Climate Change Adaptation in Enschede and Zwolle

C A T C H + WP3 Final Report

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LIST OF ABBREVIATIONS

DPRA	Delta Plan Spatial Adaptation (Delta Plan Ruimtelijke Adaptatie)
CATCH	water-sensitive Cities: the Answer To CHallenges of extreme weather events
SAT	Self-Assessment-Tool
GAT	Governance Assessment Tool

1. INTRODUCTION

Sea level rise and an increase in extreme weather events due to climate change have prompted the Dutch National Government to address these issues within the Delta Programme and especially the Delta Plan Spatial Adaptation (DPRA[1]). The goal of the DPRA is to make the Netherlands climate-proof by 2050. To achieve this goal, all government entities, including municipalities, should identify which objects and functions in urban and rural areas are vulnerable to extreme weather events and how to deal with the risks that result from a changing climate. To this end, the DPRA lays out six steps. The first two of these – mapping out vulnerabilities as well as conducting a risk dialogue and drawing up an adaptation strategy – are relevant for the CATCH+ project.

To map their vulnerabilities all municipalities should conduct (at least) a "stress test light"[2]. This involves that municipalities identify vulnerable locations using the climate effect atlas[3] (step 1a) as well as local and regional knowledge (step 1b). Thus, the stress test focusses on the physical environment, but does not provide any insight into other "non-physical" factors such as the municipality's capacity to take adaptation action. In the next step, municipalities should translate the analysis of vulnerabilities into a strategy and concrete actions. However, the questions of which risks are the most pressing, where government takes action and where private actors are responsible, or which risks are acceptable, are normative and need to be answered by civil society as a whole for their immediate spheres, i.e. their municipality. This makes a dialogue necessary. Therefore, step 2 of the DPRA includes conducting a risk dialogue with relevant stakeholders in addition to formulating an adaptation strategy. While many municipalities understand the need to conduct a risk dialogue, they are struggling with the implementation of such risk dialogues in the absence of directives as clear-cut as those for the stress test.

The CATCH+ project aims at supporting municipalities making the link from stress test to risk dialogue. It intends to achieve this by assessing the use of the assessment tools developed in the EU INTERREG project *water-sensitive Cities: the Answer To CHallenges of extreme weather events* (CATCH)[4], as well as to further adapt them to this context where necessary and thus to help municipalities in the Province of Overijssel to accelerate their adaptation to climate change. The idea behind using the tools for the DPRA is that moving from analyzing the physical vulnerabilities to collectively making a normative decision about how to address risks is difficult for most (especially smaller) municipalities. The tools developed for CATCH can help municipalities with this step. To this end, the CATCH+ project, a spin-off of CATCH, consists of a three-step approach. In the first step, we looked into the municipalities Enschede and Zwolle, which are partners in the CATCH project as well. We compared their adaptation approaches and assessed their use of the self-assessment tool (SAT),

[1] Delta Plan Ruimtelijke Adaptatie (english.deltacommissaris.nl/delta-programme/regions-and-generic-topics/spatial-adaptation)
[2] In older versions of the guidance these aspects are mentioned, see: https://www.deltares.nl/app/uploads/2014/10/Handreiking_Stresstest_1.pdf 9
[3] www.klimaateffectatlas.nl/
[4] https://northsearegion.eu/catch/

the first tool developed within CATCH. We determined possible contributions of the SAT towards supporting other municipalities with their risk dialogues. This is the final report about the first phase of the CATCH+ project. In parallel, we started adapting the Governance Assessment Tool (GAT), the second CATCH tool, to the Dutch context of the DPRA risk dialogue. Furthermore, the project facilitated a lively exchange between the employees from both municipalities, who are engaged with the topic of climate change adaptation. This has also provided an opportunity for them to reflect on strong and weak aspects in their approach, learn about experiences with different methods and expand their regional cooperation. We build on these insights for the next steps of the CATCH+ project. The next step is testing the adapted tools in three municipalities in the four DPRA work regions that are active in Overijssel. The final step is to translate the insights into materials and courses that will help other municipalities in Overijssel and beyond as well.

The second chapter of the report provides an overview of the process and a reflection of the activities that took place. In chapter three, a compilation of the achieved results and outputs is presented. In chapter four, concluding remarks are provided based on the results. The report closes with a list of supplementary reports and studies that were produced within the scope of the first phase of CATCH+.

2. PROCESS

As a part of the CATCH+ project, we conducted one workshop in Enschede and one in Zwolle, which both included a field visit to adaptation projects in the cities. The first workshop took place in Enschede in January 2019 and the second one in Zwolle in March 2019. We discussed the differences in approach to climate change adaptation, to the risk dialogues, to stakeholder engagement, participation and participatory methods with both municipalities, the Province of Overijssel and the Waterschap Vechtstromen. We also touched upon the use of the SAT for the risk dialogue.

Regarding the SAT, Sophie Groeneveld, a master student from the University of Twente, assessed its use and usefulness for the risk dialogues as part of her master thesis and collected the feedback of each municipality through interviews. She also used secondary data from the interviews conducted as part of the CATCH project, the SAT scores given by the municipalities, and their feedback during the development of the SAT. The UT team for CATCH+ and Sophie Groeneveld translated the SAT into Dutch, and modified it from its original version to fit the Dutch context better. Representatives from all partners gave valuable input for this translation, especially to ensure that the language was clear and accessible for practitioners. Through the application in the next phase of the project, the SAT is now being adapted further. The GAT was also translated by members of the UT team and exists in a draft version. Further steps with the adjustment of this tool will be decided upon in the coming months. The approach enabled us to address the contents of the work package while ensuring that all participants benefited from the encounters. With the exception of the application of the GAT, which had not been implemented in the municipalities yet, we completed the first phase of the project. The results and outputs of the work package are described in the next section.

3. RESULTS AND OUTPUTS

We adapted the initially planned activities to the needs of the municipalities and the actual progress of the CATCH project. Consequently, we produced slightly different outputs than were originally envisaged. Since we have conducted two workshops, and we were faster than planned with the assessment and adjustment of the tools, there are now three reports including this final report. Additionally, two students from the UT completed their theses within the scope of this project phase. The first, Master student Sophie Groeneveld was already mentioned and the second, Bachelor student Susan Groenia, did her final assignment with the municipality of Enschede. Both theses provided results for this report and links to the full theses can be found in the appendix. Groeneveld (2019) analysed public participation in climate change adaptation processes in Enschede and Zwolle as well as the use of the CATCH SAT and its usefulness for these processes. With regard to participation, she examined the city-level adaptation process and additionally focussed on one example of project-level participation in each city pertaining to climate change adaptation. Groenia (2019) investigated the adaptation processes in both cities. As a first step, she analysed how the cities arrived at the locations they defined as 'at risk'. As a second step, she examined how they addressed one such location defined as 'at risk'. Lastly, she identified stakeholder engagement and participation in both steps. Her results have been verified at the first workshop in Enschede, where she presented them to employees from both municipalities and a number of other stakeholders.

The detailed findings of the workshops can be found in the respective reports in the appendix. Therefore, these will not be repeated here. Rather we will briefly summarize the overall results and reflect on the adaptation of the tools as well as how they might benefit other municipalities with their risk dialogues.

THE DPRA, THE RISK DIALOGUE AND PARTICIPATION

As mentioned above, all Dutch municipalities are required to conduct certain steps towards formulating an adaptation strategy as part of the DPRA. From talking to different municipalities and attending the Ninth Delta Congress in Zwolle in November 2018, we learned that many municipalities are struggling with moving from the analysis of their physical environment to a dialogue with their stakeholders about what risks this analysis shows and how to handle those risks. As a first part of the first phase of CATCH+, we looked at:

- the approaches to the risk dialogues in the municipalities of Enschede and Zwolle,
- how they addressed those risks in one specific location, and
- the way they engaged stakeholders during this process.

We found several differences: the adaptation problem and its urgency, the starting point of the process, the output of the stress tests, the risk dialogue at the city level, the approach at the project level, the instruments for spatial adaptation, the budget for adaptation, as well as public participation. The report of the first workshop and excursion provides an overview and detailed

description. The second report contains more details about the stakeholder participation in both municipalities, including their goals for participation and the methods they used. Two aspects are highlighted in the next few paragraphs.

First, while the municipality of Zwolle conducted stress tests for flooding, heat and drought, and engaged divers groups of stakeholders during their process of formulating a strategy, they do not call those interactions a “risk dialogue”. The municipality of Enschede, on the other hand, assessed its risks for flooding, and conducted a dialogue with stakeholders, especially the city council, on how to handle these flood risks. Then, they created a 10-year action plan, which they have started implementing. Both municipalities started with their respective processes before the inception of the DPRA and followed different timelines (see figure below and Groenia (2019) for details).

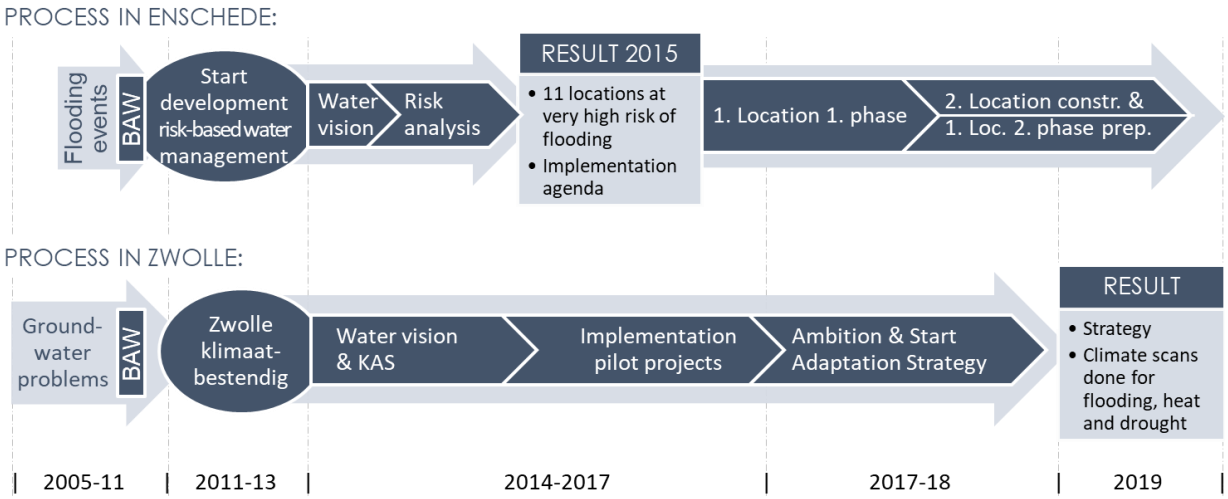

Figure 1: Adaptation Processes in Enschede and Zwolle (Source: Adapted from Werkrapport 1, bijlage, p.16-17.)

The second aspect is their approach to stakeholder participation. The municipality of Zwolle set as its goal for participation to raise awareness about the need for climate change adaptation among all stakeholders so that they will start taking action themselves. In contrast, the municipality of Enschede wanted to raise awareness for the results of the stress test, but ultimately they wanted to come to concrete solutions and actions for the municipality to take. Both municipalities attributed these differences to two aspects.

Firstly, the municipalities experienced varying degrees of urgency caused by flooding. On the one hand, Enschede experienced two incidents of extreme rainfall that caused extensive flooding in two consecutive years (2010 and 2011). This included flooded tunnels, which blocked several major traffic arteries. In turn, this led to intense public pressure to address these issues fast. On the other hand, Zwolle faces flood risk from all directions due to its location in the delta of the Ijssel River, but there was no pressing flooding event during the initial period of the climate change adaptation process. The flooding problem in Zwolle is constant, but at the moment it is seen as more of a ‘nuisance’ than a big event.

Secondly, the municipalities appeared to have a different understanding of the extent of their duty to take care of their residents as opposed to residents being supported in taking care of themselves. The differences in goals for participation are reflected in the participatory activities each municipality has undertaken. These are depicted in Figure 2 for the municipality of Enschede and Figure 3 for the municipality of Zwolle in relation to the process described above.

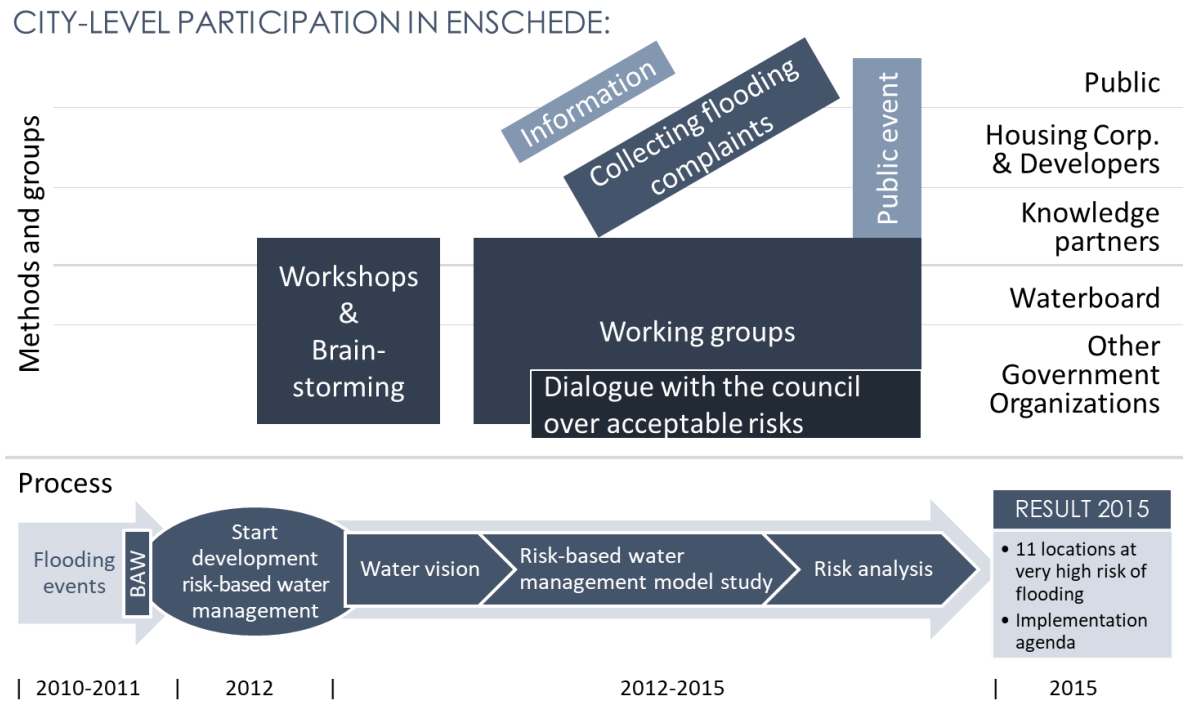

Figure 2: City-level Participation in Enschede (Source: own graphic)

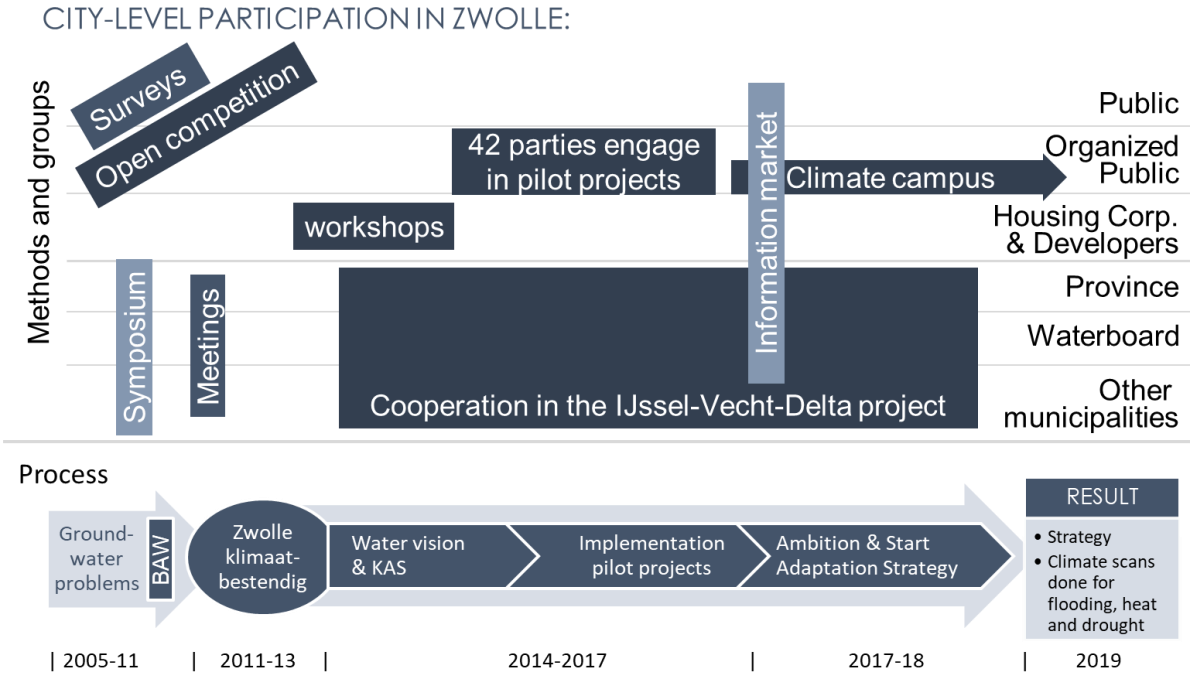

Figure 3: City-level Participation in Zwolle (Source: own graphic)

It has to be noted that the difference in sheer number of engagements needs to be seen in the context of the differing periods for the city-level climate change adaptation process of thirteen years in Zwolle as opposed to five years in Enschede.

THE SELF-ASSESSMENT-TOOL

The SAT, unlike the stress test, assesses aspects with regard to the municipal organization such as adaptation actions taken, relevant stakeholders, vulnerable groups, etc. As mentioned above, Sophie Groeneveld assessed both the use of the SAT in Enschede and Zwolle, as well as its usefulness for other municipalities. The CATCH SAT was derived from the Water Sensitive Cities concept that has been developed for the Australian context[5]. Together with the CATCH practice partners it was adapted to the North Sea context. CATCH+ has now translated the SAT into Dutch and further adapted it for use as part of the DPRA process. The latest version can be found in the Annex. As the previous section highlighted, both municipalities had been dealing with the topic of climate change adaptation for several years before they used the SAT. Therefore, the respondents from municipalities Enschede and Zwolle expressed in the interviews that the SAT had limited additional value for them since they were already aware of most of the aspects it covered. Nevertheless, they did mention that smaller municipalities that were only now starting out with adaptation might indeed find the SAT helpful as it provided an overview of strengths and weaknesses of one's own municipality. Moreover, we have used some of the questions as presentation starters when engaging smaller municipalities in Overijssel. During these presentations, it has become apparent that for smaller municipalities, which are at the beginning of their adaptation process, the SAT does provide valuable hints to relevant topics. Thus, we conclude that addressing these topics through answering the SAT questions will provide smaller municipalities with a better basis to start their risk dialogue.

THE GOVERNANCE-ASSESSMENT-TOOL

Whereas the SAT provides a municipality with insights into their organizational strengths and weaknesses as well as an overview of their experience with adaptation action, the GAT provides a better understanding of the municipality's own organization in relation to other government levels, its networks, relevant stakeholders and their motivations, among others. This is necessary and important to investigate, because many different departments and branches of the municipal government, as well as various external stakeholders, will likely be involved in any adaptation action that is going to be taken. Additionally, the GAT provides insights into aspects such as where the responsibilities lie, who has access to the necessary resources and which actors need to be brought to the table to reach any meaningful results. The GAT was developed for the context of water governance and has been applied in a diverse range of contexts and on a number of different topics.[6] The CATCH version of GAT was not used by the municipalities Enschede and Zwolle yet. However, its adapted Dutch version will be used in three smaller municipalities as part of CATCH+. The draft version can be found in the Annex to this report.

[5] For more information see Wong and Brown (2009), as well as Brown, Rogers and Werbeloff (2016)
[6] For more information see Bressers et al. (2013), as well as Bressers et al. (2016)

4. CONCLUSIONS

The objective of this phase of the CATCH+ project was to assess the added value of relevant CATCH tools, i.e., the SAT and GAT, for accelerating and improving the implementation of the DPRA (especially risk dialogues) in the cities of Enschede and Zwolle. As Groenia (2019) shows, both cities have been active with climate change adaptation for several years. Additionally, the original CATCH tools were not developed for the DPRA process. This makes it difficult to assess any benefit the tools might have for the DPRA process. Since both municipalities were frontrunners, their previous experiences helped to shape the DPRA process, rather than the other way around. Additionally, neither city conducted a 'risk dialogue' after the use of the CATCH tools, further limiting any direct conclusions from their experience with them.

As municipalities that have started adapting to climate change more recently are likely to follow the steps laid out in the DPRA much more closely, they are more likely to benefit from the CATCH tools. Moreover, both tools are being adjusted to address the specific context of the Dutch DPRA, rather than the broader context of the North Sea Region, which is the focus of the CATCH project and the original tools. Consequently, we can only conclude on the usefulness of these tools once they have been used by the three smaller municipalities, i.e., Deventer, Haaksbergen and Borger-Odoorn, for their risk dialogues. This is foreseen as a next step in the CATCH+ project.

With regard to the use of the SAT, it needs to be stated that both Enschede and Zwolle, alongside five other practice partners of the CATCH project, were involved in tailoring the tool to the political, social, ecological and climatic context of the North Sea Region. This played a role in their perception of the usefulness of the tool. Both cities found it difficult to use due to a lack of clarity in the language and indicators. The SAT in CATCH was developed in English and adapted from the Australian context. Since the municipalities were asked to give feedback on the indicators in the process of modifying the tool, this remark was not surprising. Nevertheless, the need to adapt the tools further to the Dutch context is one of the main conclusions from the use of the SAT in Enschede and Zwolle. As mentioned above, both cities are already quite advanced with their climate change adaptation efforts. This meant that while they were able to glean some insights about strengths and weaknesses and one topic they had not considered before, they were of the opinion that the SAT could be more useful for municipalities that are only now starting out with climate change adaptation. As previously stated the GAT had not been applied in either city at the time the activities for this phase of the CATCH+ project took place and could therefore not be evaluated.

In conclusion, we expect that the CATCH tools are especially useful for accelerating the DPRA process in the smaller municipalities that have only recently begun to tackle climate change adaptation.

ANNEX

RESOURCES

Bressers, Hans, Boer, Cheryl de, Lordkipanidze, Maia, Özerol, Gül, Vinke-de Kruijf, Joanne, Furusho, Carina, Lajeuness, Isabelle, Larrue, Corinne, Ramos, Maria-Helena, Kampa, Eleftheria, Stein, Ulf, Tröltzsch, Jenny, Vidaurre, Rodrigo, Browne, Alison, 2013: Water Governance Assessment Tool. With an Elaboration for Drought Resilience. www.ecologic.eu/sites/files/publication/2013/Governance-Assessment-Tool-DROP-2013.pdf

Bressers, Hans; Bressers, Nanny; Larrue, Corinne (Ed.) 2016: Governance for drought resilience. DOI: 10.1007/978-3-319-29671-5

Brown, Rebekah; Rogers, Briony C.; Werbeloff, Lara, 2016: Moving toward Water Sensitive Cities. A guidance manual for strategists and policy makers. Cities as Water Supply Catchments – Society and Institutions (Project A4.1), watersensitivecities.org.au/wp-content/uploads/2016/05/TMR_A4-1_MovingTowardWSC.pdf

CATCH 2019. northsearegion.eu/catch/

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Deltares 2018. www.deltares.nl/app/uploads/2014/10/Handreiking_Stresstest_1.pdf 9 last access Mar 2019

Klimaateffectatlas 2019. www.klimaateffectatlas.nl

Wong, T. H. F., Brown, R. R., 2009: The water sensitive city. Principles for practice. Water science and technology: a journal of the International Association on Water Pollution Research. DOI: 10.2166/wst.2009.436

LINK TO THE MASTER THESIS OF SOPHIE GROENEVELD

Groeneveld, S.F.F. (2019) *Resilience and participation in climate change adaptation: an analysis of the cities of Enschede and Zwolle.* Universiteit Twente Theses Repository access here: https://essay.utwente.nl/77723/

LINK TO THE BACHELOR THESIS OF SUSAN GROENIA

Groenia, S. (2019) *Ruimtelijke Klimaatadaptatie op lokaal niveau: Een vergelijkende studie tussen Enschede en Zwolle.* Universiteit Twente Theses Repository access here: https://essay.utwente.nl/77501/

SELF-ASSESSMENT TOOL (SAT)

GOVERNANCE ASSESSMENT TOOL (GAT)

WERKRAPPORT 1 WERKPAKKET 3 – WERKBEZOEK IN ENSCHEDE

WERKRAPPORT 2 WERKPAKKET 3 – WERKBEZOEK IN ZWOLLE