Water, Peace and Security

WORKING PAPER

The WPS Approach

A design for an integrated, inclusive and informed approach to address water-related security risks

The Water, Peace and Security (WPS) partnership was initiated in 2018 in response to concerns about increased security risks of an emerging global water crisis. This resulted in a collaboration between the Netherlands Ministry of Foreign Affairs and a consortium of six partners: Deltares, The Hague Centre for Strategic Studies (HCSS), IHE Delft (lead partner), International Alert, Wetlands International, World Resources Institute (WRI) and Rolien Sasse (Expert Advisor to the WPS consortium). The consortium collaborates with a growing number of institutions, such as Oregon State University, Clingendael, Gesellschaft für technische Zusammenarbeit (GIZ) and the Climate Security Mechanism (CSM).

A WPS publication

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WPS aims to prevent and reduce water-related conflicts and turn vicious cycles of water challenges and instability into virtuous ones of water cooperation and peace. WPS support will enable stakeholders to develop a joint response to challenges of water and instability to improve water management and cooperation and thus support stability and peace. This will ultimately contribute to both sustainable and equitable water resource management and to improved human security and social stability, especially in regions with a higher water-related security risk.

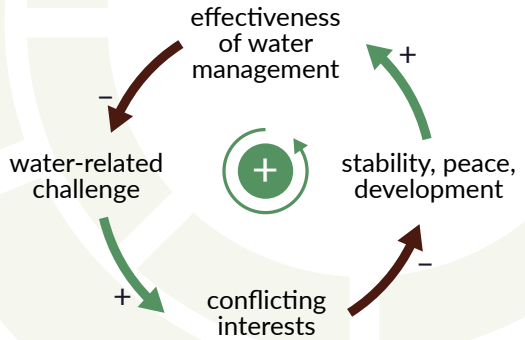

Figure 1: Moving towards positive interdependencies between water and peace

WPS has gained insights on enabling awareness raising, mobilization of stakeholders, capacity building and dialogue on the ground to address water related security risks in different contexts.

Experiences in the pilot phase (2018/2019) and feedback from stakeholders helped to adapt our understanding of the water and security nexus and how to work with different stakeholders to address water-related security risks. This has led to a first design of this integrated approach to address these risks, the **"WPS approach"**, which is described and illustrated in this paper.

We are currently applying this approach in several regions, which allows us to keep gaining experience and new insights in how this approach can be further finetuned and developed.
The content of this working paper has been reviewed and approved by the WPS management team. The authors are thankful to the wide community of present and past participants in WPS for their contributions to this shared knowledge base.

The need for an effective approach to address water-related security risks

The Water and Security Nexus

Fresh water is a key natural resource, essential for all life on earth. Therefore, the stakes are extremely high to ensure reliable, safe and sufficient access to water to sustain lives, livelihoods, economies and ecosystems.

Humankind is currently facing unprecedented water issues. Many regions across the globe experience various forms and degrees of water scarcity, water insecurity, water quality deterioration and other water-related challenges they never faced before. About 2.5 billion people (36% of the world's population) now live in water-scarce regions (UN High Level Panel on Water, 2018). With climate change impacts and increasing economic and demographic pressures, issues of water scarcity are expected to increase exponentially over the coming decades. The most vulnerable – such as those living below the poverty line and especially women – are often the most affected by water-related stress. These trends all undermine the resilience of people, communities and entire societies, further diminishing their ability to cope.

Water stress is, in most cases, seen as a threat multiplier, aggravating other social, economic and natural resource stresses in society, which collectively undermine social cohesion. Cases where conflicts erupt directly as a result of 'competing water claims' mostly happen at the local community level. Most common are cases where water is diverted or polluted by upstream water users, directly affecting water access for downstream water users. Also in these cases, the escalation of such a dispute into a conflict implies a socio-political context which has been ineffective in facilitating peaceful conflict resolution. Fragile countries are therefore most vulnerable for water related conflict.

Discussing increased fragility of countries, the World Bank identifies four key arenas of contestation (World Bank, 2018): political power and governance; land, water and extractive resources; delivery of basic services (including water services); and justice and security. The report argues that some of the greatest risks of violence today stem from the mobilization of perceptions of exclusion and injustice, rooted in inequalities across groups. This inequality and exclusion manifest themselves most starkly in these four policy arenas. Specifically, on the second arena, since 1990, one-third of peacekeeping operations took place in areas where conflicts have been economically and geopolitically fuelled by – or otherwise driven by – natural resources (UNEP and UNDP, 2013). Estimation is that 40% of intra-state conflicts is, directly or indirectly, related to natural resources (UNEP, 2009) and conflicts over "water" and "dams" have been found to be annually among the top 3 to 6 of sectors driving the killing of environmental activists (Global Witness, 2022)

The link between water and security has been studied from different perspectives. Sometimes in terms of water and security, sometimes in

the context of climate and security or of natural resources and security studies. It is generally argued that under certain circumstances water stress can contribute to conflict, but general agreement exists that the causal relationship is far from straightforward or linear (Schmeier, J.H. 2019). The link between the two is determined by a number of intervening factors that determine the vulnerability or the resilience of individuals, communities or entire societies to cope with additional stress, including stress related to water. This complexity of factors also means that when understanding and addressing water related conflict risks, this complex system of interdependent factors needs to be taken into account. In the following pages we offer an approach that can help to ensure that these factors are given due consideration when working on water management in a fragile context or on conflict resolution in an environment that faces or risks severe water stress.

Action perspectives

Given the complexity of water-related security risks, actors that intend to address these risks and their impacts or that otherwise operate in a water stressed and fragile context **can address these issues from both a water resources and a conflict-resolution angle, or take an integrated approach.**

These 'action perspectives' overlap since they each plan activities within the water-security nexus, and therefore all influence the specific water-security context they are executed in. The weight of the action perspectives in strategies designed or actions planned, will depend on the roles and mandates of those involved.

On the one hand are **interventions in the Water-Food-Energy-Climate Nexus**, that directly or indirectly impact water resources, water rights or water services. We argue that these interventions should be planned and designed in a conflict-sensitive manner.

Interventions in the Water-Food-Energy- Climate Nexus that may impact water resources and water rights	Interventions aimed at building resilience and improving water management / water services in a fragile context	Interventions directed at Conflict Resolution / Peace building in a context of water-related stresses
• Conflict Sensitive Interventions to address water, food and/or energy issues • Address the (impact of) water issues on livelihoods and social, economic and political relations	• Build water & conflict resilience at community and/or system (national, transboundary) level • Enhance the ability of communities and societies to cope with water shocks or water stress in a peaceful way	• Integrate awareness about the role of water resources, in conflict analysis and in reconciliation and peacebuilding processes • Use water projects to enhance collaboration and to build relations and trust

Figure 2 Water-conflict action perspectives, outlining the potential use of WPS approach in different types of interventions or programs

Major interventions in the water system are foreseen across the globe to respond to a continued and growing demand for sufficient and climate-proof energy, food, water and mobility. This, on top of other climate adaptation measures to protect against floods and droughts.

Such interventions are expected to decrease the accessibility to good quality water and related ecosystem services for some water users to favour others. This will impact people and their livelihoods. In a fragile context, where the legitimacy of and trust in (state) institutions is weak or where inter-communal tensions are high, these changes can further increase societal stresses, resulting in social disruption or human displacement. This risk is especially high when the distribution of impacts is perceived as unequal or unfair. To avoid negative impacts, it is important that water resources management is practiced in a conflict sensitive manner, taking into account the impacts it has on the interests and perceptions of all affected stakeholders. Ensuring a transparent and inclusive process, from planning and decision-making to implementation, is among the measures that can be taken.

On the other hand are activities in the area of conflict and peacebuilding in regions that experience specific water stresses, such as water scarcity, inadequate water services, pollution or floods. We argue that these activities should take these water issues into consideration in their conflict resolution and peacebuilding efforts.

Although a complexity of factors play a role in every conflict, it is important to understand how natural resources, including water resources, play a role as a direct or indirect contributor to conflict. Water resources can also be affected by conflict, for instance when they are used as a weapon of war or when infrastructure is damaged. Water resources management can also be part of the solution and agreements on water resource management and water allocation can enhance reconciliation and peace building efforts (UNEP and UNDP, 2013). Therefore, peace building and conflict resolution efforts should include the role of natural resources, including water, into their analysis, dialogue, strategies and peace agreements.

In the middle of these action perspectives, interventions that impact water resources or water rights in a fragile socio-political context are positioned. These aim to work on both elements in an integrated approach to increase the resilience of communities and the ecosystems on which they depend.

Effective water management, adequate water services and enhancing the resilience of ecosystems and communities involve the interests of a broad range of stakeholders and require multi-stakeholder collaboration. At the same time, strengthening social resilience, reducing conflict and reconciliation also require building interactions, trust and cooperation among social groups. As effective water management and the strengthening of social cohesion both require strong collaborative efforts; they can reinforce each other.

These three action perspectives and their key characteristics are displayed in Figure 2. The WPS approach can be applied in each of these perspectives. Where an actor or intervention is located within these water-conflict action perspectives determines how different aspects of the WPS approach can be applied, i.e. which elements of the WPS approach receive more focus and require higher priority in the process.

Key concepts for conflict management and water governance

About conflict and peace

Conflicts emerge when two or more parties (perceive to) have incompatible interests and goals (Fisher S, 2007) and when at least one of these parties perceives the other party to obstruct the fulfilment of their interests or goals. (Glasl, 1997)

Example: In Naivasha Basin, Kenya, fishermen have complained that large commercial horticulture enterprises around Lake Naivasha pollute the lake water with their wastewater, reducing water levels and fish stocks with their pumping equipment. They perceive the business case of flower farms to be incompatible to their interest to catch fish. On the other side the flower companies, aware of potential reputational risk, argue that they do comply with all legal regulations and standards and therefore can't be blamed. They also argue there may be other causes, including fishing techniques, that may impact fish stocks.

There are three types of interests at stake in a conflict (Prein, 2017):

1. substantive interests (related to the content of the issue at stake) - such as the interest to catch fish or grow flowers for a prosperous business;
2. process interests (the legitimacy of the process, how issues are seen to be dealt with, in the eyes of conflict parties) – such as how water quality is monitored and communicated, how regulations and standards are set and enforced;
3. psychological interests (the emotions people experience about the issue, the process and the other party) – such as feelings of anger and powerlessness, when people perceive they are being marginalised and their concerns are not taken serious.

In order to resolve conflicts in a sustainable way, all three levels are relevant to address.

Conflicts are not inherently bad. They are a normal feature of social coexistence, in which individuals and groups defend their interests and needs. Conflicts are often a source of social change and innovation. (Brenninkmeijer, 2017) A certain degree of conflict is essential for progress, because progress requires change and change can generate conflict. In fact, peace and conflict can coexist at different levels, from the local to the global level (Zeitoun, 2008). They can even exist next to each other. They will change over time in a dynamic and complex system of social relations and intervening factors that influence them. Conflicts become problematic when disputes are not resolved in a peaceful way, but escalate into oppression, intimidation or violence. Such escalation tends to happen in phases and cycles in which functional social relations and trust make place for grievances, positions and stereotypes, accompanied with feelings of anger, grief and fear . Governance systems and socio-cultural systems have been established to prevent this from happening and to resolve conflicts peacefully. They provide a sense of justice (for example procedural and distributive) and legitimacy to decisions and make society resilient to stresses and tensions.

Peace, on the other hand, is a state in which people are anticipating and managing conflicts without violence. 'Without oppression' can be added, i.e. the absence of a 'cold conflict'. Ideally peace would mean that people are engaging in inclusive social change processes that improve quality of life, especially doing so without compromising the possibility of continuing to do so in the future, or the possibility of others to do so. This inclusive engagement is the idea of interdependent, positive peace (International Alert, 2017). Peaceful societies demonstrate a resilience to adapt, to change, to promote relationships that are mutually affirmative, and to value cooperation.

The action of peacebuilding requires the enhancement of constructive collaboration and trust among stakeholders, building societal resilience to address conflicts of interest in a peaceful way. Thus, solutions to societal problems can only be applied from within that society. By engaging stakeholders, preferably through a participatory and inclusive process, it is possible to:

- Ensure they feel their interests and perceptions are well understood and taken into account;

- Involve stakeholders, which will enhance ownership over and trust in the process and create transparency;
- Create a positive interaction, mutual understanding and a shared perspective and narrative among stakeholders, which will improve communication, cooperation and trust and build social cohesion;

To what extent this is possible and through what type of (facilitated) process depends very much on the level of escalation of a conflict, as well as on the social, political and cultural context and power relations.

External mediators or facilitators can support dialogue processes with the aim to support actors in resolving their conflicts through peaceful interaction and to build constructive social relations by creating a safe environment for dialogue. In addition, scientific information can support dialogues when stakeholders have opposing perceptions of situations and require independent research to debunk misinformation and myths or when they need to assess the feasibility and effectiveness of potential solutions for their concerns and needs. External support must always be independent, neutral and trusted by all parties.

About water

Water systems are increasingly recognized as coupled with societies. This has two implications:

1. various stakeholder groups need to be represented in discussions and decision-making on water management, and
2. interactions and behaviour in the biophysical system, between biophysical systems and society, and between various societal actors are complex, and not easily understood without analysis.

Integrated Water Resources Management and Planning, divides the water system in the natural resources system, the socio-economic system and the administrative and institutional system (Loucks, 2017). This division in subsystems allows for these complex interactions and the identification of relevant stakeholder groups to be analysed effectively , by including them in a comprehensive system analysis.

Although water is essential for society, it can also be a source of disasters. On the one hand, sufficient water of sufficient quality for different water users (communities and productive sectors) sustains ecosystems, economic production process and provides water for drinking and sanitation, as such contributing to livelihoods and well-being of people.
On the other hand, flooding resulting from (temporarily) too much water, may present a threat to lives, to livestock and to assets.

Changes in water systems for example in river flow or precipitation, or due to human interventions and use, often result in changes in how water is distributed and available to the various water users in that basin. This distribution may be perceived as unequal or unfair by those negatively affected and can lead to grievances if these changes are blamed on the actions (or inaction) of authorities, companies or other actors or communities. This risk is higher when the impacts are linked to specific interventions in the water cycle that were not based on prior agreements nor accompanied by adequate compensation or mitigation measures.

Water-related conflict

Changes in water security, as a result of changes in water systems or in (social or economic) access to water may impact livelihoods, health, economies, food security, energy production, etc., either direct or indirect, potentially contributing to conflict risk. Competing claims over (scarce) water resources may also directly create social tensions between different water users and thus compromise human security.

The extent to which changes in water security (in combination with other developments) impact human security, depends on the intensity of the water stress, on the resilience of ecosystems, of affected groups and of societies and economies at large – i.e. their ability to cope - and on the responses by stakeholders, such as communities,

authorities and other institutions or actors to (timely) address the water stress and its impact. This resilience of people, ecosystems and societies is determined by a complexity of many intervening factors, such as their dependence on water, the absorption and restorative capacity of ecosystems, potential alternative sources of income, the level of social cohesion (or fragility), water and food buffers available, governance systems, etc. The capacity of the state or other actors to respond in a timely and effective way to the crisis can also be seen as part of this resilience.

Affected people, communities and a society at large will respond to reduced water security by applying coping strategies. Important factors to determine how people will react – their so-called 'human responses' - are the impact this water stress has on them and the options available to them to cope and adjust to these stresses. In addition, their responses are determined by their perceptions and feelings about the situation (their level of trust, solidarity or grievances), which relates to what they value, who they blame for certain problems and who they perceive to be their ally. It is also determined by how they assess their own capacity and options and the capacity of others to cope or help. This is not a rational process. It depends on (filtered) information and a wide variety of assumptions and perceptions, culture, roles and experiences. These are influenced by the responses of authorities, other people, institutions and groups, including (in) formal leaders and (social) media.

The combined human responses (and the reactions to these responses by others) will determine the collective impact on social stability and national or even international security. These links between water, human security and stability and security are visualized in Figure 3.

These interactions happen at different levels at the same time and have feedback loops, as they influence each other in vicious or virtuous cycles. This makes the water-security interactions a very complex and dynamic system. WPS therefore also uses a system approach in analysing and describing water and security dynamics in specific local contexts.

This complexity also allows for many opportunities to influence each of the intervening factors within the system. For instance: one can

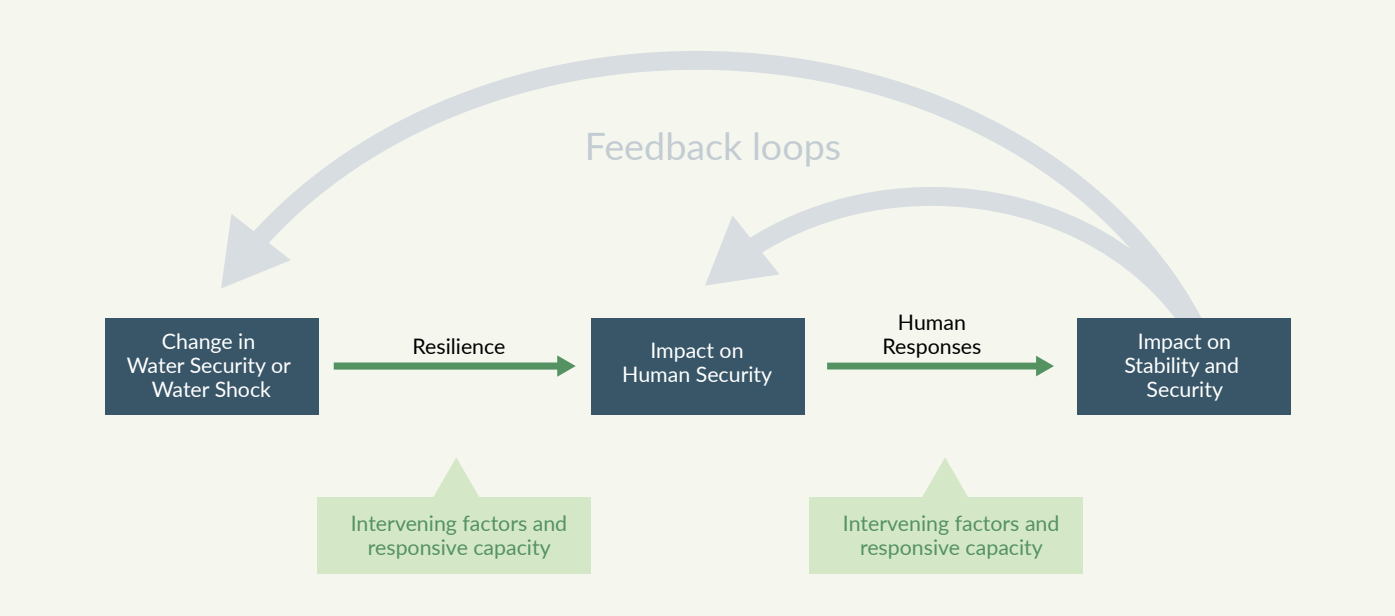

Figure 3 Water – Security linkages

influence the water stress and their impact, but also the resilience of people and societies to cope, the responses by institutions and the perceptions, feelings and understanding of those involved. Enhancing the understanding of the relevant intervening factors and interdependencies between water and security may help to guide positive change. It may also help to debunk myths or perceptions that can undermine social relations or reinforce unsustainable interventions. Science, such as analysing these interactions through a systems approach, can contribute to this understanding and, if trusted, can clarify perceptions on what is happening and assess what positive or negative impacts potential interventions could have. As a result, this could support effective responses.

Conflict sensitive water resources management thus asks for insights in how impacts are distributed over different societal groups, and how this may create or exacerbate tensions between groups. It also asks for involvement of the various stakeholders, to allow them to explain their interests and express their concerns, to jointly develop an understanding of the functioning of the water system and jointly develop a conflict-sensitive water management strategy.

This means that for effective conflict sensitive water resources management or peace-building efforts, the following elements are important:

1. All relevant stakeholders, including representatives from affected communities and community groups are actively engaged in a process of joint planning and are supported to improve their collaborative capacity
2. Those concerned about or intending to intervene in a basin have adequate understanding on how the water security of various other stakeholders may change as a result of interventions or changes in the basin, linked to (depending on the issues raised by stakeholders) factors such as climate change impacts, increased water abstractions, pollution or water management interventions (such as new infrastructure).

The WPS approach: the need for integrated, inclusive and informed processes through a systems approach

The WPS approach is developed to address direct and indirect tensions over water or to address water as one of the underlying factors in a conflict from various ends of the spectrum, by combining knowledge and methods from both water governance/management and peace-building/conflict resolution. Both water governance and peacebuilding require the involvement of stakeholders in a participatory process.

In the end, participatory processes should have two outcomes:

1. Create functional governance systems and (re)build trust among stakeholders to collaborate and resolve disagreements in a peaceful and adequate manner
2. To come to agreed solutions or interventions to the material issues at stake, such as water related problems that undermine human security.

If there is a conflict, both outcomes are important, and the level of escalation will determine how stakeholders can be engaged in a process. In escalated conflicts and a context of grossly unequal power relations, possibly even physical threat, it may not be realistic or safe for stakeholders to directly meet and discuss, requiring external (mediation) support processes and tools to establish and enhance dialogue.

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Depending on the water-security issue, it may be necessary to involve actors at different levels and scopes: the stakeholder groups involved in a conflict (i.e. communities, (sub-)national governments), the formal authorities from sectors involved in water management, water users/ economic sectors, civil protection and other relevant stakeholders that have a stake in or have influence on the issue and social relations, such as private sector actors and investors, informal leaders, NGOs, etc. It is relevant to develop a (preferably shared) understanding of the key dynamics around water, security and the role of various other factors (social, economic, institutional, cultural), independent on the water-security action perspectives of Figure 2. In addition, it is important to provide accessible and understandable information on the interconnectedness of the water and societal systems, how this will be influenced by future developments and interventions, and how this affects the various stakeholders and parties in the conflict. This may require data, analysis and modelling, to respond to information needs from stakeholders, identifying underlying causes of experienced impacts, and identifying ways forward that can be acceptable to all.

This brings us to the following elements that are key to addressing water-security challenges:

- Multi-stakeholder
- Multi-sectoral
- Multi-level
- Knowledge and information: to base system perceptions on evidence, fill-in gaps or debunk misconceptions, and assess impacts of future changes
- Identifying solutions that take different interests into account

To address water-security challenges it is important to adopt an inclusive and integrated approach together with community representatives, in which actors from various sectors jointly develop an understanding of the connected water-human security conflict nexus. Through an informed process in which people build on their relations and gain trust, while jointly developing their understanding of this system and jointly identifying ways forward.

The WPS Approach

The WPS Approach consists of several elements.

1. joint understanding of the water-society links
2. the analysis of potential solutions
3. the selection of solution with the highest potential and
4. support towards agreed action planning.

These elements are all embedded in the joint engagement process. This is a jointly set-up process in which qualitative and quantitative data and information are enriched by and used in exchanges between all stakeholders involved during activities such as workshops, trainings, conversations and dialogue. It is key in obtaining the results aimed for. Such participatory engagement and analysis, allow for all the above-mentioned elements to be integrated in the approach and to facilitate the necessary exchange between them, for this joint identification of solution within each specific context. The process of this WPS approach is iterative and has feedback loops between the different elements. The focus and process may differ per case, depending on local needs and abilities.

Figure 4 Several types of analysis that are combined throughout the integrated WPS approach

The participatory engagement process in Iraq started off with a smaller group of governmental actors of national level. With this group a joint system analysis towards a shared understanding of the water security linkages was executed. On the basis of this joint system understanding with this smaller group, key factors were identified that should be taken into account when analysing intervention options. These key factors lay mainly within the mandate of this smaller group, but an awareness was raised that participation of other stakeholders is needed when analysing the impact of possible interventions on broader society. Therefore, additional stakeholders on governorate and community level will be involved in the further engagement process. This, to ensure the inclusion of experienced impact on different levels by different groups, and the facilitation of inclusive, integrated and informed action planning on these levels.

Textbox 1 Inclusive Stakeholder engagement in WPS Iraq

Developing a shared understanding of water-society links and how to influence them

The current WPS approach starts with a joint analysis of the connected water-security system as this is crucial for the understanding of water-related conflict dynamics. Ultimately, a shared understanding of these dynamics can result in the identification of shared solutions. A joint qualitative analysis by the stakeholders involved forms a logical starting point, to understand how they see the system and the links between various factors.

Such an analysis can be done in various ways. It is important that:

- the analysis focuses on the identification of causes and effects of changes in water systems and related ecosystems and how different stakeholder groups, especially water users and users of ecosystem services are affected by these changes. To understand potential social tensions and human responses, it is also crucial to understand how stakeholders perceive these changes, their causes and their impacts and the coping strategies they deploy in response.
- power dynamics and social inclusion are considered in the engagement process. This is essential for a social inclusive analysis and for facilitating social inclusive outcomes (see Textbox 1.
- depending on the context, it is made possible for affected groups and stakeholders to discuss water related societal impacts directly together (as needed moderated by independent external mediators). If this is possible, this is most effective to enhance their understanding of each other's' situation, empower them to collaborate together, which can lead to a shared understanding of the problems and potential solutions. In an escalated and unsafe context, such direct discussions may not be possible and a 'shuttle diplomacy' process may be more appropriate, in which conflict

In Mali, we asked stakeholders to identify possible responses to reduced availability of ecosystem services in the Inner Niger Delta (continuation of current livelihood activities, migration, illegal or violent responses and joining extremist groups). We then asked them to identify economic, institutional, cultural, environmental and social factors that influenced the choice for certain options. From this joint analysis, an image emerged of how these factors influence each other in an interconnected system. Although this diagram as a result of a half-day session by no means does justice to the full complexity of the conflicts and violence in the Inner Niger Delta, it clarifies the perceptions and system view shared between the participants of the session. The diagram can be further built upon to expand or refine the causal loop diagram, and to identify the main factors of interest to different stakeholders, as well as those factors that could be changed most effectively to influence these factors of interest.

Textbox 2 Example of joint analysis of water-security linkages by Malian stakeholders

parties are consulted and informed about each other's opinions, interests and needs, but do not physically meet each other. Often, discussions will take place through meetings of selected representatives.
- the analysis consists of a series of interactions, alternating data collection and (participatory/joint) analysis, to move from understanding of water-security interactions, to identifying and assessing and prioritising possible actions to influence water-related security.
- in-depth expertise on the hydrological system and ecosystem as well as on conflict dynamics and governance is available to verify or falsify assumptions, fill knowledge gaps and inform stakeholders of the effectiveness of proposed actions.

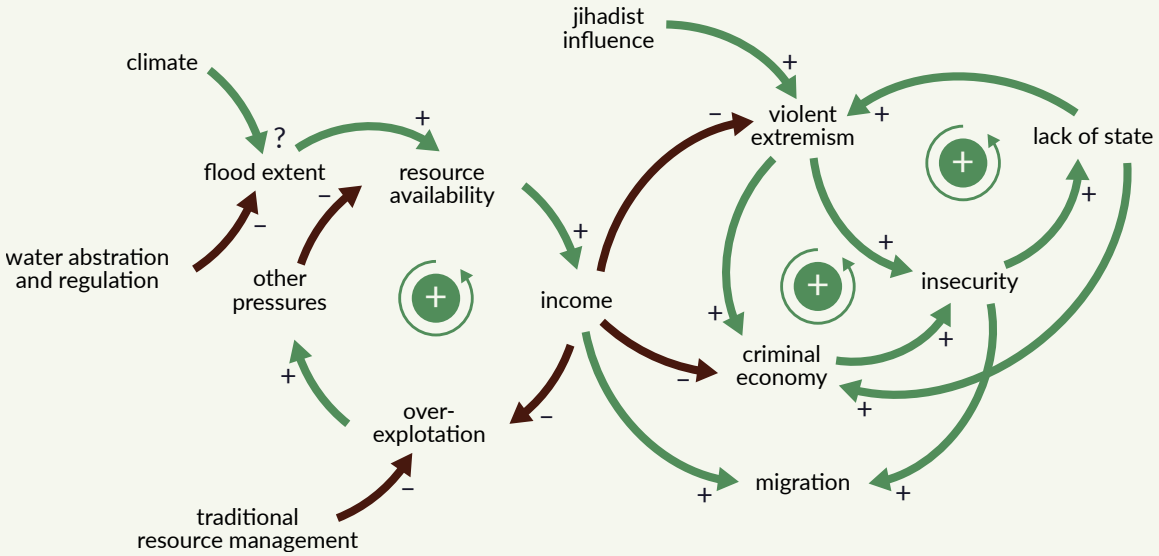

Figure 6 Causal Loop Diagram as developed within WPS Mali

In this causal loop diagram two positive feedback loops can be identified:

1. *resource-income loop, in which reductions in resource availability result in reduced income, which lead to over-exploitation and further reductions in resource availability, and*
2. *an impunity-insecurity loop, where increased insecurity, resulted in drawing back of the state, giving way to more violent and criminal behavior, while also allowing jihadist groups to gain ground as alternative government. Leverage points/actions could for example be: preventing resource over-exploitation through compensation of losses in dry years, reinstating the rule of law, or managing upstream water resources to maintain a natural flow dynamic that supports ecosystem services and livelihoods. Most likely, a combination of these different types of measures may be required to achieve the desired impact. Which implies actions from and coordination between multiple sectors: water management, social security, civil security and protection.*

The joint development of a causal loop diagram can be done following the method of 'Group Model Building' developed by (Vennix, 1999).

- the evaluation of actions also considers the local institutional system in place, to evaluate whether there is an enabling environment for the implementation of these actions.

The following figure illustrates how information collection and expert analysis is enriched through the joint analysis with identified stakeholder groups and vice versa. This analysis is focused on expressed information needs and contributes to shared insights in system functioning. This feedback loop takes place throughout the execution of the different activities of the engagement process resulting in input for an informed joint action plan.

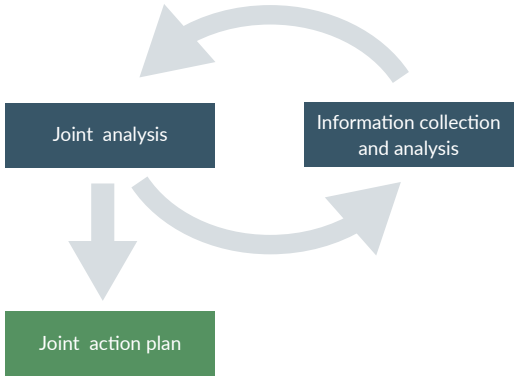

Figure 5 Feedback loop between joint and expert analysis towards the formulation of a joint action plan

In our activities in Mali, 'Group Model Building' was used as a method to jointly identify the interactions between various system factors that included ecosystem functioning, livelihoods, governance, conflicts, violence and displacement (see Box 1). Seeing the causal links between environmental, economic, social, cultural and institutional factors represented in a diagram, supported stakeholders in identifying the factors that can be altered to steer the factors of their interest. Especially positive (in the sense that an increase in one factor results in an increase in another factor) feedback loops, that lead to a vicious cycle of resource depletion and insecurity are important to visualise. In order to identify solutions, one could identify measures that could break the loop, through influencing factor within the loop. Also factors that have a large leverage impact could be important to influence. Such a causal loop diagram allows for a constructive discussion to identify the main leverage points, identify actions, and, very important, identify the actors who possess the resources (mandate, financial means, network) to realize these actions.

From creating an understanding to identifying potential solutions

The joint analysis is intended to create a shared understanding not only of how the system works, but also of how to influence the system. In addition, it can create a better understanding of the interests and needs of the different stakeholders in the system and where and when these collide or converge. It is best for these stakeholders to explore and express these interests and needs themselves, both because they are the best experts on their own interests and needs and to empower them to analyse, express and negotiate about these interests. This can help to set the boundary requirements for solutions to issues, as they need to equally respect the interests and needs of different groups. Hence trade-offs can be made transparent and negotiated.

After the water issues, their root causes and physical as well as social and economic impacts are clarified and the interests and needs of different stakeholders are clear, it is possible to move to identifying potential solutions (Fisher, 1991). This is best done through a wide brainstorm of possible solutions. Encouraging stakeholders to first – through a creative process – identify a wide range of optional solutions to their concerns provides more space for negotiations, trade-offs and innovative solutions, instead of when people immediately jump to one solution. The identification of potential solutions should also be fed by actions already in place though existing policy and programs.

It is most effective to do this through shared discussions, to enhance mutual understanding, trust and communication/collaboration skills. If this is not possible, it can be done through separate discussions with different stakeholder groups. When stakeholders themselves identify actions, and can relate to ongoing policy development and implementation, this can contribute to ownership and implementation. This ownership is crucial as it enhances trust in and support to the actions suggested. Also, when certain actions are already formulated in existing policy or programs, their execution, potential expansion or possible specification will be facilitated since they are already embedded within the institutional setting.

Analysing, selecting and negotiating the best options for solutions

After a wide and creative list of potential solutions is on the table, these potential solutions can be assessed for feasibility, effectiveness and impact on the different (needs and interests of) stakeholders. Best are solutions that have a sustainable positive impact on the water issues and that respect the interests and needs of all stakeholder groups (as needed by applying trade-offs and compensation of loss). It will be crucial to identify actions in connection with ongoing and planned policies – a small change to something already underway, may be more effective then proposing something fully new. The WPS approach should not be a stand-alone activity isolated from daily policy practice in the countries in which we engage.

A longer and iterative involvement process - in which each new meeting builds on the previous one - will help to internalize new insights in the ways of thinking and working of the participants.

The joint analysis can therefore be seen as a starting point for other activities:

1. Information collection and analysis – the analysis may point out knowledge gaps that can be filled by collection of existing data and information or by new research, which will then be demand-driven
2. Mobilization of appropriate action – the insights obtained in what actions are effective and feasible is important to mobilize the support and resources for implementation. The analysis can also make water and conflict risks clear and thus stress the urgency to take positive action. In this way the analysis can lead to policy advice and evidence for advocacy and awareness raising to mobilize action and overcome political inertia.
3. Capacity development – stakeholders may identify areas in which they would like to get a deeper understanding and enhance their capacities – for example on water governance, on peacebuilding, on tool-supported decision-making. This can be provided through training and other capacity building activities.

The WPS approach can support future action, possible agreements on collaboration, designing plans, mobilizing resources and support, etc.

The above approach is meant to bring stakeholders together to identify sustainable solutions to the issues they face. This can result in agreements: on actions to take by the stakeholders themselves (to change behaviour, share resources, enhance collaboration) or to undertake projects or interventions. It is also possible to use outcomes of these discussions to influence and adjust existing investment plans.

Activities such as joint water-security analysis are not only important from an analytical/content point of view, but also contribute to building relations and trust. Sharing mental models on system links and interactions increases mutual understanding and respect for the perceptions of others. This can be discussed taking different perceptions and interests into account, by focusing on how certain changes and actions result in other

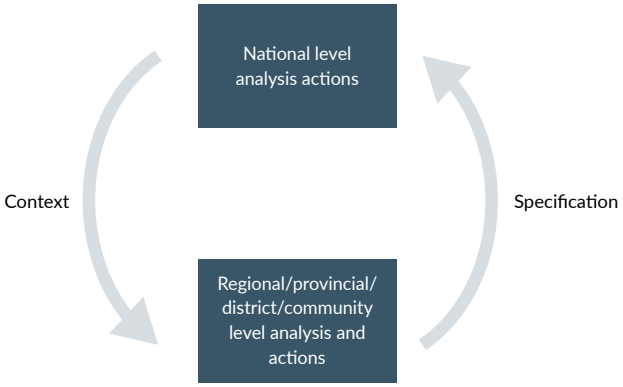

Figure 7 Visualisation of how different levels of governance are connected within the WPS approach

changes and reactions. In an escalated context, a mediation approach can be used to channel the expression of grievances and blame, in order to enhance mutual understanding and to clarify underlying emotions and interests that are crucial for a sustainable solution. Such methods can therefore be a constructive way to engage stakeholders in moving forward in their discussions.

Power dynamics
It is important to pay due attention to power/ group dynamics and security concerns – do parties feel safe and comfortable working together, is it clear what they are working towards, and what are the rules of engagement and joint work? These are aspects that are important to explicitly address. Different social groups should be able to contribute their perspective on the system and potential solutions in the engagement process.

Connecting different governance levels
It is possible that factors and actions at different levels play a role in influencing water-related conflict risks. For example, decisions on water allocation on a national level could have an impact on the resource availability in a specific region, conflict risk in this region may increase. Although

In Mali, we engage with stakeholders at national, regional and community level. Multi-stakeholder workshops with representatives from government authorities and civil society from national and regions create awareness of links between water and security, and the positive and negative impacts government action can have. Community dialogue fora bring stakeholders at community level, those directly involved in or impacted by the conflicts, together to discuss causes and possible solutions. The national level analysis provides context for the community level discussions, the insights from community dialogues provide an important contribution to creating an improved understanding at the national level of water-conflict links.

Textbox 3. Example of connecting different government levels in Mali

stakeholder engagement at these two levels may largely be separate, connections should be made where needed. For example, an assessment at national or river basin level on the impacts of climate change and water management can provide the context for the identification of solutions at community level. At the same time, insights at community level on causes of conflicts and ways to address these could form important input for discussion at national level to make water management conflict sensitive.

Conclusion

Addressing water-related conflicts, either from a water management or peace-building action perspective, requires bringing the stakeholders and their perspectives together, and take them along in a joint analysis of water-security risks, the interlinkages between contributing factors and in the identification of possible options for solutions or mitigating action. Technical information and (data-driven) analysis can be used to support this analysis in two ways:

First as a methodology to engage stakeholders and bring them together in the process of joint analysis through a facilitated – or if needed mediated - process that is intended to improve mutual understanding and enhance capacities, ownership and collaboration. In this process, system dynamics, conflict dynamics and perceptions of water-related security risks can be identified and resolved, and stakeholders can reach agreements on actions to be taken.

Second by supporting stakeholders with expert information on technical issues, root causes, scenario's, dynamics and options available to address these issues. A requirement to do this successfully is that information provided clearly connects to the analysis done by the stakeholders and is useful for and trusted by them.

A multi-sectoral and multi-stakeholder response is required to turn the vicious cycles of water and conflict into virtuous cycles of water and cooperation, for three reasons: because both water management and peace building require different stakeholders to collaborate; because the issues at stake cover multiple sectors and areas of expertise; and because effective action at scale needs scientists, practitioners, decision makers and communicators from different disciplines and backgrounds to work in partnership.

The WPS partnership brings together this multi-sectoral and multi-disciplinary approach, within the partnership. WPS mobilizes stakeholders, engaging them in dialogues, and increasing understanding by those involved and affected, through joint analysis, awareness raising and capacity development activities. This approach has to be truly integrated to combine expertise from different sectors and engage multiple stakeholders in a locally contextualised response.

We see this approach as an effective way to support stakeholders to constructively discuss water-security links, debunk misconceptions and agree on solutions in an integrated, inclusive and informed manner. At the same time, it can make water related security risks visible, which can support advocacy efforts to demand timely and effective action.

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