

The EU LIFE integrated project Coast to Coast Climate Challenge apply partnerships to Create Systemic Innovation in climate change adaptation

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Facts

Project ID: LIFE15 IPC/DK/000006-C2C CC

Subprojects: 24

Partners: 31 and 25 supporting actors

Budget: 12 million EUR

LIFE funding: 7 million EUR

Duration: 6 years

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Increasingly severe and frequent climate change events put multiple pressures on traditional adaptation approaches. The Coast to Coast Climate Challenge project was constructed to develop and utilise innovative and systemic ways to create more durable and robust solutions.

The authors have worked together for many years to develop holistic climate change adaptation approaches within broad partnerships. This culminated in the project Coast to Coast Climate Challenge (C2C CC), supported by the EU LIFE programme. The project is integrated, meaning that it involves all relevant stakeholders, and all major climate adaptation challenges are included in the pursuit of better, more holistic and innovative solutions. A follow-up project, BioScape, also led by the Central Denmark Region, expands on the same principles that are integrated into land-use and multifunctionality.

The approach of C2C CC

Typically, the notion of innovation has not been connected to climate change adaptation (CCA). However, innovation linked to technical developments, governance and tools is essential in a world of an increasing number of climate, social and environmental emergencies. Thus, a need to radically change our approach involves dealing with the challenges through integrated partnerships and systemic thinking.

Systemic innovation as an approach and a practice results from co-creation within large partnerships and in the context of a quadruple helix, uniting knowledge society, government, companies and civil society. This is even more so when the unifying stakeholder has no formal authority in the matter of water issues.

These were the crucial principles of the EU LIFE IP project C2C CC when designed in 2015. It includes 18 Danish municipalities, the Central Denmark Region (CDR) as the lead partner, eight water utility companies, three universities and the Central Denmark EU Office—a total of 31 partners representing a quadruple helix collaboration.

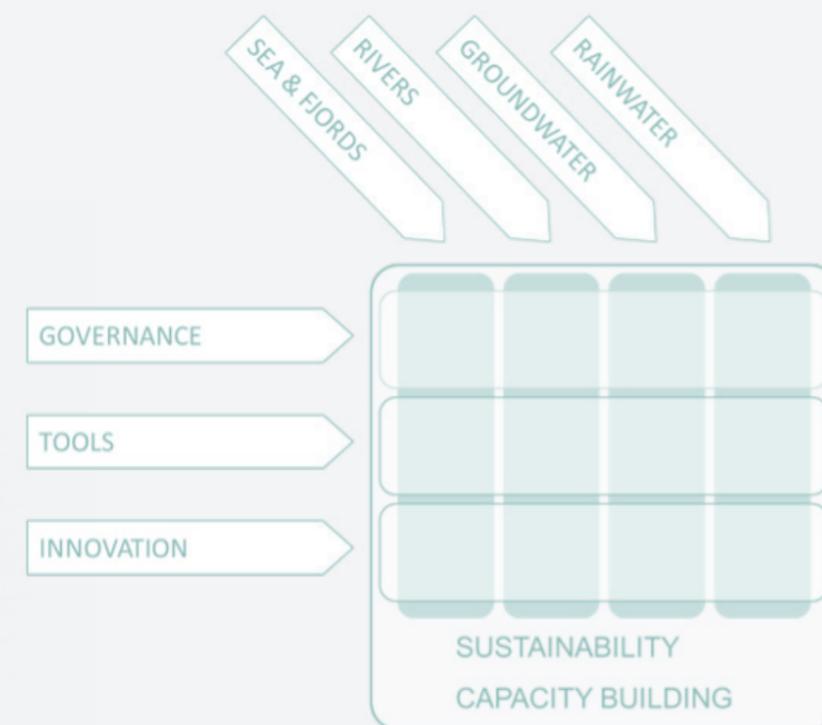


Figure 1: The matrix illustrates the scope of C2C CC and the cross-cutting activities of the 24 subprojects within the entire water circuit.

Apart from the inclusion of all relevant stakeholders, the project also contains the four major climate change risks related to water and flooding (ref. the matrix above). The approach to handling these risks was decided among the partners to secure the best possible solutions to 'water problems' in the region and find ways that may be utilised in areas such as climate mitigation and circular economy.

The systemic character of innovative solutions in C2C CC

EC president Ursula von der Leyen (2020) stated: "To use their potential to the fullest and build the Europe we all want to live in, we must adopt a systemic

approach." She added: "Europe has the potential to emerge from the current crisis to become a fairer, more prosperous, more sustainable and more resilient society." Systemic innovation involves the fundamental transformation of the systems of society. This is rarely achieved through a single organisation or sector but involves a complex interaction of public policy and reforms to legislation, changes to business cultures and practices, as well as shifts in social behaviour (Social Innovation Europe, 2012).

The work of C2C CC is mainly focused on two areas: technical innovation and behavioural changes. Often, technical innovation is more incremental than radical, whereas the changing of practices can be radical as well as incremental.

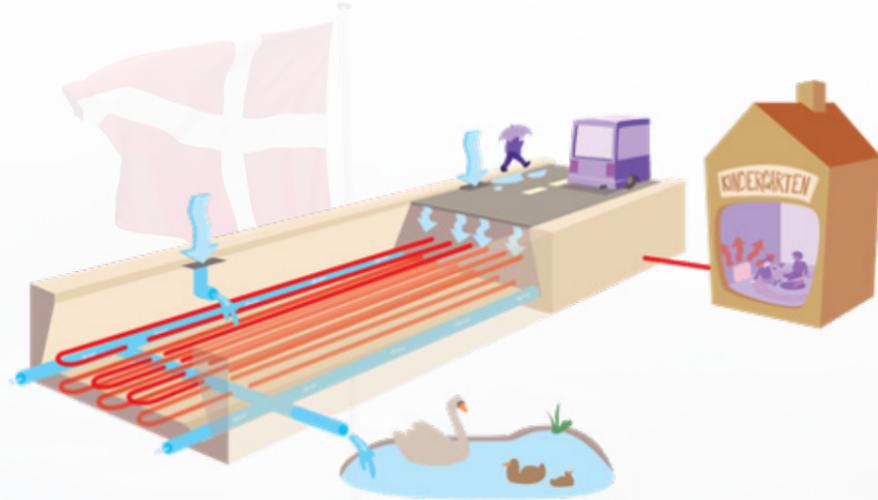


Figure 2: The Climate Road.

The C2C CC approach to creating incremental technical innovation

The C2C CC partnership and associated interested parties have been organised in a quadruple helix, fostering technical innovation applied to future challenges. This has led to several initiatives based on holistic principles, and they wish to include all and leave no one behind.

As a result of this cooperative approach, a so-called 'climate road' has been developed and demonstrated. The road unites adaptation purposes by managing cloud burst runoff in the road matrix with mitigation purposes by using the excess water for thermal energy to provide heating to a kindergarten. Furthermore, the water is rinsed before being led back to nature. This road is replicated and developed further to a thermo road which is cooling neighbouring buildings in Hornsyld.

Another example is radar reflectors developed in collaboration between C2C CC partners and local companies. The radar reflectors are used to continuously capture satellite data on local ground motions to predict future uplifting or subsiding ground elevation. The radar reflectors have been patented, and 29 radar reflectors have already been produced and placed outside the project area.

Both initiatives have created jobs and growth as a result of innovation in CCA.

Two major venues for technical innovation are the two innovation hubs born out of C2C CC—Climatorium and AquaGlobe. Both hubs support the creation of a regional cluster within water tech and climate adaptation, and both are tightly associated with the National Network for Climate Adaptation (DNNK).

The C2C CC approach to creating systemic innovation in climate adaptation

While incremental innovation is well known, systemic innovation is still fairly new in theory and practice. Therefore, the municipalities of the C2C CC—already recognised as frontrunners in CCA by CONCITO and DK2020—put a special emphasis on using the project to add to the empirical knowledge in creating systemic change related to water.

The broad partnership and the large network of the C2C CC project have facilitated the co-creation of solutions to problems of local as well as a more general character. The project serves as a platform for the exchange of knowledge and mutual professional assistance, positively impacting the work and the level of ambition.

In 2021, a survey among the partners found that the common build-up of knowledge—through courses, masterclasses and webinars organised in C2C CC—has strengthened the overall climate adaptation effort in the municipalities. Indeed, 75 per cent of the

participating municipalities experience the mutual exchange of knowledge across organisations, and the tools developed in C2C CC have supported and elevated local adaptation activities.

Novel examples of activities to support systemic change

Novel activities of C2C CC to promote systemic change include developing decision-support tools, influencing the political agenda, testing new governance approaches, and building upon novel advances. **Decision-support tools** include a screening tool for rising shallow groundwater for the whole region, several dynamic water course models for whole catchment areas and a socio-economic screening tool to evaluate damage costs compared to investment costs for heavy rains in all region municipalities. The development of these tools is based on the partners' explicit demand for improved decision-making processes. Partners have followed the tool development, giving feedback on their performances and interfaces. The tools developed in the C2C CC partnership have formed the basis for national tools provided to municipalities across the entire country.

Sufficient political attention to CCA is often missing, as awareness in mitigation is stronger than in adaptation. To support a stronger focus on adaptation at the political level, C2C CC developed a board game to be played by city council members and municipal technical directors. The game includes different flood incidents in a fictive municipality, and the politicians play with urban design and finance of different solutions with synergies to biodiversity, liveability and CO₂. The storyline of the game changes with different future scenarios, where the players are to relate the new situations with their previous decision-making in the game.

Governance and decision-making have been a reoccurring topic of the partnership, with great interest in learning new methods for stakeholder involvement. According to the evaluation carried out in 2021, capacity building activities



related to stakeholder involvement have contributed to the work in 63 per cent of the municipalities. A study trip to Nijmegen in the Netherlands introduced the partnership to the project Room for the River Waal and the Mutual Gains Approach with Connective Negotiation method. This method fits the Danish cooperative culture and the desire to co-create solutions with stakeholders to secure engagement and legitimacy.

The C2C CC partnership is an example of network governance with great learnings for the wider CCA community on the driving mechanism for systemic change. A research report is formulated with the findings of the driving mechanisms as the project enters its final year with the purpose of pushing for systemic change in other regions of Denmark and the EU. The preliminary results show that despite C2C CC being a highly complex partnership it performs well on consensus issues, which can be explained by the increasing challenges with flooding creating a sense of urgency and a motivation to join forces in finding solutions. An interesting result is the confidence of the partners in the CDR as a trusted project manager despite its vague legislative role, indicating a perception of the Region as a neutral actor. CDR has facilitated knowledge exchange within

the climate agenda since 2008, and C2C CC thus builds on these experiences and relations.

Recently added partners have increased their network by 69 per cent. It is important for the partnership that the network continues after the project, as expressed in the After-LIFE plan of the project. This plan secures a portfolio of project ideas. Similarly, a number of recommendations are gathered for the management of future CCA—among others, actions cards to support stakeholders en route.

The partnership is also co-designing dogma rules intended to inspire future holistic efforts that involve all relevant stakeholders in the creation of long-term solutions. This includes the attention to incorporate ecosystem services and nature-based solutions over traditional practices.

To foster systemic innovation, a central ambition must be to incorporate stakeholders at all levels to meet the challenges at hand holistically. Based on common tools and approaches, the C2C CC partnership is able to understand the complexities and find integrative solutions that create added value, hence avoiding uncoordinated and narrow

responses to systemic issues.

References

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PROJECT SUMMARY

Coast to Coast Climate Challenge is the first LIFE IP project on climate adaptation. The project aims to create climate-resilient cities in a climate-resilient region. We do this based on the local climate adaptation plans the municipalities made back in 2014. The efforts in the project must be made more coherent and holistic, with added value and long-term sustainability.

PROJECT PARTNERS

Central Denmark Region is the lead partner. We took the initiative to create the project in co-creation with all the relevant stakeholders. We are a total of 31 partners, including 3 universities, 18 municipalities, 8 utilities, our joint representation in Brussels and Central Denmark EU Office. The project has 25 supporting stakeholders who participate in events, etc., but are not financially involved in the project.

PROJECT LEAD PROFILE

Dorthe Selmer (Project Manager) is a trained urban planning architect and has worked with strategic development projects at all administrative levels since 1985. Dorthe has held positions from the municipal planner, over team leader, office manager and head of administration to municipal director. Dorthe creates sustainable results in equal co-creation processes, where all relevant actors are invited to collaborate.

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