

STATE OF THE ART OF CLIMATE CHANGE ADAPTATION AND MITIGATION IN OLDENBURGER MUENSTERLAND (GERMANY)

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 Oldenburger Muensterland (Germany) 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 THE PILOT REGION

1. Name of the region, its location and a short description

The German pilot region “Oldenburger Muensterland” consists of the two counties Cloppenburg and Vechta and is located in the north-west of Germany, in the federal state Lower-Saxony. Regarding road network, the region is conveniently placed at a north-south axis. The public transport network is only poorly developed. In contrast to many other rural areas in Germany, the Oldenburger Muensterland still records a population increase. From an economic point of view the agriculture and food sector plays a major role in the region with well-connected production, distribution and processing centers. Almost 70% of the whole pilot region area are dedicated as agricultural area. The Oldenburger Muensterland has the highest concentration of processors of intensive animal farming in Germany. Hence, a particular focus in this pilot region is set on the meat production value chain (pork and poultry) with all related climatic challenges.

Climate change adaptation strategies are emerging slowly in the Oldenburger Muensterland. However, the consciousness for climate change mitigation and adaptation can still be improved. Current actions comprise public tree planting and education for Sustainable Development/ climate change education in schools. Local governments start programs in order to reduce energy consumption. Several cities in the pilot regions started to employ local climate protection managers.

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

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

01: County of Cloppenburg – „Einstiegsberatung Kommunalen Klimaschutz“

Title:

“Final report of introductory consultation regarding municipal climate protection” of the county of Cloppenburg

Timeframe:

2018

Main challenges and goals regarding climate change identified:

Challenges:

- Renewable energy sources
- Future mobility of inhabitants (use of bicycles, pedelecs)
- Energy consultations for inhabitants

Goals:

- Establishment of supportive structures at municipal level
- Implementation of specific projects
- Identification of a pioneering role

<p>Main indicators (of product/result/impact) applied (MoRRI indicators/SDGs indicators):</p> <p>In this “introductory consultation” a guidance regarding indicators took place, but the final report does not include any defined indicators.</p>
<p>Main actions aimed at climate change adaptation:</p> <ul style="list-style-type: none"> - None mentioned
<p>Main actions aimed at climate change mitigation:</p> <ul style="list-style-type: none"> - Establishment of a coordination office (two persons) “Climate-Energy-Mobility” - Establishment of an internal working group “Climate-Energy-Mobility” - Network of stakeholders in the county “Climate alliance”
<p>Are the guidelines for operationalization of activities related to the climate change provided? If yes, please describe them.</p> <p>No detailed description of activities provided in this document (first consultation for the community regarding climate protection activities)</p>
<p>Indicate the SDGs relevant for the region:</p> <p>7: Affordable and clean energy 8: Decent work and economic growth 9: Industry, innovation and infrastructure 11: Sustainable cities and communities 15: Life on land 17: Partnerships for the goals</p>
<p>Is there a need for cooperation between different groups of stakeholders articulated/described?</p> <p><input checked="" type="checkbox"/> YES <input type="checkbox"/> NO</p>
<p>If YES, mark the appropriate stakeholder groups and describe them</p>
<p><input checked="" type="checkbox"/> local government <input checked="" type="checkbox"/> civil society <input type="checkbox"/> academia & education <input checked="" type="checkbox"/> business</p> <p>Short description of stakeholders:</p> <p>Not further specified in the document (stakeholders located in the county of Cloppenburg)</p>
<p>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):</p> <p>The plan is to establish a working group “Climate-Energy-Mobility” with representatives of different stakeholder groups. Besides, the county wants to establish a “stakeholder network” for better exchange and first of all to get an overview of existing initiatives regarding climate actions.</p>
<p>Web link to the document:</p> <p>https://www.lkclp.de/uploads/files/einstiegsberatung_kommunaler_klimaschutz.pdf</p>
<p>02: City of Damme – “Integriertes Klimaschutzprojekt“</p>
<p>Title:</p> <p>“Integrated concept of climate protection”, city of Damme</p>

<p>Timeframe: March – December 2014</p>
<p>Main challenges and goals regarding climate change identified:</p> <p>Challenges:</p> <ul style="list-style-type: none"> - Reduction of CO₂-emissions especially in business sector - Consideration of controversial opinions <p>Goals:</p> <ul style="list-style-type: none"> - Actions for awareness-raising and motivation to participate in projects - Reduction of CO₂-emission, e.g. by <ul style="list-style-type: none"> o Strengthening foot and bicycle traffic and public transport for short distance traffic o Strengthening power-heat coupling projects
<p>Main indicators (of product/result/impact) applied (MoRRI indicators/SDGs indicators):</p> <ul style="list-style-type: none"> - Until 2030, 50% of the private homes will be energetically redeveloped - Energy saving in private homes – 25% reduction until 2030 - All agricultural businesses save 1.5% of its energy consumption until 2030 - Shift of 20% of the car trips to the ecological alliance until 2030
<p>Main actions aimed at climate change adaptation:</p> <p>None mentioned; only noted, that regulations made by the urban land-use/development planning should consider consequences regarding adaptation (e.g. compact construction)</p>
<p>Main actions aimed at climate change mitigation:</p> <ul style="list-style-type: none"> - Establishment of consultation network, climate action manager - Energetic neighborhood concepts - Establishment of an “Energy-fair” - Annual Climate Protection prize - Certified “Energy-management-system” - “Traffic development plan”/Mobility concept (especially regarding bicycles) - Instructions for saving fuel (cooperation with driving schools) - Heat generation from waste water - Intensive actions regarding awareness-raising and improving the acceptance of the actions
<p>Are the guidelines for operationalization of activities related to the climate change provided? If yes, please describe them.</p> <p>The concept includes a detailed action catalogue, in which each planned action is described in a profile format (including short summary, goals of the action, What has changed, after the action was implemented?, procedure/working steps, What stakeholder groups participated?, CO₂-relevance and duration and period of the action)</p>
<p>Indicate the SDGs relevant for the region:</p> <p>7: Affordable and clean energy 8: Decent work and economic growth 9: Industry, innovation and infrastructure 11: Sustainable cities and communities</p>

<p>15: Life on land 17: Partnerships for the goals</p>
<p>Is there a need for cooperation between different groups of stakeholders articulated/described? <input type="checkbox"/>x YES <input type="checkbox"/>NO</p>
<p>If YES, mark the appropriate stakeholder groups and describe them</p>
<p><input type="checkbox"/> local government <input type="checkbox"/> civil society <input checked="" type="checkbox"/> academia & education <input checked="" type="checkbox"/> business</p> <p>Short description of stakeholders:</p> <ul style="list-style-type: none"> - “Runder Tisch” (round table): group of policy makers and citizens, external moderation -> constituted because of specific issues regarding the construction of biogas plants - “Expert talks”: with the two biggest companies in the city, the representatives of all city districts, the Chamber of Agriculture and student representatives - Town meeting with an experience report of a local business regarding the energy saving actions
<p>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):</p> <p>A round table with an external moderator was established by the city because of specific issues regarding the construction of biogas plants. This round table suggested the creation of this “Integrated concept of climate protection”, they met 11 times from 2011 to 2013.</p> <p>Expert talks were performed to inform about the participation in the creation process of the concept and to gain multipliers, among others students were motivated to participate in the process.</p> <p>A Town meeting was performed during the project time to inform all interested citizens. Two representatives of a local business were involved in this meeting to present their own experiences with energy saving actions.</p>
<p>Web link to the document: https://www.damme.de/media/custom/2432_678_1.PDF?1433966715</p>
<p>3. Main stakeholders in the region (quadruple helix model)</p>
<p>a) Local government (indicate local/regional institutions and their main tasks referring to environmental protection and climate change adaptation & mitigation)</p>
<ul style="list-style-type: none"> - County of Cloppenburg: report on climate protection - City of Cloppenburg: climate protection officer, energy saving campaigns (with schools, home owners, Earth Hour) - City of Damme: integrated concept of climate protection, employment of a climate protection officer since 2016, energy saving campaigns (especially regarding house owners and street lighting) - City of Lönigen: integrated concept of climate protection

- City of Lohne: introductory counselling regarding municipal climate protection (01.03.2018-28.02.2019), working group “climate protection”, employment of a climate protection officer planned

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)

- Population: 306,000 inhabitants
- Area: 2213 km²
- **Voter turnout in county of Cloppenburg** (election for county council in 2016): **[seats in the county council]**
28 CDU (Christian Democratic Union)
10 SPD (Social Democratic Party)
2 each: FDP (Liberal Democratic Party), Bündnis 90/Die Grünen (The Greens), AfD (Alternative for Germany)
4 total: Others

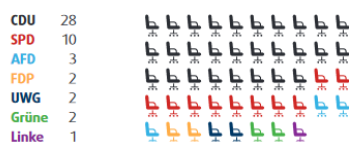


https://www.lkclp.de/uploads/files/datenspiegel_2019.pdf

- **Voter turnout county of Vechta Cloppenburg** (election for county council in 2016): **[seats in the county council]**
28 CDU (Christian Democratic Union)
10 SPD (Social Democratic Party)
3 AfD (Alternative for Germany)
2 each: Bündnis 90/Die Grünen (The Greens) and UWG (Independent Voters Association)
1: Die Linke (Left Party)

Sitzverteilung im Kreistag

49 Mitglieder (48 Kreistagsabgeordnete und Landrat)



https://www.landkreis-vechta.de/fileadmin/dokumente/pdf/politik_und_verwaltung/LKV_Datenspiegel2019_RZ_ohne_Anschnitt.pdf

- **Number of NGOs and CSOs:**
 - o Sports: 133
 - o Music: 84

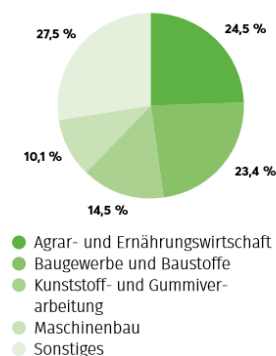
<ul style="list-style-type: none"> ○ Rifle clubs: 41 ○ Culture and local heritage: 49 ○ Education: 35 ○ Libraries: 74 ○ Politics and society: 56 ○ Economy: 11 ○ Nature/Environment protection: 16 ○ TOTAL: 499 <p>- NGOs/CSOs acting for the environment/and or climate change adaptation and mitigation:</p> <ul style="list-style-type: none"> ○ Umweltzentrum Oldenburger Muensterland, Cloppenburg (non-formal education center, environment related topics) ○ NABU (Nature and Biodiversity Conservation Union Germany), several county and city groups ○ Naturschutzzentrum Dammer Berge (Nature conservation center) ○ Haus im Moor, Goldenstedt (Information centre for moor area) ○ Hunteinformationszentrum, Goldenstedt (Information center for river area) ○ Repair Café Cloppenburg ○ Regional Centre of Expertise on Education for Sustainable Development in the Oldenburger Muensterland (RCE OM)
<p>- 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)</p>
<ul style="list-style-type: none"> - Total number of students: approx. 5700 (University of Vechta: 5119 students (10/2018) and Private University for Economics and Technology Diepholz/Vechta: 600 (2018)) - At University of Vechta: profile areas (referring to climate change adaptation and mitigation): “rural areas” (transformation processes in rural areas, regional development, interaction/collaboration with partners in the region) and “education” (important field: education for Sustainable Development): Institute of Environmental Sciences and landscape ecology: already since 1997 research regarding the impacts of climate change effects on different landscapes in this region. - Number of pupils from primary schools: 12753 (from 09/2018) (County of Cloppenburg: 7030; County of Vechta: 5723) - Number of pupils from secondary schools: 36927 (from 09/2018) (County of Cloppenburg: 19936; County of Vechta: 16991) - Institutions promoting science:

- Science Shop Vechta/Cloppenburg as part of University of Vechta
- Coordination Center for transformative research in areas of intensive agriculture
- Transfer Center Oldenburger Muensterland

- **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)

- **SMEs**
 - Number: 13,051
 - Employment: 99.4% (of total employment)
- **Large enterprises**
 - Number: 75
 - Employment: 0.6% (of total employment)
- **% of total employment:** employment rate (ratio of the employed to the working age population) in the county of Vechta: 66,1% (from 30.06.2018, <https://www.komsis.de/om-si/de/profile/SI-40501>); employment rate in the county of Cloppenburg: 61,8% (from 30.06.2018, <https://www.komsis.de/clp-si/de/profile/SI-40577>) -> TOTAL employment rate in the pilot region: 64%
- **Regional Smart Specializations (RIS3):** As part of a larger area (“Weser-Ems”) three focus areas were identified in 2013 by a “Consortium of the counties and district-free cities in the Weser-Ems region”: maritime economy, bioeconomy and energy economy (<https://www.weser-ems.eu/wissensregion/de/>).
- **Industrial sectors:** 24,5% agricultural and food industry, 23,4% construction industry, 14,5% plastics processing, 10,1% mechanical engineering (Source: OM-Standortbroschüre-2018-A5-27)

Beschäftigungsschwerpunkte im produzierenden Gewerbe



Anteil der sozialversicherungspflichtig Beschäftigten, Stand: 6/2016
Quelle: Bundesagentur für Arbeit

- **Enterprises actively involved in climate change adaptation and mitigation:**

- Wernsing Feinkost GmbH: self-commitment to become completely climate neutral until 2022 (part of the initiative “ZNU goes zero” [ZNU=Center for sustainable corporate management])
- Wiesenhof - PHW-Gruppe / Lohmann & Co. AG: certified environment and energy management systems, 100% green electricity
- Bakenhus Biofleisch GmbH: Climate change adaptation by inventing vegan products (in a butchery), company less dependent on animals, more resilient against climate change effects
- StaGoff UG: innovative process to gain energy and heat from waste -> positive effect on CO₂-cycle
- Moorgut Kartzfehn von Kameke GmbH & Co.KG: Climate change adaptation for turkey hen farming, innovative ventilation systems, research in areas stable building and technology and feeding regarding challenges due to climate change effects (especially heat)
- Mählmann Gemüsebau GmbH & Co. KG: Climate change adaptation projects regarding the water storage capacity of the soil and the resilience of vegetable crops
- Agravis Raiffeisen AG: employment of a sustainability manager, own events (discussion rounds) about the challenges regarding the climate change
- Pöppelmann GmbH & Co. KG: official “environmental declaration” published in 2018, important topic for them is saving resources, e.g. invention of flowerpots that are 100% recyclable and made of 100% recycled plastic
- Evergreen-Food GmbH: Invention of new food as a contribution for a more healthy and sustainable nutrition and agriculture, e.g. by using algae which leads to a negative CO₂ balance (algae utilize the CO₂ during growing)

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)

The climate challenges probably mostly affecting the stakeholders in the Oldenburger Muensterland are longer and more intensively occurring heat waves as well as massive rainfalls. Subsequently, it is important to find innovative solution for water management as well as for standing high temperatures over longer periods. In the Oldenburger Muensterland there is no coordinated concept developed until now, how to handle these challenges. Several cities and one of the two counties worked on climate protection plans; climate change adaptation was only mentioned very briefly. Regarding climate mitigation, the main focus is set on energy saving to reduce the CO₂-emissions.

The regional innovation system is slightly addressed by local annual “Climate protection awards” initiated by some of the cities. There is no institutional framework especially for the pilot region, but nearby at the Carl-Ossietzky University of Oldenburg there is the Network for Innovation and Entrepreneurship in Times of

Climate Change located that also supports businesses in the pilot region. Some cities have their own “round tables” as an exchange forum for stakeholders but on the level of the counties there is no coordinated exchange platform yet.

II. PROJECTS AIMED AT CLIMATE CHANGE ADAPTATION AND MITIGATION

<p>1. Projects aimed at climate change adaptation and mitigation implemented by civil society (NGOs, CSOs) <i>(please provide max. 3 cases using the template below)</i></p>
01:
<p>Title: InKoKa – Interkommunale Koordinierungsstelle Klimaanpassung (Inter-municipal coordination unit for climate change adaptation)</p>
<p>Source of funding and the budget: Funding: Federal Ministry for the Environment, Nature Conservation and Nuclear Safety and the senator for the environment, construction, transport, city of Bremen Budget/Costs: approx. 372 000€</p>
<p>Timeframe: 01.09.2013-31.08.2016</p>
<p>Main challenges and goals regarding climate change identified: Challenges:</p> <ul style="list-style-type: none"> - Coordinated development of actions (on municipal level) based on a comprehensive review regarding climate change impacts - One topic: heavy rain events <p>Goals:</p> <ul style="list-style-type: none"> - Informing, consulting, and supporting counties, cities and communities in the northwest region of Germany regarding climate change adaptation - Developing pilot projects together with pilot communities - Providing appropriate information for those being addressed - Disseminating best practice examples - Supporting the exchange between the communities
<p>Main indicators (of product/result/impact) applied (MoRRI indicators/SDGs indicators): No indicators specified</p>
<p>Main actions aimed at climate change adaptation:</p> <ul style="list-style-type: none"> - Example of a specific project: Development of a guidebook for municipal administrations and citizens to get prepared for heavy rain events - Guidebook for communities as a support for climate change adaptation - Awareness-raising and capacity building through information and network events
<p>Main actions aimed at climate change mitigation: None</p>
<p>Please indicate the institution/s responsible for the implementation and its/their main tasks</p>

<p>- Metropolitan Region Northwest: coordination of the actions, networking, information collection and adequate preparation for stakeholders</p>
<p>Please tick the type of stakeholders involved and shortly describe them</p>
<p>x local government x civil society <input type="checkbox"/> academia & education <input type="checkbox"/> business</p> <p>Short description of stakeholders: Local government: municipal administrations, Civil society: citizens, association of municipalities Niedersachsen/Bremen (Kommunalverband Niedersachsen/Bremen e.V.)</p>
<p>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): Forms and tools between partners: workshops, guideline interviews Tools used for communication: newsletter, local press (print and digital), project homepage, regional conferences, climate excursions</p>
<p>Indicate the SDGs relevant for the project: 11: Sustainable cities and communities 13: Climate Action 15: Life on land 17: Partnerships for the goals</p>
<p>Web link to the project: http://www.metropolregion-nordwest.de/region/umwelt/klimaanpassung/interkommunale-koordinierungsstelle-klimaanpassung/</p>
<p>02:</p>
<p>Title: Nachhaltig und schmackhaft (sustainable and tasty) - Umweltzentrum Oldenburger Muensterland https://www.bingo-umweltstiftung.de/nano.cms/de/PdM2016/Seite/7</p>
<p>Source of funding and the budget: Bingo Umweltstiftung (Bingo Environment Foundation) Budget: 21 500 €</p>
<p>Timeframe: 2016</p>
<p>Main challenges and goals regarding climate change identified: Challenge: Lack of awareness of climate change effects and missing information about possible actions everyone can do Goals: Strengthen regional identities and motivate people to exploit regional resources</p>
<p>Main indicators (of product/result/impact) applied (MoRRI indicators/SDGs indicators): No indicators specified</p>

<p>Main actions aimed at climate change adaptation: None</p>
<p>Main actions aimed at climate change mitigation:</p> <ul style="list-style-type: none"> - Educational trail for meadow orchard - Open Days - Training programs for teachers and employees of canteen kitchens
<p>Please indicate the institution/s responsible for the implementation and its/their main tasks The whole project was coordinated by the Centre for the Environment Oldenburger Muensterland</p>
<p>Please tick the type of stakeholders involved and shortly describe them</p> <p><input type="checkbox"/> local government <input checked="" type="checkbox"/> civil society <input checked="" type="checkbox"/> academia & education <input checked="" type="checkbox"/> business</p> <p>Short description of stakeholders: Civil society: citizens (families, children, young adults) Education: classes and teachers Business: Companies with canteens</p>
<p>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): Forms and tools of cooperation: not stated, since main responsibility laid by one organization Communication with society: Open Days, special programs for families for example (announced via homepage)</p>
<p>Indicate the SDGs relevant for the project: 11: Sustainable cities and communities 12: Responsible consumption and production 13: Climate Action 15: Life on land 17: Partnerships for the goals</p>
<p>Web link to the project: https://www.ka-stapelfeld.de/programm/philosophie/item/die-bingo-umweltstiftung-zeichnet-das-projekt-nachhaltig-und-schmackhaft-aus</p>

<p>2. Projects aimed at climate change adaptation and mitigation implemented by academia&education (research public or private scientific bodies, universities, schools, extracurricular education organisations) <i>(please provide max. 3 cases using the template below)</i></p>
<p>01:</p>
<p>Title: NIK - Network for Innovation and Entrepreneurship in Times of Climate Change</p>
<p>Source of funding and the budget: Funding: <ul style="list-style-type: none"> - Federal Ministry for the Environment, Nature Conservation and Nuclear Safety - Metropolregion Bremen-Oldenburg im Nordwesten e.V. (Association of the Metropolitan Region Bremen-Oldenburg in the northwest of Germany) - City of Oldenburg, Economic Development Office Budget: not stated</p>
<p>Timeframe: 01.07.2013 - 30.09.2016</p>
<p>Main challenges and goals regarding climate change identified: Challenges: <ul style="list-style-type: none"> - Constantly changing climate conditions - Examples: Flooding -> disruption of transportation routes to customers and suppliers; the increased incidence of heat waves -> may drive up the use of air conditioning for cooling, and thus primary energy consumption in the summer, which in turn may result in problems supplying cooling water to power plants and cause power outages Goals: <ul style="list-style-type: none"> - cooperate with regional actors in identifying innovative solutions for adapting to the consequences of climate change and supporting ideas for start-ups - expanding existing innovation centers and business incubators by adding consulting services concerning climate change and adaptation </p>
<p>Main indicators (of product/result/impact) applied (MoRRI indicators/SDGs indicators): No indicators specified</p>
<p>Main research tasks or actions aimed at climate change adaptation: <ul style="list-style-type: none"> - consultancy and workshops: NIK identifies, stimulates, and supports existing businesses and start-ups with innovative solutions for adapting to the consequences of climate change - establishment of effective cooperation with regional actors supporting innovation, start-ups, and economic development as well as political actors at the Land and regional levels - annual innovation reports for climate adaptation </p>
<p>Main research tasks or actions aimed at climate change mitigation: <ul style="list-style-type: none"> - none </p>

<p>Does the project promote RRI? If yes, please shortly describe (maximum 100 words)</p> <ul style="list-style-type: none"> - the project focuses on innovation processes, but mainly regarding climate adaptation - other aspects of RRI are not specifically stated
<p>Please indicate the institution/s responsible for the implementation and its/their main tasks</p> <ul style="list-style-type: none"> - Carl-Ossietzky Universität Oldenburg: project coordinator - Partners for developing and performing of consultancy and workshops: ecco ecology + communication Unternehmensberatung GmbH ecolo - Agentur für Ökologie und Kommunikation Bremen EFNW Express Fonds Nordwest GmbH
<p>Please tick the type of stakeholders involved and shortly describe them</p>
<p><input type="checkbox"/> local government <input type="checkbox"/> civil society <input type="checkbox"/> academia & education <input checked="" type="checkbox"/> business</p> <p>Short description of stakeholders:</p> <ul style="list-style-type: none"> - Business: companies from the region, start-ups, chambers of commerce, and trade associations
<p>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):</p> <p>Forms and tools of cooperation between partners: not specified Tools for communication: project homepage, annual reports</p>
<p>Indicate the SDGs relevant for the project:</p> <p>12: Responsible consumption and production 13: Climate Action 15: Life on land 17: Partnerships for the goals</p>
<p>Web link to the project:</p> <p>https://uol.de/wire/innovation/forschung/abgeschlossene-forschungsprojekte/nik/www.n-i-k.net</p>
<p>02:</p>
<p>Title: „Project day for climate ambassador schools“ (Waldpädagogikzentrum [forest education center] Weser-Ems)</p>
<p>Source of funding and the budget:</p> <p>State forests of Lower Saxony Association Budget not stated</p>
<p>Timeframe:</p> <p>05.03.-05.04.2019 (annual, since 2014)</p>
<p>Main challenges and goals regarding climate change identified:</p> <p>Challenge: substantial loss of trees due to drought of last summer (2018) and windstorms</p>

Goals: Planting new beech trees to create a mixed forest which is more resilient against windstorms
<p>Main indicators (of product/result/impact) applied (MoRRI indicators/SDGs indicators):</p> <ul style="list-style-type: none"> - Reforestation with 10000 new beech trees - Public engagement and capacity building -> involvement of 17 school classes
<p>Main research tasks or actions aimed at climate change adaptation:</p> <ul style="list-style-type: none"> - Changing the “forest architecture” to withstand more often occurring windstorms
<p>Main research tasks or actions aimed at climate change mitigation:</p> <ul style="list-style-type: none"> - Educating children (age: 10-13) about climate change and how to actively participate in climate action
<p>Does the project promote RRI? If yes, please shortly describe (maximum 100 words)</p> <p>No</p>
<p>Please indicate the institution/s responsible for the implementation and its/their main tasks</p> <ul style="list-style-type: none"> - Waldpädagogikzentrum Weser-Ems as coordinator and organizer - Schools: allowing classes to participate in the project
<p>Please tick the type of stakeholders involved and shortly describe them</p> <p><input type="checkbox"/> local government <input type="checkbox"/> civil society <input checked="" type="checkbox"/> academia & education <input type="checkbox"/> business</p> <p>Short description of stakeholders:</p> <ul style="list-style-type: none"> - Education: school classes (grade 6-8)
<p>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):</p> <p>Cooperation between partners: direct contact with project coordinator of the Waldpädagogikzentrum Weser-Ems and the teachers (via e-mail, telephone), two page document with the program and all relevant information for the students Communication with society: newspaper articles and information on their own homepage</p>
<p>Indicate the SDGs relevant for the project:</p> <p>13: Climate Action 15: Life on land 17: Partnerships for the goals</p>
<p>Web link to the project:</p> <p>https://www.landesforsten.de/wp-content/uploads/2019/02/homepage-projekttag-2019-1.pdf</p>

<p>3. Projects aimed at climate change adaptation and mitigation implemented by business (Corporate Social Responsibility, CSR strategies might be useful) <i>(please provide max. 3 cases using the template below)</i></p>
<p>01:</p>
<p>Enterprise Name: Chamber of Industry and Commerce and several local companies</p>
<p>Sector of activity: - (not applicable, several companies participate, from different sectors)</p>
<p>Size and number of employees: - (not applicable, several businesses participate, mostly SMEs)</p>
<p>Source of funding and the budget: Federal Environment Ministry (National climate initiative), Federal Ministry of Economics (Energy efficiency fund) Budget: not stated (nationwide project, coordinated by regional chambers of industry and commerce)</p>
<p>Timeframe: Annual, since 2010</p>
<p>Title of the project: Energie-Scouts (“energy scouts”)</p>
<p>Main challenges and goals regarding climate change identified: Challenges: - Realization of an energy transition - Awareness of energy consumption problems Goals: - Educate young persons (apprentices in the participating companies) in topics regarding “energy” - Support companies in getting engaged in energy saving projects and fulfilling their roles as responsible companies</p>
<p>Main indicators (of product/result/impact) applied (MoRRI indicators/SDGs indicators): No indicators specified</p>
<p>Main actions aimed at climate change adaptation: None</p>
<p>Main actions aimed at climate change mitigation: - Different projects: depending on company and the work of the apprentices - E.g. potential savings in the lighting, optimization of production processes or awareness-raising amongst the employees</p>
<p>Please indicate the institution/s responsible for the implementation and its/their main tasks - Chamber of Industry and Commerce, Lower Saxony: project coordinator, recruitment of participating companies, organization of capacity building workshops for the apprentices, evaluating the projects</p>

<ul style="list-style-type: none"> - Federal Environment Ministry and Federal Ministry of Economics and German Confederation of Skilled Crafts: national coordination of project, evaluating the projects for national awards - ebm-papst Mulfingen GmbH & Co. KG.: Invention of the project in 2010
<p>Please tick the type of stakeholders involved and shortly describe them</p>
<p><input type="checkbox"/> local government <input type="checkbox"/> civil society <input type="checkbox"/> academia & education <input checked="" type="checkbox"/> business</p> <p>Short description of stakeholders:</p> <ul style="list-style-type: none"> - Local companies with apprentices willing to invest money and person hours - IHK-Erfahrungsaustauschkreis Umweltschutz (group for experience exchange regarding environment protection of the Chamber of Industry and Commerce) and the EWE Vertriebs GmbH: experts in energy efficiency and saving as consultancy partners in the project
<p>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):</p> <p>Forms of cooperation: none stated</p> <p>Tools for communication: homepage of the Chamber of Industry and Commerce, individual companies report on actions, e.g. via an apprentice blog</p>
<p>Indicate the SDGs relevant for the project:</p> <p>7: Affordable and clean energy</p> <p>13: Climate Action</p> <p>17: Partnerships for the goals</p>
<p>Web links to a project or to CSR strategy:</p> <p>https://www.ihk-oldenburg.de/geschaeftsfelder/innovation-energie-umwelt/Energie/Energie-Scouts/3646890</p>
<p>02:</p>
<p>Enterprise Name: Schweinezucht Lutten GmbH & Co.KG</p>
<p>Sector of activity:</p> <ul style="list-style-type: none"> - Pig farming
<p>Size and number of employees:</p> <ul style="list-style-type: none"> - a SME company, exact number of employees not stated
<p>Source of funding and the budget:</p> <p>Northwest2050 project, Federal ministry for education and research exact budget not stated</p>
<p>Timeframe:</p> <p>2012-2014</p>
<p>Title of the project:</p> <p>Climate adapted cooling systems in pig farming</p>
<p>Main challenges and goals regarding climate change identified:</p> <p>Challenges:</p>

<ul style="list-style-type: none"> - Reduced milk production of sows due to extreme heat -> risk for animal welfare of young pigs <p>Goals:</p> <ul style="list-style-type: none"> - Increase the animal welfare by installing innovative cooling systems
<p>Main indicators (of product/result/impact) applied (MoRRI indicators/SDGs indicators):</p> <p>No indicators specified</p>
<p>Main actions aimed at climate change adaptation:</p> <ul style="list-style-type: none"> - Market research on new cooling systems in the area of sow farming with regards to climatic changes - Test runs of different cooling systems - Analysis of potentials: Check of the implementation, success control, and future developmental potentials of the sow farming within the climatic changes
<p>Main actions aimed at climate change mitigation:</p> <p>None</p>
<p>Please indicate the institution/s responsible for the implementation and its/their main tasks</p> <ul style="list-style-type: none"> - Schweinezucht Lutten GmbH & Co.KG: practical partner - Carl von Ossietzky University Oldenburg: scientific partner
<p>Please tick the type of stakeholders involved and shortly describe them</p> <p>No additional stakeholders involved</p>
<p><input type="checkbox"/> local government <input type="checkbox"/> civil society <input type="checkbox"/> academia & education <input checked="" type="checkbox"/> business</p> <p>Short description of stakeholders:</p> <ul style="list-style-type: none"> - Farmers - Veterinarian
<p>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):</p> <p>Forms of cooperation: Discussion rounds Tools for communication: regional press</p>
<p>Indicate the SDGs relevant for the project:</p> <p>13: Climate Action 17: Partnerships for the goals</p>
<p>Web links to a project or to CSR strategy:</p> <p>http://www.n-i-k.net/images/Downloads/Kuhlungssystem-Sauenhaltung.pdf</p>

<p>4. Projects aimed at climate change adaptation and mitigation implemented by local government <i>(please provide max. 3 cases using the template below)</i></p>
<p>01:</p>
<p>Title: Solar-Checks (city of Cloppenburg, county of Cloppenburg and municipality of Emstek)</p>
<p>Source of funding and the budget: Ministry for Environment, Energy and Climate Protection, Lower Saxony Budget: no number stated (funding of 100 € per individual “Solar-Check”)</p>
<p>Timeframe: Annual, 2016-2018</p>
<p>Main challenges and goals regarding climate change identified: Challenges: CO₂-emission through usage of conventional energy resources, motivating citizens to invest in renewable energy system Goal: Increase the portion of decentral solar energy in the region which is mainly for private use by informing citizens about the installation possibilities on their own house roofs</p>
<p>Main indicators (of product/result/impact) applied (MoRRI indicators/SDGs indicators): Indicators not specified</p>
<p>Main actions aimed at climate change adaptation: None</p>
<p>Main actions aimed at climate change mitigation: Cost-efficient consultation by an qualified and independent expert about the possibilities to install solar power plants on family homes</p>
<p>Please indicate the institution/s responsible for the implementation and its/their main tasks City of Cloppenburg, county of Cloppenburg and municipality of Emstek: Advertising the offer, coordination of appointments with energy consultants Climate protection and energy agency: Trainings for energy consultants, organizing the campaign</p>
<p>Please tick the type of stakeholders involved and shortly describe them</p> <p><input type="checkbox"/> local government <input checked="" type="checkbox"/> civil society <input type="checkbox"/> academia & education <input type="checkbox"/> business</p>
<p>Short description of stakeholders: Citizens: make use of the consultation offer</p>
<p>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 between partners: ? Communication with society: Flyer, online announcements, newspaper articles</p>

<p>Indicate the SDGs relevant for the project: 7: Affordable and clean energy 13: Climate Action 15: Life on land 17: Partnerships for the goals</p>
<p>Web link to the project: https://www.emstek.de/index.php/klimaschutz/projekte-news/33-klima-news/454-klimaschutz-zu-hause-kostenguenstige-solar-checks-sind-zurueck</p>
<p>02:</p>
<p>Title: „Runterschalten – Klima halten“ (Shift down – keep the climate) School project: Motivation of pupils to organise their own climate protection action</p>
<p>Source of funding and the budget: From 2010 – 2013 funded by the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety, after that no external funding; budget not specified</p>
<p>Timeframe: Annual period, since 2010</p>
<p>Main challenges and goals regarding climate change identified: Challenges: No specific challenges stated; in general: lack of awareness of climate change issues, problem to engage people in actions Goals: Motivation of school classes to work on topics regarding climate change and to develop small projects with their classes; one focus: reduction of energy consumption in schools; awareness-raising regarding climate change issues and possibilities to save energy, pupils as multipliers in their families, seeing energy saving as a natural everyday life aspect</p>
<p>Main indicators (of product/result/impact) applied (MoRRI indicators/SDGs indicators): No MoRRI or SDGs indicators specified; For measuring the success of the project, the schools have to fill out self-evaluation sheets in which they describe their activities. The project coordinators from the municipal administrations give points for the answers and regarding the level of points the classes receive different amounts of reward.</p>
<p>Main actions aimed at climate change adaptation: None</p>
<p>Main actions aimed at climate change mitigation:</p> <ul style="list-style-type: none"> - Collective “mini earth hour”: turning off all lights in a certain timeframe - Make sure to turn off lights if not needed anymore - Waste sorting - Special campaign days
<p>Please indicate the institution/s responsible for the implementation and its/their main tasks City of Cloppenburg County of Cloppenburg</p>

<p>Several municipalities in the county -> Main tasks: contact to schools, convince classes to participate, evaluate actions and distribute the rewards</p>
<p>Please tick the type of stakeholders involved and shortly describe them</p>
<p><input type="checkbox"/> local government <input type="checkbox"/> civil society <input checked="" type="checkbox"/> academia & education <input type="checkbox"/> business</p> <p>Short description of stakeholders:</p> <ul style="list-style-type: none"> - 20-27 schools (primary and secondary schools) in the county of Cloppenburg (differs every year), about 11000 pupils
<p>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):</p> <ul style="list-style-type: none"> - No specific forms of cooperation mentioned; equal cooperation between project coordinators - Tools for communication with society: local press, homepages of the municipal administrations, Facebook
<p>Indicate the SDGs relevant for the project:</p> <p>13: Climate Action 17: Partnerships for the goals</p>
<p>Web link to the project:</p> <p>https://cloppenburg.de/bau-planung/index/1.3-klimaschutzaktivitaeten-in-der-stadt.php</p>
<p>03:</p>
<p>Title: Land mit Energie (Land with energy) – Project of the Association of the Oldenburger Muensterland and the Chamber of Industry and Commerce of Lower Saxony)</p>
<p>Source of funding and the budget:</p> <ul style="list-style-type: none"> - Federal Ministry for the Environment, Nature Conservation and Nuclear Safety - Lower Saxony Ministry for Rural Areas, Nutrition, Agriculture and Consumer Protection - Fachagentur Nachwachsende Rohstoffe e.V. (Specialised agency for renewable resources) - Landesamt für Geoinformation und Landesvermessung Niedersachsen (Office for geo information and land survey of Lower-Saxony)
<p>Timeframe:</p> <p>Start: 2012 (still running)</p>
<p>Main challenges and goals regarding climate change identified:</p> <p>Challenges:</p> <ul style="list-style-type: none"> - Wrong view on role of agriculture regarding environment and climate protection - Actual realization of the energy transition <p>Goals:</p>

<ul style="list-style-type: none"> - Raising awareness for importance of energy transition - Connecting topics renewable energies, agriculture and sustainable tourism - Revealing the relevance of the agriculture for climate protection and for the energy transition - Capacity building on complex subjects regarding “Renewable energies in rural areas” with an easy to understand and entertaining way
<p>Main indicators (of product/result/impact) applied (MoRRI indicators/SDGs indicators):</p> <p>No indicators specified</p>
<p>Main actions aimed at climate change adaptation:</p> <p>None</p>
<p>Main actions aimed at climate change mitigation:</p> <ul style="list-style-type: none"> - Establishment of “energy stations” (e.g. on agricultural businesses, holiday farms which use a form of renewable energy and are willing to present that to the public) and “energy-adventure-tours” in the region Oldenburger Muensterland - Special workshops for farmers and tour guides (“energy scouts”) on how to adequately communicate with the target groups
<p>Please indicate the institution/s responsible for the implementation and its/their main tasks</p> <ul style="list-style-type: none"> - Chamber of Industry and Commerce of Lower Saxony: initiator, responsible for the professional input regarding the topics energy and agriculture, training for involved stakeholders - Association of the counties Cloppenburg and Vechta: engaging farmers and other stakeholders, dissemination of the project, coordination of the tours
<p>Please tick the type of stakeholders involved and shortly describe them</p>
<p><input type="checkbox"/> local government x <input checked="" type="checkbox"/> civil society <input type="checkbox"/> academia & education x <input type="checkbox"/> business</p> <p>Short description of stakeholders:</p> <p>Civil society: Citizens and tourists -> taken part in the tours, visiting the stations (e.g. during a bicycle tour)</p> <p>Business: Agricultural holdings, farms having forms of renewable energy plants (solar, wind, biogas, water)</p>
<p>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):</p> <p>Forms of cooperation between partners: not stated</p> <p>Tools for communication: project website, press releases, information signs at an already existing “holiday route”</p>
<p>Indicate the SDGs relevant for the project:</p> <p>7: Affordable and clean energy</p> <p>13: Climate Action</p> <p>15: Life on land</p> <p>17: Partnerships for the goals</p>

Web link to the project:

<https://www.oldenburger-muensterland.de/entdecken/land-mit-energie/>

Short summary of chosen projects(parts 1-4)

In the Oldenburger Muensterland, several projects has already been initiated regarding climate change adaptation and mitigation. Especially, the national funding initiative “KLIMZUG” (2008-2014) of the National Environment Agency led to a high increase of started projects. In northwest Germany, the joint project “Northwest 2050” was started with the motto “Perspectives for climate adapted innovation processes in the metropolitan region Bremen-Oldenburg in the northwest”. Within this joint project, many SMEs in the regions initiated climate adaptation projects (such as the Schweinezucht Lutten GmbH & Co.KG) together with a research partner from the University of Oldenburg. In the following years, fewer new projects arose, even though there are still several funding initiatives by the federal ministries as well as by the ministries of Lower Saxony.

Right now, some municipalities decided to newly employ climate protection officers and to start working on climate protection strategies. This might be a new stimulus for the region regarding climate action. Especially, the intensified networking of local actors in the field of climate action is seen as an important factor to ensure a more coordinated way of project planning and implementation.

Overall, the existing projects can mainly be classified into three categories: specific innovations for local businesses regarding climate change adaptation, reduction of energy consumption to reduce CO₂-emission and thus support climate change mitigation, and capacity building among different stakeholder groups regarding both climate change adaptation and mitigation.