government)** - The City performs the tasks of a commune and a district, and tasks assigned within the scope of governmental administration. Poznań's local government's legislative and decision-making body is the City Council, which sets local by-laws, passes budgets and inspects their execution, decides on local taxes and charges on the grounds of existing legislature and adopts resolutions on property rights. The City Council and the Mayor are the elected bodies.

Local government elections are held every four years to elect the City Council and the Mayor of the City. Council members and the Mayor are elected in general, direct elections on the secret ballot and "one person-one vote" principle. The City Council consists of 37 councilors. The Mayor of the City holds executive power, manages the Poznań City Hall, and directs the work of his deputies, the secretary and the treasurer, who are responsible for administrating specific municipal issues designated to them by the Mayor.

**Citizens of Poznan** proposing joint projects to a Poznan Participatory Budget

**Shortly describe the forms of cooperation between partners involved in the implementation and the tools used for communication with the society (maximum 3000 characters including spaces):**

The communication between the City Hall and citizens is both traditional and takes form of meetings, e-mails, phone calls and online (social media, web page etc.).

**Indicate the SDGs relevant for the project:**

Goal 11 - sustainable cities and communities

Goal 13 - climate action

**Web link to the project:**

- [http://www.poznan.pl/mim/main/object.html?id\\_klasy=5001&id\\_objektu=67106&lang=pl](http://www.poznan.pl/mim/main/object.html?id_klasy=5001&id_objektu=67106&lang=pl)
- <http://www.poznan.pl/mim/main/inwestycje-w-srodmiesciu,poi,5061/wartostrada,64642.html>

### Short summary of chosen projects (parts 1-4)

Present challenges for Poznan Agglomeration are reflected in a new urban policy development and take into account climate change adaptation and mitigations actions. The most pressing problems indicated by research are the following:

- Air quality - threats in exceeding the permissible concentrations of PM10 and PM 2,5 and the harmful effects of smog on residents health
- Water management- systematic and complex approach to rainwater and meltwater management

- Spatial planning - supporting investments in green infrastructure (including forests, river valley vegetation, parks, other biologically active areas) that provide a range of regulatory services.

The following actions, programs or projects are planned for Poznan Agglomeration to reduce the negative effects of the climate change and to adapt to them:

- Reducing CO<sub>2</sub> emissions in Poznan Agglomeration (especially in the housing and transport sectors), improving air quality, implementing of a low-emission economy (reducing energy consumption, increasing the use of renewable energy).
- Information and education activities aimed at raising the climate change awareness among citizens. They include above all the dissemination of knowledge about threats related to climate change, their consequences, appropriate and inappropriate behaviours in the situation of threats, best adaptation practices and activities in the field of information and warning with special attention to sustainable water management in the city.
- Establishing cooperation between stakeholders involved in climate change adaptation and mitigation actions organisation of exercises of emergency services, funds raising, updating spatial planning documents, the establishment of one organizational unit capable to plan and coordinate activities in the field of water management.
- New investments in developing/protecting green areas (activities particularly in the city center and districts with tenement housing) or "grey"solutions (buildings, modernization of facilities and systems, switch of sealed surfaces by permeable).
- Promoting the Poznań Agglomeration as one of the European leaders in the field of innovation and implementation of nature based solutions (NBS) - inspired, supported and based on green and blue infrastructure, which significantly influence the adaptation to climate change, as well as the high quality of life of residents.

The exchange of experiences between stakeholders takes place within regular/periodic workshops (design and implementation of green-blue infrastructure solutions) and consultations. It is recommended to develop and strengthen dialogue & cooperation between the inhabitants of the region and policy makers infrastructure managers, social organizations and entrepreneurs. The inclusion of all significant stakeholders in the decision-making process would be an opportunity to improve the effectiveness of climate actions and would secure a greater impact. The growing involvement of local government units, NGOs and COSs in national and international projects would also a further opportunity to exchange experience and transfer best practices to the local level. The factor limiting the effectiveness of actions in the field of climate adaptation and mitigation in Poland is still an important role of coal in the energy sector. More decisive interventions for the decarbonisation of this sector will be decisive for further progress in the field of climate change in this region of Europe.