Evaluation of Pilots and Result Indicators

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1. Pilot Implementation

Starting with an inventory into the issue whether pilots are implemented as planned and whether delays and substantial updates on initial plans occurred.

In Oldenburg the pilot "Traffic Rerouting System" was completed with delay in May 2021. The press release was used for reporting and communication purposes. A site visit with representatives of the city administration could take place. Additional explanatory information was provided with a video.

In Herentals the pilot concerned hydraulic calculations, different sketch designs and cost estimates for redevelopment of the city area next to the Olympiadelaan overlapping the Kleine Nete Valley. This work package has been implemented. The CATCH project enabled making different sketch designs and cost estimates on how to develop the pilot area into a green-blue corridor in the city centre. By doing this a better evaluation of the redevelopment of the city area next to the Olympiadelaan can proceed. The outcomes of the study were commissioned by the end of June 21.

In Enschede the 'Pinkeltjesplein' pilot is finished. This concerns part of the City Creek, a blue vein reintroduced in Enschede for reasons of climate change adaptation. Currently the Water Authority Vechtstromen and the municipality of Enschede work on improvement of the maintenance programme. There are no substantial changes to report.

In Vejle the Pilot 'Vejle East - A resilient district - "Boldbanen" - Playing Field' is implemented. The construction of pipes and "bassins" is completed in June 2020; recreational measures are expected to be implemented in autumn 2020, depending on tendering. Some delay was caused because the pilot was part of the overall climate adaptation project in the "East part" of the city. Hydraulic calculations and budget constraints and stress proved hindrances. The pilot was delayed because it was part of the broader project as well as politicians had some wishes for the design of the recreational measures. There are no substantial changes in the pilot.

In Zwolle the 'Community building strategy' was delivered in July 2019. The 'Climate Escape Room, Adapt or BTrapped' was delivered in June 2020. The serious game 'Garden Battle', the "Strategic monitoring action plan" and the translated version of the Adaptation strategy of Zwolle were delivered in April/May 2021. A City Debate by playing the mobile Climate Escape room was organized in September 2020. Stakeholders were also able to play. Questionnaires have been used to investigate the effect of the escape room. By shifting the budget within the project and the municipality, it became possible to build the Garden Battle instead of just a game design.

In Arvika the pilot 'Reduction of Climate Change Effects on Water Quality' consists of screen basins – phosphorous traps, and constructed wetlands. These measures will decrease the phosphorous load on Lake Kyrkviken, which will improve the Lake´s water quality. The screen basins were put in place during November 2019. The implementation was however not complete due to occurrence of ice and high water levels. The screen basins were completed during summer and autumn 2020, when the water levels were back to normal. At this time, the constructed wetlands were also put in place.

In Norfolk the start was delayed by almost 12 months while the post of Project Lead was filled. Still the pilot was on course to be completed by December 2020, with the various levels of implementation been successfully completed in turn. However, the installation of the waterbutts was delayed due to the current Covid-19 pandemic until the UK Government Restrictions were lifted. The lockdown was used an opportunity to retrain the installation teams with the new improved installation guide. The installation of the waterbutts restarted in November 2020, with a completion date of June 2021. No substantial changes have been made to date, other than look at pilot Champion Sites, such as schools, community centres and commercial units, where larger water storage system could be fitted, to reduce the overall number of water butts being installed.

2. Pilot outcomes

The second focus of this evaluation is whether the pilots reached the goals envisioned and whether there were positive collateral effects.

In Oldenburg the traffic control system was completed by the end of May 2021 and began functioning in test mode. In addition, the trench study was completed. This focuses on the importance of ditch systems for water management and emphasizes the different functions, especially on ecosystem services. The last months of the CATCH project have been used for the broad communication of the results.

In Herentals the different designs show the stakeholders the potential of redevelopment of the area. Especially the renders of the pilot area, which were made during the CATCH project, gave people a good image on how a climate resilient redevelopment can look like. Not just referring to climate robustness though also other future benefits are shown for local community and environment. Data rich decision-making became within reach and communication with stakeholders and citizens became easy and data-driven. The pilot also provided a lot of inspiration on methods and data that will help future projects. The pilot also contributed to a broad support base for next projects and strategy development.

In Enschede the goals of Pinkeltjesplein have been reached. Still the ultimate test will be in heavy rainfall and high temperature events. This will be monitored and the Pinkeltjesplein and the wider City Brook catchment are included in this new instrument to monitor heat in Enschede at 80 places. Awareness of climate change risks raised. Willingness to act on private property increased. Furthermore, the pilot received ample attention. For instance, several fieldtrips with (international) students and professors were organized.

In Vejle the pilot is seen as a success, and it will reach it goals. It is a part of a bigger project, and will be a new area for all generations. The municipality has learned how important it is to work across disciplines and organizations. A 3D-video was used to communicate how the water will be delayed in the area and it helped decision-makers and citizens alike to understand how it will work in practice.

In Zwolle the Community Building Strategy is a success. It helped to define coherent actions and activate citizens to make their neighbourhood, homes and gardens climate adaptive. After playing the Escape Room experiences and insights were discussed, and additional information was provided. The completed questionnaires show that people are gaining more understanding of the risks from climate change and what they can do to adapt to the

changing climate. For the test pilot of the Garden Battle, recruitment was done via press and social media. The response to the questionnaires provided valuable feedback for further improvement of the game for further development. The contributions of the serious game and action plan still have to be measured by monitoring.

In Arvika it was visible from the first day the screen basins were in place that they do trap the clouded water from outlets, full of suspended particles, which are phosphorous rich. When the screens are completed, and works in its full capacity, plus when the constructed wetlands and natural vegetation are in place, the effects of this pilot project are assumed to be a real success. The work on the Climate Adaptation Strategy (CAS) is in progress and expected to be finished before the end of CATCH project. The pilot has got a lot of attention in national and local media and led to a collaboration with other projects and expert panels on the topic of eutrophication and nutrients.

The Norfolk pilot has been a success to date, with solid engagement by the householders within the Norwich catchment areas. At the beginning of 2020, the project was on target to reach the goals set down in the original documentation. Most of the goals, for example, engagement with the community and awarding of the various installation and survey contractors for the water butts and Property Level Resilience measures, has been reached. Positive outcomes include the engagement with the local educational establishments, for example the University of East Anglia, who are working with the CATCH project as part of the environmental degree consultancy module. The planned social media campaign was delayed from March to August 2020, which had a positive result.

3. Lessons for future climate change adaptation projects

The third focus of this evaluation inventoried the lessons learned for future climate change adaptation projects.

In Oldenburg the key observations are that the good partnership in the CATCH project with varying but interesting pilots facilitated the key success factor: to learn from each other. While in longitudinal progress perspective, the emphasis is on that investments should be in the beginning of the funding period – so the time is not running out.

In Herentals the importance of green-blue areas in the city is and will be emphasized in future (re)developments. Doing the self-assessment gave extra arguments on the proposed redevelopment of the pilot area. Other projects will benefit from the CATCH methodology.

In Enschede the lessons learned was how important exchange with the local community is, frequent exchange was done by newsletters, also explaining reasons, aims and visualizing design. Another lesson reached is not to construct during the months with heavy rainfall if important sewage pipes need to be worked at. Because the sewer system was under construction a part of the road was flooded when heavy rainfall occurred in the summer.

In Vejle working across professional boundaries and organizations constituted a learning experience relevant for next projects. What especially is learned is that it takes time to get all involved, and that this is important, right from the start. Also, communication during the project proved crucial. Managing expectations of all involved stakeholders is important. Politicians interfered when an approved vision plan for the “Boldbanen” seemed to be reached – the politicians came with new wishes.

In Zwolle the overall Community Building Strategy proved very helpful to be in contact with local communities in a coherent way. A “serious fun factor” like the climate escape room contributed to opening the dialogue with citizens (city debate). With the other “serious fun factor” Garden Battle, many testers started playing the game. In a short time of two weeks the game and the campaign were tested. It has been noticed that serious games connect the municipality to residents easily. The residents want to play one of the games and thus learn more about how climate change impacts their own garden, street and city and what they can do themselves. The development of serious games offers great opportunities for connecting to other important themes (energy transition and smart). Working together with international CATCH partners inspired and exchange lead to learning. Serious games might be important in climate change adaptation. Huge ambition was in a pressure cooker with limited time and limited budget, which proved a challenge, but was tackled.

In Arvika the lessons focus upon climate change projects such as CATCH. The good communication with the CATCH management was helpful, for instance flexibility and support when there has been something that needed attention. The CATCH project showed such flexibility that Arvika could be a partner in the project. DST team visits could have been more anchored among the interviewees beforehand in order to get the most out of the interviews. Mostly because the language is a barrier. The reporting period in the online monitoring system has been very short. The Swedish FLC needs two months in reviewing the financial reports.

In Norfolk lessons learnt will include making sure the project work starts without significant delays. Using GDPR compliant systems with guidance will reduce the time taken to successfully implement newsletters and other connectivity with the householders. However, issues with GDPR compliance and the potential for data breaches, meant that the Newsletter system had to be overhauled and transferred over to a bespoke system. But this did open up the opportunity to upgrade the message and customise the recipients. The website applications simplified the interaction and made the collection of relevant data easier; worked especially well. The CATCH partnership meetings were a positive, where the information disseminated across the NSR region was helpful and kept focus, while the partner interaction between countries and pilot projects meant that collaboration was easier to arrange and had a higher chance of success moving forward. This included learning and best practice from the social media campaigns, which in turn will help other EU projects moving forward.

4. Contribution to climate change adaptation strategy

The fourth focus of this evaluation inventoried the lessons learned during the CATCH project and the pilot for developing a more comprehensive and inclusive climate change adaptation strategy.

In Oldenburg the pilot was a good reason to start a stakeholder process with the municipality and water boards. The CATCH project provided a frame to work within, it lead to more frequent meetings of the stakeholders. With the informal and internal climate adaptation strategy, a good working basis has been created for further water-sensitive urban development - also beyond the CATCH project.

In Herentals the pilot will be followed by making a new special policy plan (long, mid, and short term). With regard to sectors and coordination across sectors and linking to climate change strategy, the idea developed a climate-reflex (sort of integrative, transversal theme). The pilot supported to the broad support base for this. Further work is on a covenant of the mayors (declaration of intent about climate change) also including mitigation. Trajectories started to rethink the main city access road and the historical inner-city area in an inclusive and integral manner, and with similar approaches.

In Enschede the building blocks for strategy are the self-assessment that helped to reflect upon strength and weaknesses, the idea to take the city as catchment approach, and the focus on citizen participation. The need for an overall strategy is beyond argument, telling how a project fits in an overall story (strategy) is crucial.

In Vejle the CATCH project helped reflecting on an existing strategy. The focus on creating more values in the climate projects is helpful. The pilot is a showcase in the strategy of the city and they will use it in the communication about how to deal with rainwater so while creating recreational use and a lively city. Working with the tool it was realized that the ecosystem services pillar needs more attention. In the strategy, the focus on ecosystem services and blue-green solutions will increase. The pilot location is very visible, it helps to get it climate change on the agenda and to communicate about it.

In Zwolle building a climate adaptation strategy was already on the agenda of Zwolle and was developed outside the CATCH project. Within the CATCH project this strategy has been translated into English. The municipality will try to use the DST to elaborate their strategy on monitoring (within the CATCH project). The lessons learned will be input climate adaptation strategy in next version. CATCH did help to get international collaboration on the municipality's agenda.

In Arvika the whole project of CATCH and particularly the self-assessment helped a lot to raise awareness within the municipal organizations. It created awareness and helped to get it on the agenda. It contributed to include the climate adaptation strategy as a part of the organizational activities of Teknik I Väst. The condition to progress is high involvement of the staff.

In Norfolk the pilot project helped guide the Flood and Water Management department of Norfolk County Council (NCC) when asked to provide help with the Environmental Policy, which was written at the end of 2019. This policy would be used as guidance for the county of Norfolk and help the district councils with their own internal documentation moving forward. While the pilot project itself did not instigate the changes to the climate change agenda specifically, it was instrumental in helping focus certain areas of the flood and water management aspects of the Environmental Policy moving forward.

5. Climbing the WSC staircase

In the CATCH project, the Decision Support Tool (DST) team elaborated for application in NSR countries the water sensitive cities (WSC) framework. The idea behind that is that cities become aware of their position and should climb the staircase over longer period, becoming a climate robust and resilient city. Becoming aware of their own position and relative strengths and weaknesses was supported by a self-assessment tool that was developed by the DST team.

In Oldenburg short-term and long-term impacts regarding the WSC staircase are observed. In the short-term, the topic of water stress was brought more into the focus of the city of Oldenburg. A process of developing a climate adaptation strategy with the city of Oldenburg started that will bring benefits long term. The self-assessment has led to thinking about certain processes and assessing one's own strengths and weaknesses. Many different parties must be involved in the process. As a water supplier, the OOWV can only implement these processes with multiple partners and in different scales.

In Herentals the WSC framework showed the importance of green blue areas in the city and the Kleine Nete Valley. Doing the self-assessment gave extra arguments on the proposed redevelopment of the pilot area. It raised support for a more inclusive and longer-term strategy as well for new projects and participation. A strategic policy, the covenant, mentioned projects and plan for managing rainwater from an inclusive perspective show how a pilot and CATCH methodology leave footprints behind, steps climbing the WSC staircase. It helps to formulate future ambitions, raising support for a climate strategy including water stress, droughts, heat island effect and ecosystem services for a lively city. The CATCH project got interwoven with other initiatives, also with the climate youth actions.

In Enschede the observation is that first the pilot project was mainly for lowering the risk of flooding, the CATCH project and the WSC theory guided the project into also delivering positive effects on biodiversity and culture. That constitutes progress, also for other projects and the urban wide strategy, still WSC theory does not contain efficiency arguments and analysis, so critical review on costs and benefits of taking steps is needed. Though the idea ‘Short term – Climate strategy for Enschede’; ‘Midterm – Climate sensitive organisation’; ‘Long term – Climate sensitive city’ appeals and is linked to WSC theory.

In Vejle managing heavy rainfall solutions for the east part of the city develops well. For the whole city, there is work to do to become a water sensitive city. Reviewing the climate adaptation strategy in the context of the lessons learned from this project will be done. For the future, there will be many climate projects, also regarding storm surge, overloading streams and the rising groundwater and sea level rise. Catchment approaches, such as the delay of water upstream the city of Vejle, were elaborated and the focus is upon the west part of the city.

In Zwolle the WSC framework was used as one of the building blocks of inspiration for the adaptation strategy of the city. The pilot was extremely important for the development of community building, how to activate people, raise awareness, etc. So especially the community / network pillar of WSC is important for Zwolle. The goals were not literally defined in relation to the WSC, since the municipality was already building their strategy when CATCH started, but they do want the WSC “DNA” in their communities, organizations, etc., more than the vocabulary. Within the CATCH project Zwolle started to develop a

monitoring strategy in which both strategic as measurable indicators will be used. For the strategic indicators the WSC framework will be a starting point, because it shows how short-term measurements can result in a long-term chance towards a Climate Sensitive City.

In Arvika the self-assessment raised a lot of awareness and pinpointed areas of improvement for the municipal organization. Since they made the self-assessment for Arvika as a city, not all indicators were relevant for Teknik I Väst. However, the result showed that the ecosystems pillar is something that the municipality needs to work on. This knowledge has been considered when developing the climate adaptation strategy for Teknik I Väst.

For Norfolk the majority of the lesson around staircase progression relies on good communication skills and getting the message across in a manner which is easily understandable and simple. An example of this is the DST itself. On the first run through it was academically complex and contained a lot of localized jargon and acronyms. This was addressed by the next partnership meeting and was simplified according to the feedback from the previous sessions. The DST has to be useable by everybody from district council employees through to waterboards and utility companies, usually without prior knowledge of the system and the complexity of flood management itself. The self-assessment had to be simple and easy to facilitate and the newer version of the tool is significantly easier to use.

6. CATCH diamonds

The sixth focus of this evaluation aimed at providing a showcase for the best practices.

In Oldenburg a wide participation process on the topic of water-sensitive urban development was set up within the CATCH project, consisting of round table discussions and expert workshops. In these participation processes, focus topics were identified and worked through. The CATCH pilot projects traffic control and ditch systems were identified, planned and partly implemented in the workshops. This approach made it possible to achieve broad approval and acceptance for the measures. Furthermore, a basis for further cooperation beyond CATCH was established.

In Herentals the pilot facilitated assessing and integrating many aspects of urban climate change adaptation. The applied methods and tools, elaborating the cities as catchments and the potential ecosystem services delivered to the people show how in complex assignments things can be made more understandable and helps to envision what is possible. By working on different scenario's and evaluating data, rich decision making is within reach. The strength of research by design approach is convincing: Indeed, water needs space, and there are rivalry claims for that, however synergy can be reached out for.

In Enschede the multiple goals reached at and integrated in this project is impressive: lower flood risk, lower risk on groundwater damage, improved quality of living areas, improved biodiversity, enhanced playing possibilities for kids and increased awareness (Information folder, participations, newsletters).

In Vejle it has been told before – the best practice is that we made a pilot that provides solutions for managing the rainwater and at the same time creates a new area for the citizens for recreational use. This pilot showed to the municipality that if they corporate

together across sectors and disciplines, they can make projects with more value - a better place to live.

In Zwolle the Community Building Strategy worked very nicely. The best practices are the campaign (action plan), including the mobile escape room and the Garden Battle. The municipality hopes to show, with the Garden Battle, new possibilities of smart cities to address climate adaptation, for which the tool of serious gaming is particularly promising.

In Arvika the dialogue with stakeholders was very good right from the start. The permit and procurement procedure were finalized in time. These are time consuming parts of many projects, which is good to bear in mind. The pilot project has got a lot of attention from media, regional reports in TV, radio and newspapers. The CATCH meeting in Arvika contributed to attention, and an understanding for the project increased among people. Transnational learning between partners was also prominent.

In Norfolk knowledge management stood out: an example of using Best Practice, when dealing with Property Level Resilience (PLR), was simplified by using the Environment Agency (EA) framework to tender for the PLR surveyors and PLR installation companies. Plus, this was also bolstered by using the best practice of the EA when instigating a PLR project in the first instance. The EA has vast experience of water-based projects, and it would have been unwise to not seek advice from them. They are a governmental body which covers the whole of the UK and works closely with NCC. The use of their knowledge base saved both time and funding, by reducing the amount of time setting up this part of the pilot project and saved money by using an established framework with a good selection of vetted companies, with good reputation and work ethics.

7. Result indicators

In the CATCH project proposal, some goals were envisioned. With this report we provide the self-evaluations of the partners. Actually goal setting proved a dynamic process ever since CATCH started. The goals evolved over time while the practice partners and knowledge partners worked at projects and inclusive climate adaptation strategies and learned how to reach out for awareness and support in the respective cities. Content-wise the CATCH community learned that a reduction in costs of flooding events (the goal was set -20%, report in 7.1) is ambiguous. Does it refer to the pilot area, before and after the pilot, to a larger area, or to the consolidated reduction of damage caused by first order efforts (pilot), second order damage reductions (due to climate change strategy and implementation)? And what would be the longitudinal perspective? For the second goal, reduction of the flooding risk by 30% (report in 7.2) identical reasoning leads to equally ambiguous outcomes. Regarding the third goal (report in 7.3) straightforward answers with some uncertainties are within reach. Though in general the goals have been reached by second order impacts, the challenge of attributing without doubt the gains only to CATCH tools and lessons learned due to CATCH in causal terms proved a challenge. There are many parallel and simultaneous processes going on and interacting with CATCH participants.

7.1 The 20% reduction of costs from flood events

In Oldenburg the results of the self-assessment and the exchange with the project partners will certainly help to work on one's own weaknesses and to reduce the damage caused by extreme weather events in the future. However, an exact assessment cannot be made at present. This requires a discussion with the relevant expert colleagues. However, this is currently not possible because of corona. One might present and accept the argument that the pilot by definition will reduce some flood damage categories by 20%, however the second order impacts might be much larger.

In Herentals an additional buffer capacity of 39.000 m³ will be present to temporally store water from the river and therefor the valley will be more climate proof in the future. It is however not possible to provide an exact percentage since it has to be seen on a valley scale. At the moment Herentals is well protected from river flooding by upstream storage areas and high dikes. In addition, the implementation of the pilot will create an area for water storage of pluvial water (1.500 m³) by revaluing an old watercourse. Costs of fluvial and pluvial flood events will reduce by implementing the project in the future.

In Enschede it is likely that the CATCH project played a role, however modelling sewage and sewage capacity and elaborating cost-effective options to save money was not part of the CATCH pilot. The kind of solutions chosen line up to and overlap with CATCH principles. The WSC theory and the CATCH project broadened the focus beyond the flooding risk and flooding events. So, the benefit is in increased awareness of vulnerability for the people and the neighbourhood. Though second order effects will be considerable and the City Creek itself is especially designed to reduce flood risks and damage, Pinkeltjesplein is only an element in a basin.

In Vejle flood risk is reduced considerable in the area, however hydraulic modelling was not really part of CATCH, shaping the details of the pilot and construction was. In Vejle the pilot project is a part of a bigger climate project, the whole project is dimensioned to deal with a 100-year event in 2100. It will give a high reduction of costs from flood events. It is very difficult to give an exact percentage, however it will be substantial. Though there already was a climate adaptation strategy when the project started, it is difficult to say by what percentage this project contributes to reducing costs from flood events. But if this climate adaptation strategy would not exist, it would be a reasonable assumption that we have reduced considerably more than 20%.

In Zwolle the tool and lessons learnt will/could help to build the city's strategy. A percentage is hard to give at this moment, but of course there is confidence that implementing the strategy reduces costs from flood events. Within the CATCH project the municipality has focused on the awareness and actions of the citizens. It is hard to measure the effects of awareness on the reduction of probability of floods. Also, the overall importance of second order effects should be taken into account.

In Arvika the work on climate adaptation strategy will point out areas of weaknesses, e.g. due to flood events, and give examples of measures. It is believed that this can create a

reduction in costs from flood events. A percentage is difficult to estimate at this point, since the strategy work is not finished.

In Norfolk the use of PLR survey and flood risk assessment has made it possible to put a value on the cost of installing equipment and flood reduction products, for example automatic flood doors and non-return valves, on a household basis. Based a small pool of surveys, it was possible to show that installations of approximately £7,500 flood reduction products could avert £10,000 worth of insured risk flood damage. This is a one-off cost, which should protect the house and reduce the risk significantly in the future.

7.2 The 30% reduction of probability of flooding events.

In Oldenburg the results of the self-assessment and the exchange with the project partners will certainly help to work on one's own weaknesses and to reduce the probability of flood events in the future. However, an exact assessment cannot be made at present. This requires a discussion with the relevant expert colleagues. However, this is currently not possible because of Covid-19.

In Herentals by testing the tool and doing the self-assessment the city created more awareness on climate change adaptation and climate change adaptation strategy. Since the pilot project is not yet implemented an effective reduction of probability of flooding is not yet happening. Nevertheless, this created awareness will make sure that in the future climate change adaptation will be an automatic reflex in all kinds of infrastructure projects and the probability of flood events will therefore reduce.

In Enschede it is likely that the CATCH project played a role, however modelling sewage and sewage capacity and elaborating cost-effective options to save money was not really part of CATCH, so it is difficult to claim causality. The kind of solutions chosen line up to and overlap with CATCH principles. The monitoring and test by heavy rainfall will be a test of the whole system, in which Pinkeltjesplein is a part of. Although monitoring the specific result of only the Pinkeltjesplein, it is one of the building blocks of the new climate proof system and therefore, it is likely that the flood risk reduces considerably.

In Vejle the conclusion is that a reduction in the probability of flood events has been reached, but it is very difficult to give an exact percentage at this stage.

In Zwolle a percentage is hard to give at this moment, but there is certainly confidence that implementing the strategy reduces probability of flood events. Within the CATCH project the municipality has focused on the awareness and actions of the citizens. It is hard to measure the effects of awareness on the reduction of probability of floods.

In Arvika it is believed that this creates a reduction of probability of flooding. The main measure regarding flood events for Arvika city is a flood barrier that is in place since June 2020 to protect the city from flooding. A percentage is difficult to estimate at this point, since the strategy work is not finished.

In Norfolk the CATCH pilot is designed around the reduction of surface water flooding across the Norwich Catchments areas. The actual target figure is a reduction of 400,000 litres of water from the surface water drainage system during an extreme weather event or cloud burst. This is part of the overall strategy being run by Anglian Water and NCC across the Norwich area. The CATCH tools will aid this moving forward.

7.3 The raised awareness among 1000 citizens to accelerate climate adaptation actions

In Oldenburg newspaper articles already draw attention to the subject and the pilot. Colleagues also give lectures in citizens' initiatives directly on the subject of heavy rain. Awareness raising can thus already be promoted. The implementation of the pilot project, the development of the climate adaptation strategy and the publication of story maps will further raise awareness among citizens. How many inhabitants will be reached cannot yet be assessed with certainty.

In Herentals during two public events in 2018 on the redevelopment of the pilot area the CATCH project based upon the WSC theory was explained to the citizens and local stakeholders of the city. Furthermore, a public presentation on climate change adaptivity of the Kleine Nete Valley was given during an anniversary event of the environmental council of Herentals in 2020. Next to examples of climate change adaptation river projects, the presentation contained a chapter on CATCH and how to create a climate resilient river valley. With the above events at least 250 citizens were reached and informed. In June 2021 a big communication campaign on the outcomes of the designs of the CATCH pilot area was organized. It consisted of organized walks and a webinar for citizens and a press event with the mayor and the deputy of the Province.

In Enschede there is no doubt that more than 1% of the citizens is reached, and that is already more than 1600 citizens. The CATCH project also initiated contacts, projects and outreach to the public. With this project, the citizens we will get more awareness.

In Vejle the pilot and the strategy will reach many citizens to raise awareness and the pilot will be a real example, because the municipality will use it in the story of the water and waterways in the city. The municipality will inform the citizens via newspapers, press, exhibitions, signs, meetings and movies. As a result, it is expected that the awareness of a minimum of 500 citizens in the area in the eastern part of the city and well above 1000 citizens for the whole city will be raised.

In Zwolle, approximately 112 residents played the escape room during the city debate event. The escape room experience already raised awareness of 13 students, their coaches of Windesheim University, the game company and testers (20-40 persons). The escape room will be played at other events, also through the Climate Campus network. Considering all this, the municipality expects to raise awareness of 1000 citizens in 2021. For the pilot campaign of the Garden Battle advertising via social media was used, some figures: Ad Impressions: 103,363, Range (unique people): 20,483; Clicks to the website: 1.102; 171 players. Press releases have appeared in local media. It is expected to raise awareness of over 50.000 citizens in 2021.

In Arvika the pilot project has achieved attention in different media (national and local media). There have been more than 1000 citizens informed. The strategy work aims to reach Teknik I Väst staff, which are about 150 people. The upcoming information events are estimated to reach more than 1000 citizens via media communication.

To date the NCC pilot project has informed more than 30,000 citizens across Norfolk, with an additional 42,587 individuals across the UK via social media. Please note that approximately 50% of this number live in Norwich and have already received CATCH leaflets via the letterbox. However, an additional 8,618 individuals clicked on the advert to go through to the CATCH website to learn more about the project, 4,498 of them actively joining the project and requesting a waterbutt to be installed (Further analysis: 2,304 were in the Norwich catchment). This has led to approximately 7,000 signed up to the project, with 3,384 actually eligible to have a waterbutt installed.