Political reflection

EPA1361 Model-based Decision-making

Group2

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„The value of global modelling has been severely restricted by poor appreciation of the constraints under which governments and politicians operate. Equally, the value of governments and politicians has been severely restricted by largely ignoring the very real but less immediate problems tackled by modellers." — Eduard Pestel (1982)

Role of analysts for Rijkswaterstaat

Our role, as analysts , is to conduct a proper analysis that would serve Rijkswaterstaat well in the political decision-making process. Our interest is to sustain financial compensation from the services that we provide to Rijkswaterstaat. Moreover, client satisfaction with the quality of our work is non-less important since it will directly impact on our reputation and ability to perform business in this segment. Additionally, the mandate states that we can be asked by our client to become more involved in the political process, as long as it does not violate our ethical code. In our practical analysis, a simulation model was used which allowed us to evaluate outcomes of policies in terms of damage, number of deaths and investment costs. The outcomes of the model were generated based on the selected problem definition that has been assigned by the client.

According to the mandate of our group we did not have a political agenda, which makes us a non-decision-making stakeholder. However, our client Rijkswaterstaat that facilitated the debate, operated with the data that was gathered, analyzed, and provided by us. We made it clear to the client that they can count on our accessibility and involvement in the process. For this we have established an efficient communication method that has been adapted.

Tension and challenges

In this section, we will reflect on the tensions and challenges that occurred when performing our role as analysts for Rijkswaterstaat. Four main challenges have been identified and will be described in this section.

Unclear problem formulation by the client. As it often happens in a real-life setup, the client does not always know what it wants. This was the case in our setup. Because it took time for Rijkswaterstaat to have a complete situation overview, the initial tasks that were assigned to us lacked important details. This limited our ability to execute a proper analysis. As one example, to run a model and express the outcomes in the desired impact categories, one out of five problem formulations had to be selected. Although we have advised Rijkswaterstaat to collectively agree on the problem formulation beforehand, the client decided to select a problem formulation without consulting with either of the analyst group. As a result, the initially selected problem formulation has been dropped and the analysis that has been performed based on it has become useless. The time was lost, and the analysis had to be performed again when the final problem formulation had been agreed on.

Interpretation of the results. One of the impact categories in the model was the 'Death rate'. However, this formulation has been confusing to the client and most of the participants of the debate. During the final debate process, it became evident that the interpretation of this impact category is unclear for our client. There were two important misconceptions regarding this impact category. First, the result of this category has been interpreted by Rijkswaterstaat as an actual number of deaths per thousand of people per region per year. This almost turned the debate in the unfavorable direction, with many parties willing to withdraw their support after projecting high numbers of deaths. Especially dike ring 3, has immediately expressed that such a policy impact would be unacceptable. Secondly, two numbers were reported to Rijkswaterstaat for this impact category, an average and a maximum number of deaths. The focus on the maximum number rather than on the average, has put our client and us in a disadvantageous position in the debate process.

Client relation and communication. As it turned out the group that represented our client did not have previous connections with most of the analyst group participants. This has resulted in difficulties establishing communication channels with the client. Moreover, coincidently one member from the second analyst group has been a childhood friend with one of the Rijkswaterstaat representatives. This surprising factor has put extra pressure on our group, since we anticipated a conflict of interest might occur. In the real-world situation, that could have been a network advantage, as it feels far safer to do business with the party that you have a long-lasting established connection with. So additional tension developed, since we had to improve the level of trust with the client, to fairly compete with the second analyst group.

Implemented measures to cope with tensions and challenges

In this section we address the strategy to mitigate the impacts of the tensions and challenges that we encountered during the whole process. Each sub-chapter relates to a tension or challenge that has been outlined in the previous section.

Strategy 1: Developing problem perception with the client. One might expect that if you are hired to help solve a problem, the problem is well-understood by the hiring party, in our case Rijkswaterstaat. However, this is often not the case. The problem perception is shaped by an actor's personal characteristics and therefore often not a completely accurate reflection of the policy problem at hand (Tversky and Kahneman, 1981). Additionally, the problem is seen from multiple perspectives, depending on the actor that is reflecting on the problem (Moor, et al., 2013). These factors make the process of problem understanding complex. To assist our client in developing a better understanding of the problem, we have conducted a series of interviews with involved actors. This approach has been used to gather relevant data that might be useful in the policy adaptation process. Our part was to facilitate a discussion with dike rings 1 and 2. There were two main objectives that we have developed, in communication with Rijkswaterstaat. Firstly, we were asked to clarify the position of a specific actor. This included interest and involvement evaluation. Secondly, when we have formed a better understanding of what the actors' expectations on the policy outcomes is, we would analyze the degree of flexibility of the specific actor. This was done simply by addressing questions about which alternative policy scenarios they would tolerate. The later information provided our client with a better overview of the problem and allowed us to adopt a degree of freedom when selecting a final policy. Because it was more clear which alternatives were more likely to be accepted by the actors. Better overview of the problem has helped Rijkswaterstaat to select the most suitable problem formulation.

Strategy 2: Support on the debate. We have suggested that the most efficient way to utilize our resource is to conduct a physical working session, where we would work together with the client to design the optimal policy combination. This proposal has been overwhelmingly positively accepted by the client. Such an action has proved our commitment to the process and greatly contributed to the client satisfaction. Moreover, simply having more people working towards the same goal has boosted morale and increased the computational power at our disposal. One of the advantages of hiring external analyst companies is that you, as a client, have temporary access to the tools and equipment that can be beneficial in problem solving. Similar situation has occurred at the working session. By presence of additional group members, we were able to run multiple simulations with different policy inputs. This would not be possible without additional computers since it takes time to run one simulation. The client had limited time to interpret the results and it has been decided that two members from our analyst group would join the final debate to provide additional insights on the results, if needed. This was exactly the case, the 'Death rate' has been inaccurately communicated by the client to the other participants, which resulted in immediate confusion and lack of support. We had to step in and clarify that the 'Death rate' is an absolute number of deaths per region per year, whereas it has been communicated by the client as a number of deaths per thousand people. Clarification of the results has prevented some actors from withdrawing their support towards the proposed policy.

Strategy 3: Individual approach and model-based argumentation. The interaction between science-focused groups and political actors is often contested during the decision-making process. (Van Enst et al., 2014). Firstly, an efficient communication channel has been established between one of our group members and one of the Rijkswaterstaat representatives. This was done to prevent wrong interpretation of the results or only accepting part of the results that support the client's interests (Pestel, 1982). Also, in that way, we were able to delegate more time to the client. Whereas, one member was executing data gathering tasks for the client, another group was working on the main deliverable. Therefore, we were able to perform an effective workload distribution and keep in close contact with the client throughout the whole process. During the working session, all proposed policy arguments were supported by model-based argumentation. Common contribution to the policy design process has led to the development of an optimal policy combination that has been accepted and supported by all actors. Another interesting observation was that the other analyst group was responsible for gathering information from dike ring 3, who were the most opposing actors in the debate process. A lack of data about the motivation of dike ring 3 has limited the ability of our client to maneuver between possible alternatives that could be offered to reach a full consent. The other analyst group failed to provide constructive advice on how to deal with this specific actor, whereas our group has suggested multiple strategies how the full consent could be reached. This has resulted in a credibility loss for the other analyst group and increased trust towards our group in the eyes of the client. Our active participation in the debate and working sessions has improved the relationship with the client greatly.

Potential measures to cope with tensions and challenges
Due to limited time and resources, several measures were not implemented in the decision-making process timeline. However, they are described in the section below.

Development of sophisticated KPIs. People are prone to neglect the whole complexity of a system they are challenged with. This especially applies to the water management system, as it includes many deep uncertainty factors (Forrester, 1961). Rijkswaterstaat has presented the policy and its

impact in three different categories. However, these results do not accurately compare between different actors. If the death rate is an absolute number, it is obviously higher for the region with the highest population density. At least it was in our case. Apparently, this specific category had the highest concern among the dike ring representatives. This could have been converted into the percentage of a potential population decrease due to flooding. In our opinion, that would have been a more competitive assessment KPI.

Impact and benefits. The impact of the policy has been presented one-sided. It highlighted only the impact categories in a reference to the potential damage that will be caused if the policy is implemented. Such an approach is not false, but it could have been perceived incorrectly. For instance, the policy might create a link between the damage and deaths, whereas it is used to minimize these factors. A more appealing and still rational way to represent results could have been conversion to potential benefits of the policy adaptation. Or simply comparing it to the base case outcomes in the same categories. This should have been done to form a clear understanding of the benefits of the proposed policy. A deeper integration of such a measure would mean redefining the model, having a potential benefit metric would make the model more fit for purpose (Wright and Esward, 2013).

Reflection on strategy

Reflection Strategy 1: Developing problem perception with the client. Reflecting on the work process that took place, we could suggest specific improvement measures that could benefit our client in the future. Firstly, early involvement in the problem formulation process, would have helped us to form a better understanding of what are our clients needs and desired outcomes. Thus, enable us to provide a better service.

Reflection Strategy 2: Support on the debate. Our participation in the final debate has created immense added value to our client. However, we were allowed access to a very limited part of the information that Rijkswaterstaat possessed. This limited our ability to give advice to the client with a high degree of certainty. Disclosing information is a very sensitive topic, especially with governmental agencies. Nevertheless, there are ways to minimize the probability of data leak, such as NDAs.

Reflection Strategy 3: Individual approach and model-based argumentation. Maintaining a healthy relationship with the client is essential to reach a mutually beneficial outcome (Steward, 2006). Being generally transparent about our work progress gave the client a realistic overview about the expected results. Showing initiative and suggestions on the approach has greatly contributed to the client's overall satisfaction.

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