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Benefit of Governance in Drought Adaptation – Governance Assessment Guide

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BENEFIT OF GOVERNANCE
IN DROUGHT ADAPTATION



Governance Assessment Guide

Adapt to drought and water scarcity now



Investing in Opportunities



This project has received
European Regional
Development Funding
through INTERREG IV B.



INTERREG IVB

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“Without a sufficient degree of coherence between the elements of the governance context too often the efforts from one side are hindered by well-meant efforts from another perspective”

1. Introduction to the Governance Assessment Guide

This guide presents the work of the team of scientists that have been working in the project “Benefit of Governance in **D**rought **A**daptation” (in short: the DROP project), which has received funding from the Interreg IVB programme of the European Union.

As a result of climate change, it is expected that extreme events influencing water management (flooding or drought) will increase. Early adaptation to this trend of increasing climatic extremes is therefore required. Governance plays a crucial role in the adaptation process particularly in restricting or facilitating the implementation of adaptation measures. In-depth knowledge about the governance setting of a given region and how to influence governance processes is therefore essential in realizing effective adaptation.



The team of scientists of DROP has developed a Governance Assessment Tool (GAT), through which the governance setting of a given region for planning and realizing drought adaptation measures can be assessed. Based on this assessment, recommendations can be developed to regional water authorities on how to operate most effectively towards increased drought and water scarcity adaptation in this governance context. The GAT has been applied to the six regions in Northwest Europe that were part of the DROP-project: Twente and Salland in the Netherlands, Eifel-Rur in Germany, Brittany in France, Somerset in the United Kingdom, and Flanders in Belgium. These regions focus on drought aspects related to nature, agriculture and freshwater. This 'Governance Assessment Guide' that you are now reading will present the GAT and its application. The goal is that this guide will aid regional water authorities and other relevant stakeholders that are interested in regional analysis of the governance of water resources. However, the GAT can be, and has been, applied more broadly, to a range of governance contexts for water

management and beyond. As such the remainder of this document may be of interest to a range of stakeholders with an interest in governance assessment, whether that context is about water, more specifically about drought or flooding events, or other environmental issues.

In section 2 we will explain why governance assessment of drought adaptation is both relevant and necessary. Since the term "governance" can have several meanings, we will specify our working definition. In section 3 we will describe and explain the GAT. In section 4 we discuss how the GAT can be used to come to regional diagnoses and recommendations for regional water authorities and other relevant local, regional and national stakeholders. Section 5 gives the reader an indication of the results we achieved within DROP, providing examples of regional diagnoses and lessons learned. We end in section 6 with a short summary in which we also provide the reader with links to additional material and contact people for those interested in working with the GAT.

2. Why governance assessment of drought adaptation

Drought adaptation is embedded in a wider range of water management issues such as water quality, flooding and resource allocation. Although much attention goes to the abundance of water (flooding) in Northwest Europe, shortages of water (drought and water scarcity) can have equally severe impacts in this region. In order to tackle drought risk and its impacts, an integrated approach to water governance is needed, one that considers multiple dimensions of water management. Water governance concerns the way in which the management of water resources is guided and structured. Organizational, legal, financial and political issues guide and structure the interactions among all actors and the actions taken by them in implementing water management. The concept of governance is widely used both in the policy-making context as well as scientific literature on policy, with a great variety of meanings.

Our general working definition of governance can be applied to various subjects (for a certain domain of social reality like in this case drought resilience management) is:

"Governance" is the combination of the relevant multiplicity of responsibilities and resources, instrumental strategies, goals, actor-networks and scales that forms a context that, to some degree, restricts and, to some degree, enables actions and interactions.

An integrated approach to water governance facilitates the protection and modification of water systems and water sanitation chains to support human and ecological needs. Though this may seem like a straightforward goal, in reality it is not. Perceptions of problems and potential solutions for adaptation, shape the definition of short, medium and long term goals to adapt to drought and water scarcity. As an example, an engineer would define the issues of drought and goals for adaptation potentially very differently compared to a social scientist, a nature organization representative, or a farm manager. Water management is quite unique in that it spans and solicits multiple perspectives, from very different organizations, across sectors and domains. It relates for instance to land use planning, nature protection, economic development and many more policy fields.

Drought adaptation, as part of general water management, thus needs to include significant attention to governance and, as part of that, for the coordination of the different perspectives that sometimes diverge and compete. The governance concept provides a broad framework for addressing this inherent complexity and incorporating the competing perspectives. This is of specific importance in areas with periods of insufficient water availability, where there is intense competition between different uses and users. By identifying gaps and possible improvements, the governance analysis can help improve the structure of drought responses and balance the effects of this intense competition, e.g. by spreading them among different uses and minimising efficiency losses.

3. The Governance Assessment Tool: description and explanation

The Governance Assessment Tool can be used to systematically assess a governance context in a specific domain concerning a specific issue, like for instance drought. In the tool a clear distinction is made between descriptive dimensions and quality criteria. These quality criteria are not normative in an ethical sense, but relate to the conditions for management. In particular, the tool draws attention to the governance conditions that can hinder or facilitate the implementation of water resources management policies and projects under complex and dynamic conditions. In the approach taken here, governance is seen as the context in which measures are developed and applied, rather than

as the action itself like would be the case in some other approaches to governance. What happens in practice is ultimately a result of the interactions of people (both individuals and organizations or groups). What they want, believe and can do is obviously influenced by the specific socio-cultural, political, economic and environmental circumstances of the cases in which they operate. It is important to develop unique governance assessments for each regional context, due to the unique combination of these issues across regions and countries. Below we will stepwise explain our Governance Assessment Tool.

Step 1: Discerning the dimensions of the governance concept

Governance is often said to differ from earlier developed concepts like government or policy in that it emphasizes the multi-level and multi-actor character of all forms of steering of any specified (sub)sector of society. In our approach to the concept of governance we do not only discern

the multiplicity of the levels and of the actors involved, but also apply the idea that the concept of governance assumes multiplicity to the dimension of the older concept of policy: goals, instruments and the means to apply them.

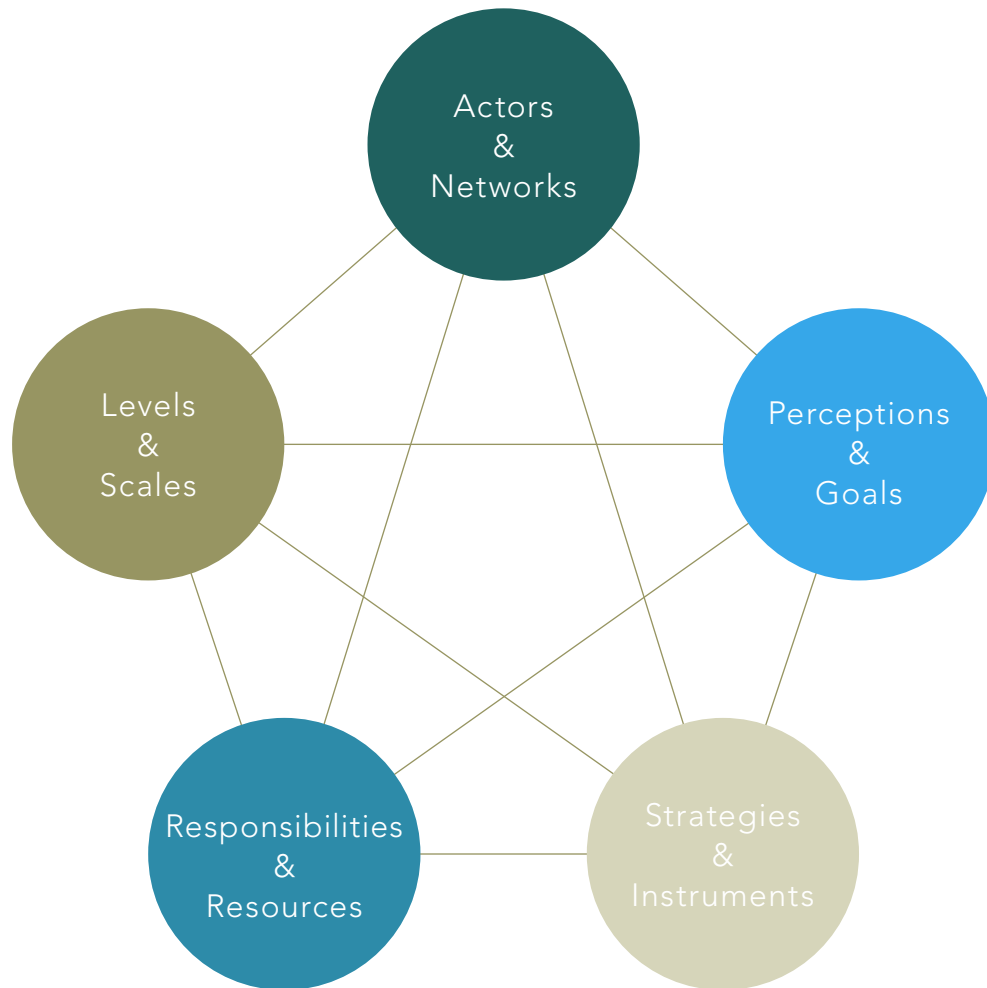


Figure 1. Five interrelated dimensions of governance

In each governance context there will likely be multiple goals involved, multiple instruments and multiple means to apply them.

Consequently, we discern five dimensions of governance:

1. Levels and scales (not just administrative scales from local to EU, but also hydrological scales): governance assumes a general multi-level and -scale character of all steering.
2. Actors and networks: governance assumes the multi-actor character of the relevant network(s).
3. Perceptions of the problem and goal ambitions: governance assumes the multi-faceted character of the problems and ambitions
4. Strategies and instruments: governance assumes the multi-instrumental character of the strategies of the actors involved.
5. Responsibilities and resources for implementation: governance assumes the complex multi-responsibilities' and resource bases for implementation.

To be able to systematically describe what these dimensions look like in any given governance context we developed a tool which takes the form of a set of questions that can be used to guide the analysis of policy and other archival documents, and structure the conduct and analysis of qualitative interviews with key informants. Figure 2 below gives an overview of this tool. The descriptive questions in Figure 2 are formulated for the application to the water management domain.

All five dimensions include a descriptive question regarding the time dimension – that is, 'Have any of these changed over time or are likely to change in the foreseeable future'. In the context of the DROP project, it was particularly relevant to include this time dimension to spot any visible trends in the governance dimensions across case study regions. This is particularly important in Europe where countries face the same deadlines, like the 2015 - 2021 - 2027 assessment years of the Water Framework Directive.

Governance dimension	Main descriptive questions
Levels and scales	Which administrative levels are involved and how? Which hydrological scales are considered and in what way? To what extent do they depend on each other or are able to act productively on their own? Have any of these changed over time or are likely to change in the foreseeable future?
Actors and networks	Which actors are involved in the process? To what extent do they have network relationships also outside of the case under study? What are their roles? Which actors are only involved as affected by or beneficiaries of the measures taken? What are the conflicts between these stakeholders? What forms of dialogue between them? Are there actors with a mediating role? Have any of these changed over time or are likely to change in the foreseeable future?
Problem perspectives and goal ambitions	Which various angles does the debate of public and stakeholders take towards the problem at hand? What levels of possible disturbance are current policies designed to cope with? What levels of disturbance of normal water use are deemed acceptable by different stakeholders? What goals are stipulated in the relevant policy white papers and political statements? Have any of these changed over time or are likely to change in the foreseeable future?
Strategies and instruments	Which policy instruments and measures are used to modify the problem situation? To what extent do they reflect a certain strategy of influence (regulative, incentive, communicative, technical etc.)? Have any of these changed over time or are likely to change in the foreseeable future?
Responsibilities and resources	Which organisations have responsibility for what tasks under the relevant policies and customs? What legal authorities and other resources are given to them for this purpose or do they possess inherently? What transparencies are demanded and monitored regarding their use? Is there sufficient knowledge on the water system available? Have any of these changed over time or are likely to change in the foreseeable future?

Figure 2. Main descriptive questions per dimension of governance

Step 2: Criteria for a supportive governance context

The GAT includes descriptive questions, which lead to an overview of the main elements in each dimension of governance. However, assessments are also made based on four quality criteria of the water regime which should be considered in each governance assessment. They are developed from studying success factors in complex and dynamic implementation situations. The four criteria are defined by the questions that they pose:

1. Extent: are all elements in the five dimensions that are relevant for the sector or project that is focused on taken into account?
2. Coherence: are the elements in the dimensions of governance reinforcing rather than contradicting each other?
3. Flexibility: are multiple roads to the goals, depending on opportunities and threats as they arise, permitted and supported?
4. Intensity: how strongly do the elements in the dimensions of governance urge changes in the status quo or in current developments?

“In complex and dynamic implementation processes a fair amount of flexibility is required to go around obstacles and to grab opportunities while they arise”

The ensemble of these four criteria is relevant to assess water governance in its multiple aspects. The extent is important because for instance actors that are left out of decision-making processes might become unnecessarily opponents or other gaps like in problem definition might leave potential instruments for adaptation unconsidered and unused. The questions that aim to assess the degree of extent differ from the descriptive questions in Figure 2 in that they are not just making an inventory, but assess the degree of completeness of the governance context according to this criterion.

The coherence of the governance dimensions – both in terms of internal consistency of the governance dimension and the paradoxes and contradictions across governance dimensions – is important.

For example, a lack of alignment of problem perceptions amongst various actors might lead to contradictory measures of drought adaptation being adopted in the same region.

The activities in complex and dynamic implementation processes require a fair amount of flexibility in each of the governance dimensions. For example, flexibility is required to go around political or economic obstacles, to respond to opportunities while they arise (e.g., a drought period), or to allow flexibility across other sectors that influence water management (for instance to “piggy back” drought adaptation measures on land management measures from other sectors).

Lastly, drought and water scarcity will gradually pose more challenges for Europe. The criterion of intensity refers to strongly do each of the dimensions urge changes in the status quo or in current developments in drought resilience management.

Step 3: The GAT - an instrument to assess the quality of governance on its five dimensions

For each of the five dimensions of governance (Figure 2), the four criteria mentioned above are specified with specific questions (Figure 3) which forms a matrix of assessment for the governance of drought and water scarcity for a region. This matrix forms the core of the Governance Assessment Tool in terms of how it can be applied by water authorities or other stakeholders. Together, these questions shed light on **the degree of supportiveness or restrictiveness of the governance context towards various adaptation actions to enhance resilience to drought and water scarcity**. It is important to note that the GAT does not assess the functioning or success of an actor or a specific adaptation plan. Rather, the GAT assesses the entire governance context, enabling reflections on the way that this context supports or restricts work on drought adaptation.

It is important to note that even with these questions that specify the cells of the matrix, hard “measurement” in the sense of a quantification is not possible. Some degree of “informed judgment” is inevitable when assessing the status of the four criteria relevant to the various governance dimensions. It is important therefore, that ‘triangulation’ of assessment occurs between at least two observers who have taken part in the documentary reviews and interviews. This is to ensure that the assessment does not overlook important aspects (based on the interviewers own biases), and that the final weighting of observations occurs in a consistent way.

Governance dimension	Quality of the governance regime			
	Extent	Coherence	Flexibility	Intensity
Levels and scales	How many levels are involved and dealing with an issue? Are there any important gaps or missing levels?	Do these levels work together and do they trust each other between levels? To what degree is the mutual dependence among levels recognised?	Is it possible to move up and down levels (up scaling and downscaling) given the issue at stake?	Is there a strong impact from a certain level towards behavioural change or management reform?
Actors and networks	Are all relevant stakeholders involved? Are there any stakeholders not involved or even excluded?	What is the strength of interactions between stakeholders? In what ways are these interactions institutionalised in stable structures? Do the stakeholders have experience in working together? Do they trust and respect each other?	Is it possible that new actors are included or even that the lead shifts from one actor to another when there are pragmatic reasons for this? Do the actors share in 'social capital' allowing them to support each other's tasks?	Is there a strong pressure from an actor or actor coalition towards behavioural change or management reform?
Problem perspectives and goal ambitions	To what extent are the various problem perspectives taken into account?	To what extent do the various perspectives and goals support each other, or are they in competition or conflict?	Are there opportunities to re-assess goals? Can multiple goals be optimized in package deals?	How different are the goal ambitions from the status quo or business as usual?
Strategies and instruments	What types of instruments are included in the policy strategy? Are there any excluded types? Are monitoring and enforcement instruments included?	To what extent is the incentive system based on synergy? Are trade-offs in cost benefits and distributional effects considered? Are there any overlaps or conflicts of incentives created by the included policy instruments?	Are there opportunities to combine or make use of different types of instruments? Is there a choice?	What is the implied behavioural deviation from current practice and how strongly do the instruments require and enforce this?
Responsibilities and resources	Are all responsibilities clearly assigned and facilitated with resources?	To what extent do the assigned responsibilities create competence struggles or cooperation within or across institutions? Are they considered legitimate by the main stakeholders?	To what extent is it possible to pool the assigned responsibilities and resources as long as accountability and transparency are not compromised?	Is the amount of allocated resources sufficient to implement the measures needed for the intended change?

Figure 3. The GAT matrix with its main evaluative questions



4. Diagnosing and advising with the Governance Assessment Tool

The GAT can be used by stakeholders themselves, or as a guidance for interactive workshops with stakeholders. In this section both experiences with using the GAT in the DROP project will be shared and advices for potential users

will be presented that are based on the lessons learned while using the GAT. Thus, while the text contains a lot of advices on how to use the GAT, it does not have the character of a manual.

4.1 Diagnosing with the GAT

A way to ensure the valid and reliable assessment of the governance context of a particular region is through liaising with those embedded strongly in the governance context and water management reality. In the DROP project, the governance assessment has been developed by social scientists with the help of the practice partners (project partners from the region such as water authorities and county councils) and other governmental and non-governmental stakeholders). This has allowed both for continuous iteration between science and practice, as well as for access to regional stakeholders for interviews to ensure an even representation of relevant stakeholders. The contacts and networks of the practice partners facilitated the exchange with these regional stakeholders. In order to enable a complete coverage of the perspectives and opinions of different stakeholders, the governance team visited each region twice and prepared a draft assessment report for each region, which was finalized after the second round of visits. The practice partners and other stakeholders interviewed were encouraged to 'feedback' into the draft reports to ensure that the governance assessment reflected the reality of water management in that specific regional context.

Diagnosing with the GAT requires a good knowledge of the actor network involved in water management at a given scale, and also a good knowledge of the issues at stake. This knowledge can be obtained either through a certain proximity with the actors (as in the case of the DROP project), or through a direct involvement of local actors in the assessment of the conditions in the GAT matrix.

Furthermore, it is essential to interview and discuss with actors from different levels, e.g. local, regional and sometimes even national or federal level, which are related to the drought topic. The perspectives of the actors on the different levels are needed to build up a whole picture of the governance setting.

As regards to the implementation of the GAT in the case of the DROP project, two important factors can be highlighted explaining the relative success of the project:

Composition of the governance assessment team

First of all, the **diversity in backgrounds** of the analysts diagnosing the governance context played a positive role. It helps avoiding scientific disciplinary terminology. Simple and clear messages are easier to translate into concrete and feasible actions when formulated by an interdisciplinary team of scientists rather than a monodisciplinary group with its own conceptual underpinnings and self-reinforcing discussions. In an interdisciplinary project team, there is a constant need for mutual adjustment and searching for a common language. If this process occurs thoroughly and successfully, the resulting outcomes are generally well thought out and smartly formulated.

“Having relative outsiders questioning what would otherwise be taken for granted by observers from the own country or region, can provide important eye-openers”

Interestingly, a tool such as the GAT can help not only to perform an assessment, but also to stimulate collaborative interdisciplinary work. Equally, that the governance team was **composed of 'outsiders'** to the region meant that there was objective reflection on what were sometimes very local issues and to the institutional rules and habits involved. Questioning what would otherwise be taken for granted by observers from the own country or region, can provide important eye-opening reflections. One recommendation therefore is to use the GAT in interrelation with actors coming from various contexts: either from another region, or from another country. Of course, this is only possible in situations where the GAT is applied in more than one region at the same time. The members of the governance team in DROP also had various disciplinary backgrounds, though mostly in one of the social sciences. This equally can help to keep a fresh perspective on the data uncovered. Of course, it could also be a disadvantage in situations where diverging disciplinary backgrounds imply the risk of divergent interpretations of the GAT. In DROP this proved no disadvantage in practice, but it is important to have in mind that the **proper use of the GAT requires a common view about the meaning of each cell of the governance assessment table** and thus on the observations to base their assessment on. One last point is that in DROP we found it quite useful to have the team members visit several regions. This **observation of several governance settings allows for comparative analysis** already during the data gathering phase, and as a result that creates the possibility to sharpen questions along the way. Most members of the governance team visited two or three regions twice, one team member even visited all regions. A similar exchange was realized at the level of the practice partner, where drought experts from each partner visited their 'pilot partner region' (each pilot (Nature, Agriculture, Freshwater) included two of the six regions) twice.

Relation between team and stakeholders

The second factor is related to the fact that the social scientists who were involved in the project as governance team sometimes played a sort of **"modification" role in terms of increasing the awareness of drought and water scarcity in the region**. That is, while this could be seen as research, doing such research in the region also forms a type of 'intervention'. A number of the stakeholders interviewed had a fairly low awareness of the relevance of drought for their cases and the role of climate change therein. Nevertheless, the fact that an international governance team was visiting their region, asking many questions on the subject and returning with feedback and further questions half a year later contributed to pushing drought and water scarcity onto regional agendas. A clear example is that the governance team caused to plan a climate change meeting on the agenda of the CLE (Commission Locale de l'Eau, the Vilaine Water Authority), the first time that this subject is discussed among them. However, there can be a downside to these kind of interventions. The modification side-effect of such "action research" can also inhibit local actors in participating fully in the assessment – it is difficult to answer questions on issues that you have never yet considered or do not like to consider. The fact that the GAT is not meant to evaluate the work of the practice partners, but the context under which they have to do their work should be made clear and might help in this respect. Moreover, the need for a diagnostic report through the GAT must be supported by the practice partners themselves. The importance of the report is clearer when the assessment can be integrated within a decision-making process, for instance related to development of climate change policy for the region. In the case of DROP, it was related to the necessity to make new water management programmes for the Water Framework Directive.

4.2 Pointers and guidelines for preparation of using the GAT

The pointers and guidelines given in this section are based on our experiences about what worked well within the DROP-project. Given the diversity of nationalities and diversity of professional backgrounds of the governance assessment team,

it was found to be useful to collect some existing documentation or prepare a short document to provide **prior information on the context of climate change, water management, and adaptation policies of each region**.

This levelled up the governance team members' understanding of the main features of each site before the interviews. It also allowed the interviews to focus on issues that were not published or available elsewhere, thus using the short time of the interviews more efficiently. The field excursions, which were organized by the practice partners during the visits, also contributed to a better apprehension of the physical and social context, providing the opportunity to actually see the main features of the water management system to be investigated and analysed. During the assessment of drought governance it became apparent that it cannot clearly be separated from other connected governance settings, e.g. water governance, land use planning etc. The broader framework always influences the more detailed analysis, inevitably creating more general results and recommendations over time.

The **inclusion of a local institution** as a cooperative partner for the interviews was very useful for contacting relevant stakeholders. The local partner possessed a well-established network and could more easily convince stakeholders to participate in interviews. Additionally, the local partner was central in compiling and screening the most relevant stakeholders and actors, including less obvious groups, to interview for achieving the widest scope possible. The assessment team made sure that also potential critics were involved among the stakeholders interviewed.

The interviews had a variety of settings. Some were individual interviews and some group interviews to test the efficiency of each approach. The analysis is very much dependent on **open discussions** between the interviewees and the interviewers. It is necessary to gather critical issues, therefore individual interviews or small groups of interviewees seemed more suitable for the establishment of

trust, and the open discussion of sometimes critical or difficult issues. In the group interviews, representatives of similar organizations were often grouped together, e.g. nature nongovernmental organizations (NGOs) or farmer representatives. We experienced that when there were more than three actors per interview session of one-and-a-half to two hours, it was much more difficult to cover all of the main topics, and it required much higher levels of structure and coordination to keep the conversation on task. Another experience was that the presence of a representative of the practice partner (water authority) at the interviews was sometimes useful to get a good introduction of the governance assessment exercise to the interviewees, but should also be dealt with carefully in order to make sure that the interviewees feel they can talk freely. A problem occurs if a major stakeholder group cannot be reached, because then the point of view of this group cannot be involved in the discussions. During the second visits, the governance team tried to make up for such situations, in some cases by visiting those stakeholders at their own offices or even homes.

When **translation** was needed between the English language questions of the governance team members and the representatives of stakeholders that were not comfortable in that language, it proved to be good to have one of the governance team members to fulfil the "translator" role. This way the relation between interviewers and interviewees did not get disrupted and the knowledge of the tool by the governance team member ensured good interpretations and summaries of what was said by the stakeholders. Furthermore it proved to be particularly useful to be able to adapt the questions to the case by using terms of local institutions.

4.3 How to use the GAT and matrix to inform stakeholder interviews and assessment

Generally the GAT should not be used as a battery of questions to put forward during each interview, but **used as a checklist** to make sure that all issues were dealt with in the course of the conversation while keeping the flow of the conversation as much as possible. The questions from the GAT should be adapted to the local contours of each case, such that the questions targeted the specific local context, including appropriate strategies and instruments, local actors, and level of analysis.

All interviews should be recorded in detail (either comprehensive verbatim notes, or tape recording, or both). Through a series of short **debriefing sessions** by the governance assessment team directly after each round of interviews, the data was extracted and analysed in the context of the 20 evaluation items of the GAT matrix.

Within a week after each session, a teleconference (phone or skype meeting) provided additional exchange and inputs to the main authors of each case report. The draft case reports were distributed for comments among the governance team members, and ultimately discussed with the practice partners during the second visit to the case areas. These draft reports also formed the basis for judging what issues to focus on in the second round of interviews – as the development of these reports allowed the identification of issues or stakeholder perspectives missing in the assessment.

The results of a GAT analysis can be summarised, even in the form of figures or tables. The issue is that transferring the richness of the data gathered by numerous documents and interviews into more condensed layers of summary and ultimately into an overview has both positive and negative aspects. On the one hand it is necessary to enable comparative analysis between several cases. On the other hand the summary should not hide away essential observations that form the evidence for the scores. In the DROP project this has been achieved by assessing each of the twenty cells of the matrix by a brief statement and sometimes a score of a three or five point scale, followed by a paragraph to page length of observations on which this statement is based. The scores on a three point scale have also been translated into **graphical visualizations showing the matrix with colours** ('score cards') indicating the value of each cell (see chapter 5 for some examples). These visualizations enable a quick overview of the results and allow to compare amongst regional cases.

However, one should always keep in mind that such a summary of summary is a derivative of a much richer set of observations and its interpretation. Finally, the GAT matrices proved to be very helpful when explaining the approach and the results of the GAT sessions to others. The visualizations illustrate the differences between the case studies. However, it is important to keep in mind that the colours portrayed are a simplification of the larger narrative, and should be read in combination with more expansive and descriptive text.

“The GAT helps in finding successful approaches to deal with the governance context that could be useful to other sites facing similar challenges for drought adaptation”

Likewise, a **comparison of the prepared GAT-matrices** (see following chapter with examples of GAT-matrices, color-coding the results for the governance dimensions and criteria) should be done very carefully. The matrices are developed independently by different leading authors and it seems that some authors differ slightly in their 'judgments'. Hence, in a comparison of the assessment of the different case studies, the written text on the assessments should always be included and not only based on the comparison of the matrices.

4.4 From diagnosis to recommendations

While the GAT can be well applied to singular cases, it also provides a framework to compare across cases and easily identify the dimensions and qualities of governance with greater **potential for improvement**. For example, comparing the assessments of the two freshwater pilot cases, it showed that the existing structure of instruments and strategies in the Eifel-Rur shows options for improvement of the Vilaine Catchment coherence in strategies and instruments.

The GAT helps in finding successful achievements of one site that could be useful to other sites facing similar challenges.

Advice on how to deal with a governance context, or how to try to gradually change the context such as creating more room for drought resilience measures, can be affected by the present (power) relations among the stakeholders.

For some actors involved in a “day to day” process on the basis of their own understandings and priorities, it can be difficult to be perceived as the object of study, even when the researchers assert that it is the context of the process rather than their deeds therein that are evaluated. Then the tendency is to argue against any suggestion that is experienced as criticism. On the other hand, like all evaluations, **selected outcomes of the governance analysis can also be used by actors as a tool in power relations**. While the use of the GAT requires mutual trust between the interviewed actors and the governance team, it is important to avoid partiality of the analysis, that could be potentially be driven by the influence of local stakeholders. A neutral position is required, as well as a capability to understand and integrate various positions. Having exchanges with practice partners on the governance assessment can contribute substantially to the development of recommendations. It is relatively easy to propose that some action should be undertaken to improve or circumvent weaknesses in the governance context. But the development of advices about *how to implement* such actions needs inputs from the practice partners.

Beneficial for coming to recommendations can be to include more than one case study in the application of the GAT. We noticed this in the application in the DROP-project. The **multiple case study** character of the use of the GAT helped us to develop recommendations based on what works well elsewhere and what stands out in one region compared to other regions. Insights from pilot cases that face similar challenges are potential sources of advices, with the benefit of having a clear example to illustrate the ideas with concrete outcomes. Additionally, as a contribution for the learning experience of the practice partners, hearing about the governance assessment conclusions regarding other regions provides the possibility to refresh the way their own context is reviewed.

Visiting case study regions and stakeholders in the field provides a better understanding of the specific physical circumstances under which the drought resilience measures are implemented. It also enables to illustrate with clear examples what we mean by climate resilience and adaptation measures, for instance new protocols for reservoir management and irrigation or changes in the drainage system to increase the absorbent

capacity of agricultural fields. For example, the awareness of the need to integrate drought resilience measures with flood resilience measures into a climate resilient system approach has a low extent among various stakeholders. This can be illustrated by the fact that in Somerset, during the exchanges with farmers the governance team noticed some floods prevention actions that had worsen vulnerabilities to drought, as the selection of seeds adapted to water abundance but too sensitive to drought. To be able to give such practical illustrations can help putting the message across.

As a **procedure to compile recommendations**, statements of the different cells and questions of the assessment matrix were screened carefully. Important connecting issues were then highlighted. Especially the critical statements, which the stakeholders made during the interviews, were screened by the governance team to identify the improvement areas. This brainstorming exchange within the governance team was useful in developing and structuring ideas relevant to the recommendations. Comparisons between the different case studies were also explored to identify common issues as well as opportunities among the case studies. Different approaches and experiences could be compared and used as the basis for further discussion. One major step was to gather feedback to the developed recommendations. It was evident that the recommendations were developed with limited knowledge of the history of the local and regional institutions and their culture and experiences. As a result, it was very important to discuss the recommendations and gather feedback.

The development of the recommendations was completed based on the results of the first and second rounds of interviews, as well as several governance team meetings. However, it was also crucial to share recommendations with partners and stakeholders to allow for the inclusion of their recommendations as well.

The **type of recommendations** that can be drawn are case-dependent. The different possibilities of water authorities in the Northwest European countries main recommendations have to be tailored to each situation, according to the role of the practice partner that will be advised.



For example, in Somerset the partner Somerset County Council is rather a facilitator than a decision-maker, whereas water authorities such as the Dutch water boards in Salland and Twente, as well as the water authority in the Eifel-Rur have much more power. Recommendations for the Somerset case would therefore focus predominantly on the upper regional level and the national level, and recommendations to partner

Somerset County Council would mostly consist of suggestions on how to stimulate developments at these upper levels. One tool that partners in DROP had available for that was the project obligation to seek regional and national 'observers'; i.e. actors that would promise to uptake DROP outcomes and disseminate these via their networks.

5. Examples of results of Governance Assessment Tool analyses and recommendations

This section provides examples of interesting insights derived with help of the governance analysis in the six DROP regions. In the format of this guide we can only give some examples. In other publications, which are being prepared within the scope of DROP, these and many other

conclusions will be explained in more detail. For instance, for each region studied, there is also a separate governance assessment report that is produced by the governance team and is published on the DROP website (<http://www.dropproject.eu/publications>).

5.1 What sort of insights to expect: example from Vechtstromen

An example of a region-specific governance insight is related to the implementation of drought resilience measures in the northeast part of the Dutch Twente region, the most drought sensitive part of the area of the Dutch water authority of Vechtstromen. In this region, we witnessed a very close collaboration between the representatives of the various organizations involved, who know each other well and trust each other. This collaboration creates coherence and enables that goals and measures are aligned and that resources like budget and powers are combined to produce a good result. The same collaboration can, however, also be viewed as a successful adaptation to a governance context, which is for the rest quite incoherent and even fragmented. The responsibilities and resources for the implementation are for instance so much fragmented that all parties realize that it is only by mutual coordination that they achieve anything at all.

This created what we labelled a **"fragmentation – coherence paradox"**. While fragmentation would normally lead to stalemates and ultimately loss of interest in the subject, in this context of sufficiently positive experiences with mutual collaboration it leads to the understanding that all parties need each other and also do not need to fear dominance of one over the others.

The collaborative strength of the Dutch approach and its emphasis on soft instruments for the promotion of preventive measures improving the drought resilience of lands in sensitive areas, shows both a strength and a weakness in terms of levels. The positive aspect is that it creates sufficient focus on customization. The vulnerability for drought damages can be very local, even varying at plot level.

Therefore, the preventive approach often consists of a collection of very small scale measures, at the land of farmers and other landowners that volunteer. But this voluntary customized approach is also a **challenge**

for up-scaling the scattered projects to the entire sensitive area. The example above shows a few insights based on the governance assessment, but not how such governance assessment actually looks like.

5.2 How does a GAT-analysis summary look like: examples from Salland and Eifel-Rur

To clarify how results of the application of the GAT look we will demonstrate results from two of the six DROP-regions: Salland and Eifel-Rur. As discussed in section 4.3 based on a much richer analysis of each of the 20 cells, we made a 'score card' of each region's matrix, with green/orange/red indicating the relative restrictiveness or supportiveness of the region's governance context.

5.2.1. Salland

For the water authority of Groot Salland the **Extent was generally assessed as supportive**. All the possible levels are relevant and present, whereas the regional level is the dominant level, mainly due to the efforts of water boards in promoting regional collaboration. A significant focus on supplying sufficient water to all users is maintained, while drought is emerging as a prominent policy issue. However, the system does not involve measures to prevent water shortages or to forecast the need for water transfers in cases of drought. Regarding the extent of actors, the active involvement of NGOs like the environmental movement is threatened by their limited financial and human resources, which are needed in order to scale up their representation.

The **Coherence was all in all assessed as neutral**. Drought measures are not integrated into the existing water use, management and governance systems, partly due to the long-term competition among different water user sectors (agriculture vs. industry vs. nature) and among different regions (east vs. west). Farmers' drought awareness is also relevant, since they are the key actors for reaching both economic and environmental goals and their involvement is acknowledged as being crucial for various projects and initiatives. The collaborative and trust-based atmosphere, which is developed through different projects and initiatives, is seen as a solid basis to reach coherent problem and system perspectives as well as collaborative and participatory mechanisms. The increasing understanding on the risks of drought for all water users creates a collaborative environment for all the stakeholders.

"The active involvement of NGOs like the environmental movement is threatened by their limited financial and human resources"

Dimension	Criteria			
	Extent	Coherence	Flexibility	Intensity
Levels and scales	Supportive	Neutral	Supportive	Supportive
Actors and networks	Supportive	Neutral	Neutral	Neutral
Problem perspectives and goal ambitions	Neutral	Neutral	Neutral	Restrictive
Strategies and instruments	Supportive	Restrictive	Neutral	Neutral
Responsibilities and resources	Neutral	Neutral	Neutral	Neutral

Colours: ■ restrictive; ■ neutral; ■ supportive

Figure 4, Coloured scorecard of the governance assessment for the Salland region

The **Flexibility of the governance context** was assessed as **moderately supportive**.

The irrigation policy, which was developed by the five water authorities in the Rhine-East sub-basin, constitutes a typical example of flexibility in terms of being able to rescale a policy issue from local to regional level. From an opposite direction, the ZON agreement downscales the national freshwater supply problem to the regional context of high sandy soils. ZON stands for: Freshwater Supply East of the Netherlands (Dutch language acronym). Additionally, the governance system is open to designing new participatory projects and initiatives as well as incorporating new knowledge through technical studies, which are backed up by the trust of the actors in the policy-making process. However, despite the high degree of flexibility regarding responsibilities, many actors struggle with little financial freedom.

Last but not least the **Intensity scored neutral** in this case. The emphasis of national and EU policies on river basin management encourages the water authorities in the same sub-basin to collaborate at the regional level. The irrigation policy, which was “adopted” by the water authorities, and the ZON agreement, which is more comprehensive in terms of the scope of stakeholders and objectives, are strong indications of a positive intensity. Accordingly, the water authorities invest in improving their monitoring and enforcement systems. However, the concern on “too much water” is dominant, making it difficult to diversify the priorities towards combating with “too little water”. Actors that lack financial resources and technical knowledge put relatively lower effort.

Several **recommendations** can be given for Salland. Here, we advised the following:

1. An integrated understanding and approach to drought and flooding; both on the level of European Union policies (such as Natura 2000) and national and regional policies (such as the regional ZON agreement and irrigation policies).
2. Improved drought awareness and ownership, in particular for the farmers, through information sharing and knowledge availability.
3. Active involvement of environmental NGOs and farmer organizations, through the above-mentioned information sharing, which creates more willingness to share risks, even though many questions regarding division of risks and responsibilities would need to be addressed by stakeholders and water authorities.

5.2.2 Eifel-Rur

In the scorecard for Eifel-Rur, the present status as well as the on-going developments are represented and are assessed. Assessing also on-going developments when is an option that can be used when rather important changes are going on and a more static “snapshot” would create an insufficient basis for recommendations. This leads to a scorecard which includes arrows depicting these **developments over time**. The explanation of the figure given below will be shorter than through one-by-one enumeration, but still covering all the criteria and dimensions.

Since the water authority in the Eifel-Rur (German acronym: WVER is in charge of nearly all water management tasks in the region, this region operates with more cohesiveness than regions with water management distributed among different actors at various scales.

Dimension	Criteria			
	Extent	Coherence	Flexibility	Intensity
Levels	▼			▲
Actors	▲	▲	▲	▲
Perceptions	▲		▲	▲
Instruments		▲	▲	▲
Resources			▲	▲

Colours: ■ restrictive; ■ neutral; ■ supportive

Arrow up: positive trend in time; **Arrow down:** negative trend

Figure 5, Coloured scorecard of the governance assessment for the Eifel-Rur region

The assessment revealed that a broad extent of strategies and instruments already exist in the region, as a result of new experiences provided by the implementation of the Water Framework Directive and the Flood Directive. This top-down governance structure for the region proved very helpful in establishing a coherent framework for effective governance.

“Also in this region,
drought is considered
a second-order problem
with few conflicts related to
drought and water scarcity
experienced thus far”

At the same time, as a result of the uniform governance structure, there is not much flexibility in moving up and down various levels of decision-making within the region. The highest authorities most often determine the course of action for water management. That said, there is still an underlying tendency towards collaborative and inclusive decision-making processes on the side of the waterboards.

Though the water governance of the region is comprehensive and sophisticated, looking at Eifel-Rur in the context of drought resiliency reveals a serious lack of drought management. In the region, drought is considered a second-order problem with few conflicts related to drought and water scarcity experienced thus far. Because no real incentive structures for water demand management measures currently exist, the assessment results indicate a serious lack of drought adaptation plans that would prepare the region for water use during periods of both short-term and prolonged drought.

Despite drought resiliency not being a top priority for the region, potential conflicts were identified that could be worsened if the region experiences unanticipated water scarcity. Problems stemming from historic water rights of a legal precedence present another barrier to encouraging proactive drought management. To counter this phenomenon, it is suggested to explore ways to build relationships with farmers, by encouraging preparedness, in an effort to avoid potential deadlocks in future drought planning.

5.3 Some examples of comparative analysis with the GAT and general recommendations

The analyses of the six areas also enabled comparisons. We will give a few examples here. In Flanders, the Flemish Environment Agency (Flemish acronym: VMM) is responsible for water management. The Dutch water boards are independent local government organizations, with an own position in the constitution, like provinces and municipalities. The VMM is however an agency of the Flemish regional government. This implies that all its plans are just proposals to the Flemish politics. To convince the political actors there has been a positive experience with collecting large amounts of hydrological data and indicators. The same emphasis is now given to these issues in the process of developing drought policies. An earlier successful approach is repeated. In a different way the much more independent Dutch water boards do the same.

Vechtstromen’s experience with river restoration projects shows that success and failure of these projects depend on the ability to combine as much as possible the goals and wishes of the involved stakeholder groups, governments, individual land owners and nearby citizens. As a result, Vechtstromen now uses the same approach for their drought resilience policy, as it has proven to be effective. This way **the governance context has a clear influence on the development of habitual approaches in policy-making and implementation.**

The **time factor and the impact of events or the lack of events** is demonstrated by the following comparison between the Vilaine and Somerset regions. In the Vilaine, except for emergency measures, there is no global plan set up to manage drought vulnerabilities induced by climate change.

The current situation of low drought risk perception, compared to a more significant flood risk perception, is explained by a lack of drought risk awareness, due to the absence of critical drought events in the past years in the region, associated to the lack of a culture of drought forecasting and risk communication. However, it is expected that as drought awareness is raised, drought adaptation measures can rapidly be designed and implemented by the efficient, existing water governance for freshwater in the basin, which is supported by a dense stakeholder network driven by IAV (the river water managers - Institution d'Aménagement de la Vilaine). In Somerset there is a greater awareness of drought and water scarcity impacts, and after the 2010-2012 floods a flurry of enhanced activity to smooth the process of adaptive measures and plans amongst regional stakeholders. Since the 2013/2014 floods, there has been an increased politicization of the issues of flooding for the region, leaving a residue of risk of maladaptation of measures to deal with climate change as flooding and drought are currently governed in silos. However, approaches such as integrated catchment management that would provide different approaches for the long term mitigation of flood and drought risk may require a substantial change to the problem perceptions and goal ambitions towards resilience and adaptation.

“In Somerset integrated plans were already developed. However the seismic shock of the 2013/2014 flooding modified the picture”

The GAT enables a comparative analysis of key governance factors in the Vilaine and Somerset cases. In the Vilaine, a main issue is that the **acceptance of climate change as a reality or at least as a relevant issue** for the stakeholders involved is very weak. This is identified as a major problem and a root cause for the low degree of openness towards adaptation. However, next to this also plain interests play a role in this low motivation of some of the water users. With their legal rights they are also in the position to block the development of the process, at least until a higher level of awareness has been developed.

In contrast, in Somerset there was much more acceptance of climate change and its double effect on water levels, with stakeholders engaged in adaptation projects. But the dependency on external funds was preventing the climate adaptation measures to be put into practice. Then an external “seismic shock” of the 2013/2014 flooding modified the picture. The politicisation of flooding in the region (including high pressure from media exposure) lead to a reinterpretation of water management that was far more one-sided and focused largely on mitigating flood events. Actors with lesser drought awareness that were before the floods prepared to cooperate with drought measures were suddenly not only aroused, but also feeling themselves much stronger in this new constellation. Multiple stakeholders quickly called to create more discharge capacity, a call that was magnified multiple times by the media and politicians. Older plans for creating a more integral way of water management had been developed, but never obtained the required funding. Due to the flooding, these plans became even less likely to be implemented in the short term.

In the comparative analysis we also noted several interesting similarities between regions. The first is that problems of too much and too little water are not only enlarged by the same development (climate change) but that also measures for combatting these **problems are interrelated**. Measures that just fight one of the problems can easily worsen the other. It is imperative to view the water system as a whole and to make it as much as possible resilient to be able to cope with both much water and little water.

The Somerset example also shows a second general feature. While floods are acute and highly visible, damage by **drought is a much more insidious and less visible problem**. Partially because of that, everywhere in Northwest Europe the intensity of problem awareness is low among most stakeholders. This applies to not only ordinary citizens but also to the farmers that underestimate their drought damage and to various local governments in the countries involved. As example for knowledge increase on drought issues and information delivery the Flanders regions shows that many data are placed on a public website of regional governmental agencies (in Belgium the national government has hardly a role in water management). Drought is one of the four water themes about which continuously updated information is presented to gradually increase both the knowledge and the awareness on the problem.



“What we need are governance approaches focused on adaptation and resilience of the whole water system rather than crisis management of extreme events”

Based on the visits of the governance team, the discussions with the water authorities and other stakeholders and the results of the governance assessment itself, it was possible to reach some major **recommendations regarding this central issue of awareness and strengthening the position of drought issues** on the public and political agendas in the various countries. We distinguished three major strategies for pushing the position of an issue that is still experienced by many as a second-order issue. These strategies have some relevance for all regions.

- (1) Aiming to place drought on the public and political agenda on its own, as an independent problem.
- (2) Addressing drought by “piggy-backing” other issues, i.e. including drought-relevant measures in different planning initiatives and ensuring coherence of plans with drought objectives.

- (3) Using a “plans in drawer” strategy by preparing a ready-to-implement strategy for when a drought event makes the topic climb the agenda and receive political attention responding a call for action.

The careful application of a combination of these strategies leads to the best way to position drought issues and bring them more alongside the already recognized importance of dealing with flood risks.

Recognising the need to address the impact of floods, while still acknowledging that there is also a very real threat for water scarcity in the Northwest European region, changes the range of strategies and instruments that could be used to effectively mitigate variability and extremes. This more joined-up approach of different forms of water management that is needed draws together a range of lessons for more effective governance of climate change adaptation across the whole of Northwest Europe. We need effective governance approaches focused on adaptation and resilience of the whole water system rather than crisis management of extreme events.

6. Summary and contact information

This Governance Assessment Guide is the outcome of two years of research within the DROP project. Starting from the premise that drought adaptation can only be handled by smart combinations of practice measures and attention for the restrictive or supportive nature of the governance structure, DROP has worked on realizing both drought adaptation 'on the ground', in the six regions we used as examples in this guide, as well as on governance assessment research. The GAT that came from the first phases of this research was subsequently applied to the six regions, allowing for refinement where necessary. This refinement occurred for instance in the evolution of earlier notions of "positive/negative governance settings" to the current usage "supportive/restrictive governance". But most importantly, the further development of the GAT in the DROP project and the extensive use of the tool by scholars from a variety of knowledge institutions provided us with valuable lessons on how to apply the tool to get the most valuable result. These lessons were gathered in this guide.

The guide is not the only output delivered by DROP. A more elaborate document has been written in earlier phases of the project, in which the Governance Assessment Tool was discussed in detail. We therefore refer any reader interested in applying the tool by him- or herself also to the following report: "Water Governance Assessment Tool. With an Elaboration for Drought Resilience", to be found online at: <http://www.dropproject.eu/wp-content/uploads/2013/07/Governance-Assessment-Tool-DROP-final-for-online.pdf>. On the DROP-website, section 'Publications' a summary document of this report can also be found.

The development of the GAT was initiated by the University of Twente. Readers interested in hearing more about the scientific backgrounds of the tool can therefore contact Hans Bressers, the leader of the team of researchers within DROP. The customization of the tool for DROP and the application was done by a team of twelve people from five research institutions, the so-called "governance team". Below are the contact persons and the regions for which they coordinated the writing of the governance assessment reports. Readers with questions regarding those regions can contact the main rapporteur.

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Colophon

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