

Towards a Better Understanding of Climate Security Practices

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Planetary Security
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Executive summary

The policy debate on climate security in the past 20 years has evolved from recognising climate change as threat multiplier or security risk and understanding the pathways through which this relationship occurs to assessing such security risks in specific regions and countries, also in terms of early warning. However, markedly less attention has been paid to considering how we can reduce adverse security impacts in climate security practice. This practice is only slowly emerging and its progress is hampered by the still intensely debated issue of how and where climate change and security are related.

In this report a plea is made to switch attention more to the practical side of climate security and see what we can learn from it in order to capitalise on the promise it holds. Even if we do not know the full details of how the relationships unfold, the high number of unstable regions which are climate-vulnerable makes it vital that the development, diplomatic and defence communities begin to work on climate security and start assessing the benefits of that work. How can climate interventions contribute to peace and stability, and what can conflict prevention and peacebuilding efforts gain from being more sensitive to climate impacts? How can we justify initiating new climate security practices and developing them to scale?

This report reviews and reflects on existing practices in the emerging field of climate security. An understanding of how to act on the climate security nexus is slowly developing. Climate security practices are here defined as tangible actions implemented by a (local or central) government, organisation, community, private actor or individual to help prevent, reduce, mitigate or adapt (to) security risks and threats related to impacts of climate change and related environmental degradation, as well as subsequent policies. Practices aim to operationalise climate security objectives, from either institutional or non-governmental sources. Climate security practices do not specifically include governmental decision-making processes, mechanisms, risk assessments and strategies, but are activities implemented on the ground.

In this report, we review and draw lessons from and reflect on practices that enhance peace and stability. Many peacebuilding interventions address a range of conflict and insecurity drivers, acknowledging the complex impact of climate change on natural resources, livelihoods and (human) security. Examples include tree-planting projects, the inclusion of natural resource distribution measures in peace treaties, and provision of renewables in refugee camps and military missions.

This report aims to provide a noncomprehensive overview of climate security practices implemented on the ground, in order to gain some understanding of what is being done and what can be learned from these practices. It is the first overview of its kind to reflect on a larger collection of climate security practices implemented by actors from the realms of development, diplomacy and defence. It covers practices found in the field of human security, as well as hard security, as part of our broader understanding of security impacts related to climate change. An overview of the full collection can be found at www.planetarysecurityinitiative.org and will be updated with new practices.

The Climate-Security-Triangle, an explanatory model introduced in this report, helps to map climate security practices on a spectrum along more climate-driven and more security-driven practices. It includes an assessment of the (potential) impact of the practices. The practices mapped in the triangle indicate that many practices implicitly integrate both security and climate in their work, whereas only a few projects explicitly integrate the two fields. Generally practices have additional objectives, and climate security can both be direct and interrelate with other drivers of conflict and insecurity. We aim to highlight the climate security nexus apparent in the practices and consider this report as a first step in drawing lessons on how to consider their impact. To what extent can they be considered a success, what works best and how do climate security practices compare to other peace and security practices? Given the limited number of practices and the difficulty in proving their impact, it is too early yet to answer these questions, but our effort aims to contribute to the ability to do so in the (near) future.

Findings

Practices reviewed in this report can generally be divided between macro-level and micro-level initiatives. Macro-level practices, such as 'greening the Sahel', involve actions that aim to enhance climate security on a larger scale and are often proposed and designed by actors that are not the direct beneficiaries of the practices. Challenges related to such practices rise from their less concrete goals and the difficulty in measuring impact. Nevertheless, they have the potential to generate a considerable impact on peace and stability.

Micro-level practices, in contrast, often represent interventions in a specific local context, focused on (the impact of climate change on) local dynamics of livelihood security, food security and their impact on overall physical and human security. These projects mostly directly include the beneficiaries of the practices in the project design and implementation, which offers valuable insights into the needs and wishes of the beneficiaries. However, the short time scale of some micro-level projects can prove challenging, as climate change impacts tend to manifest themselves over a longer period of time, with the exception of extreme weather events such as floods and hurricanes.

Moreover, it can be a challenge to initiate bottom-up practices in insecure political and social contexts where the climate security interface is often most relevant. Additionally, some activities can only be undertaken behind closed doors, due to political sensitivities. Because of the small scale of these projects and the limited information available on them, it is often difficult to assess their contribution to conflict prevention and peacebuilding. We notice, though, that there is more scope to copy approaches in similar contexts and scale up projects that arrive at promising outcomes.

Recommendations

As a result of the research findings, this report includes seven recommendations:

1. All actors should, whenever appropriate, report more transparently and systematically on the progress, pitfalls and success of their climate security practices. In particular, indicators of climate security impact, lessons learned and key achievements should be reported more regularly. In this way, the community of practice can leverage the climate security nexus to promote peace and stability more effectively.
2. Actors in development, diplomacy and defence should work together on building climate security and learn from each other's practices to understand which initiatives work or do not work in specific contexts.
3. Military missions by the UN and EU could more often consider supporting and facilitating efforts by civilian actors to engage in environmental peacebuilding, climate adaptation and mitigation projects. They could help to ensure a safe(r) operating space for humanitarian aid workers aiming to address the climate security nexus on the ground. Short-term projects should consider and plan for how the initiative could enhance climate security after its termination.
4. Policy makers and practitioners should focus on the bigger picture to recognise positive contributions to peace and security, as it is often not possible to specifically measure this in exact or quantitative indicators.
5. Resources for activities aimed at fostering peace and stability through climate-related interventions cannot easily be linked to results-based indicators. Actors engaged in the climate security field should accept higher risks of project failure, alternative result indicators, and potentially reduced effectiveness due to an unstable working environment.
6. In order to improve the effectiveness (and prevent negative outcomes) of climate security interventions, the contributions to both climate change and security policy objectives should be made explicit, monitored and evaluated. This may require innovations in monitoring and evaluation methodologies, and a (temporary) acceptance of higher risk levels to facilitate learning.
7. Security actors should more often consider climate adaptation as an entry point for their work on patterns of governance failure, inequality and marginalisation that drive conflict.

1 Introduction: the climate change threat

Unprecedented fires in Australia, on the west coast of the United States, in the Amazon rainforest and in Siberia have destroyed millions of hectares of forests and biodiversity, and displaced large numbers of people. The fires have also threatened military bases in the United States and defence infrastructure in Siberia built on the now melting permafrost. East African countries such as Somalia, Sudan and South Sudan have been affected by long droughts followed by unprecedented heavy rainfall, displacing people and destroying livelihoods. Floods are also increasingly affecting farmers in Southeast Asia.

Climate change is already affecting lives and is increasingly considered a threat to people's livelihoods, nations and the international order. Although the debate about the precise link between climate change and security matters continues, it is generally accepted that climate change impacts can affect security risks.¹ The ultimate form of insecurity – violent conflict – is a multi-dimensional phenomenon in which many drivers may combine in varying ways to raise tensions to a breaking point. In some cases, climate change impacts such as sea-level rise, extreme weather events and rising temperatures can act as threat multipliers, aggravating a number of factors driving conflict and security risks. For instance, by exacerbating existing pressures on natural resources, food security and/or livelihoods, climate change impacts may amplify various patterns of inequality, weaken the legitimacy of ruling authorities or raise intergroup tensions, any of which might be important drivers of conflict in a given location.² Climate change impacts can moreover affect people's resilience and vulnerability, including their food security, environmental security and personal security. Although

1 Climate change is considered a security risk by the Secretary-General to the United Nations, António Guterres, and climate security is increasingly acknowledged to be a contributing driver of insecurity by the United Nations Security Council. Several region-specific UNSC resolutions emphasise the adverse effects of climate change and request the inclusion of climate security considerations into peacekeeping and peacebuilding missions.

2 See among others: Hans G. Brauch & Jürgen Scheffran (2012). 'Introduction: climate change, human security and violent conflict in the Anthropocene', in: *Climate Change, Human Security and Violent Conflict*, by Jürgen Scheffran et al., Berlin Heidelberg: Springer, 3-40; Jon Barnett, (2016). 'Environmental security', in: *Contemporary Security Studies*, ed. Collins, A., Oxford University Press, 229-246; Mohamed Behnassi & Katriona McGlade (2017). 'Environmental Change and Human Security in Africa and the Middle East', Springer International Publishing.

climate change risks do not necessarily translate into conflict, they can nevertheless pose a serious threat to individuals' wellbeing and aggravate societal tensions.

Measures addressing complex climate security risks are being implemented in an increasingly broad range of fields, for example peacebuilding, mediation, disaster preparedness and response, and climate adaptation and mitigation. Sometimes, climate and environmental measures are part of a more comprehensive effort to promote peace and stability. Other times, purely environmental measures may contribute to reducing tensions in a fragile situation, thus indirectly contributing to peace and stability without this being the activity's main objective. The interaction between climate and security is, however, rarely addressed purposefully and explicitly, making it difficult to pinpoint exactly what is being done in this field and which actors and sectors are involved. In explicitly mentioned cases, few monitoring and evaluation results have been published, leaving the effectiveness and efficiency of implemented approaches unclear.³ Additionally, measures such as dialogue over natural resource governance can be part of behind-closed-doors peacebuilding processes, meaning little or no information is available, let alone about the effectiveness of using climate change or natural resources as an entry point for mediation.

1.1 Objective of the report

The objective of this report is to present examples of climate security practices that address both climate change and security in order to take a step towards creating a better understanding of the broad range of current practices in this field. While other efforts at mapping best practices in the climate security field have generally focused on the development sector,⁴ this report also includes practices in the diplomacy and defence sectors. Through analysis and reflection, this report indicates what lessons can be learned from the different practices, and provides recommendations based on insights from these projects.

1.2 Methodology

The research is based on years of continuous work by the Planetary Security Initiative (PSI) in the field of climate security. PSI aims to catalyse climate security action through its function as a knowledge hub and by contributing to the field of climate security with policy-relevant information, (coverage of) analysis and action. Through networks, bilateral meetings and high-level events with relevant actors from academia,

3 Mercy Corps. (2020). 'Climate Change and Conflict: Lessons from emerging practice.'

4 See for example: Mercy Corps. (2020). 'Climate Change and Conflict: Lessons from emerging practice.'

non-governmental organisations (NGOs), regional and international organisations and decision makers,⁵ PSI has developed a knowledge base about different efforts to enhance climate security across sectors of development, defence and diplomacy.

Practices were selected from a large pool of projects that PSI discovered as a result of its work in the climate security field over the last years through research, the abovementioned networks, events and bilateral meetings. The inventory is complemented by open-source research into climate security practices. Climate security practices examined may include practices that affect security or climate implicitly, without that being the main objective. Hence, a broad range of climate security practices are incorporated, including initiatives of development organisations, classic defence actors such as the military, and international and regional diplomatic circles. Moreover, both macro level and micro, or local, level initiatives are included.

The projects were analysed along four parameters:

- the *entry point* of the practice, for example climate- or security-driven
- the *type of intervention*, for example financial, technical, military, agricultural, dialogue, political or knowledge sharing⁶
- the *actors* implementing projects, for example military, international organisations, state-central, NGO⁷
- the *projected* and *actual impact* of the project.⁸

The analysis reveals that each of the practices is located at a different point on the climate security spectrum, as the drivers of the practice (climate, security or both) as well as the (potential) impact of each practice differs greatly. A visualisation of the placement of the practices on the climate security spectrum is therefore provided in the form of the Climate Security Triangle (see section 5).

The cases selected for this report are projects that have been or are currently being implemented, rather than recommendations for action or programmes to be implemented. However, only case studies on which information is publicly available are included. In some cases, discussions on natural resource distribution and climate change as part of mediation or peacebuilding efforts are (politically) sensitive and not

5 Including United Nations Environment Programme (UNEP), European Union External Action Service (EEAS), Consultative Group on International Agricultural Research (CGIAR), monthly meetings with the Environment, Climate, Conflict Partnership, and the International Military Council on Climate and Security consortium, among others.

6 See table 3 in section 4.

7 See table 2 in section 4.

8 See the table in annex 1 for a schematic overview of the practices included in this report, their goals and successes.

publicly disclosed. Although these implementation criteria and availability, or not, of public information reduce the number of practices available for review, it enables a more systematic approach to analyse these practices.

While it makes sense to first make a decent analysis of how climate change and insecurity are related before considering a climate security practice, making a risk assessment or analysis as such is not considered 'good practice' or 'best practice'. Realising the existence and severity of climate-induced security threats does not necessarily and automatically translate into practice. Indeed, our impression is that it very often stops there, despite much of the analysis making it clear that action is badly needed. Therefore, we have decided not to refer to analysis as a 'practice'. For similar reasons we do not refer to 'good' or 'best' practices, as it is often not yet clear what works and what does not.⁹

1.3 Structure of the report

The following section presents a short outline of the connection between climate change and security. Section 3 then sets out our understanding of climate security practices. Section 4 presents the challenges of assessing practices in the field of climate security. Section 5 introduces an explanatory model, the Climate-Security-Triangle, a tool to systematically map these practices. Section 6 presents an overview of eight climate security practices. In section 7, the presented climate security practices are mapped in the Climate-Security-Triangle. In addition, the report provides a reflection on initiatives not included in the study but which are presented in our larger collection of climate security practices at www.planetarysecurityinitiative.org. Section 8 concludes this report and lists recommendations.

⁹ This report avoids the frequently used terms of 'best practices' or 'good practices', so as not to attach a certain value of what is a good, best, bad or even worst practice. There is a tendency for actors in the field to frame their practice as 'best' practice, simply because it has been implemented. As climate security practices often manifest in the future, due to the temporal and spatial scales of climate change impacts, adaptation and mitigation measures it is not possible to determine what is good or best. Moreover, this value is dependent on the context. Instead of 'ranking' climate security practices into good, best, bad or worst, this report mostly refers to them as mere practices. The projects presented here can be considered rather as 'positive' examples, as the report sketches a general overview of what kind of climate security practices exist and what the community can learn from them.

2 Understanding the connection between climate and security

With sustainable peace, the safeguarding of development gains and the reduction of human suffering as the main goals of conflict (prevention) programmes, with sometimes a complementary dimension of climate adaptation practices, it is important to understand the role of security within the climate security nexus. Traditionally, security referred to national security, border control, military defence and issues of sovereignty. Over the last decades, security has gradually been extended to encompass a broader and more societal understanding of human security. In this sense, security is approached from a perspective that seeks to reduce a wide range of social, political, economic, environmental and physical threats to a person stemming from physical insecurity and governance failures. In the development sector this understanding is also captured under 'security & rule of law' as well as 'governance' programming. Security threats are therefore different from traditional (national) security threats. A broader understanding of security impacts – as applied in this report – covers the fields of both human security and hard security.

Climate-related security risks can manifest themselves when the impacts of climate change aggravate the drivers of violent conflict and insecurity.¹⁰ Although fragility and the potential for conflict is determined by a broad range of factors, climate change impacts may affect several of these factors. Climate change impacts may change the distribution of resources between groups, put additional pressure on poorly functioning governance arrangements, or reduce institutional legitimacy where agencies fail to implement climate adaptation measures. In this way, existing political structures may destabilise. Hence, while the exact relationship between climate change impacts and conflict is thus variable and debated, there is context-specific evidence that climate change can influence the drivers of conflict in some instances.¹¹ Practical examples include: relative changes between groups in income derived from natural resources straining governance arrangements and aggravating patterns of inequality; climate-

10 Hans G. Brauch & Jürgen Scheffran (2012). 'Introduction: climate change, human security and violent conflict in the Anthropocene', in: *Climate Change, Human Security and Violent Conflict*, by Jürgen Scheffran et al., Berlin Heidelberg: Springer, 3-40.

11 Karolina Eklow & Florian Kampe (October 2019). 'Climate-Related Security Risks and Peacebuilding in Somalia', Stockholm International Peace Research Institute.

induced displacement of people changing intergroup relations; or altered tactical considerations of armed groups capitalising on new grievances for recruitment.¹²

The conditions under which underlying fragility dynamics translate into (violent) conflict are complex, but perceptions of inequality or exclusion of certain groups relative to other groups can contribute to violence.¹³ The World Bank and the United Nations indicated four arenas in which exclusion has a high impact on livelihoods and inequality: 'Policy arenas related to access to political power and governance; land, water, and extractive resources; delivery of basic services; and justice and security.'¹⁴ In most cases state institutions play a role in providing services, managing grievances and governing (natural) resources. 'State actions that respond to the public's need for reduced climate vulnerability could [...] simultaneously reduce both climate risks and the legitimacy deficits that often contribute most heavily to fragility in these states.'¹⁵ Improvements in governance can be an influential factor in preventing an escalation of tensions into (violent) conflict. Similarly, effective and legitimate governance is a key aspect when climate change risks transform into societal tensions, hence the climate-induced changes can play a significant role in security issues.

12 Florian Krampe (June 2019). 'Climate Change, Peacebuilding and Sustaining Peace,' Stockholm International Peace Research Institute.

13 United Nations and World Bank (2018) 'Pathways for Peace: Inclusive Approaches to Preventing Violent Conflict'.

14 Ibid.

15 Steve Brock et al. (2020). 'The World Climate and Security Report 2020' product of the Expert Group of the International Military Council on Climate and Security, ed. Francesco Femia and Caitlin Werrell, The Center for Climate and Security.

3 What are climate security practices?

Climate security practices are defined by their aim to leverage climate change adaptation in order to address conflict drivers (or vice versa), for instance through bolstering livelihoods, improving resource governance, or addressing inequality or environmental degradation. These practices often have an implicit or explicit dimension aimed at peacebuilding or improving stability. Vice versa, practices in the realm of governance, peacebuilding, mediation and conflict prevention might have an implicit or explicit climate dimension. For example, peace agreements sometimes entail a section on the distribution of natural resources,¹⁶ in order to create a sustainable peace that will not immediately break down when climate change affects resource distribution between the different parties.

However, as climate change impacts and the factors driving conflict and fragility vary significantly by context, the nexus between the two may look different in different contexts (and at times may not exist). Moreover, little is known about how climate change and natural resource management activities compare to other conflict prevention and peacebuilding efforts, with regard to both effectiveness and costs. For instance, it is difficult to assess whether it is better to invest in security actors to prevent cattle raiding or to provide irrigation systems or climate-resilient seeds to farmers. Additionally, the motivations that drive people to support violent or extremist organisations may also play a significant role in the choice of particular practices.

A core of efforts usually referred to as good or best practices include resilience enhancing, preventive and integrative actions implemented in a conflict-sensitive manner (ensuring do-no-harm). Central to any climate practice is enhancement of community resilience against climate-related risks, as it enables people to sustain their livelihoods while ensuring a liveable future in their environment. Ideally, climate security measures are preventive, as reactive action is generally financially and socially more costly and devastating. Climate security measures should not have adverse

16 Daniëlla Dam-de Jong (August 2019). 'Building a sustainable peace: How peace processes shape and are shaped by the international legal framework for the governance of natural resources', Leiden University.

consequences, exacerbate inequalities or contribute to conflict. For example, practices should not heighten tensions among groups over access to natural resources.¹⁷

Ensuring such actions are implemented in a conflict-sensitive way is thus essential. Climate adaptation risks targeting specific groups rather than a balanced cross-section of society, as measures are likely targeted at either (a) the most at-risk groups, risks often caused by marginalisation or exclusion or (b) groups able to generate the best results, often groups that are socially and/or economically advantaged with strong representation in government. As such, working to strengthen the resilience of either group risks aggravating conflict drivers if the role of climate change impacts in conflict dynamics is not clearly understood and accounted for. Thus, in reality it is often difficult to identify where and when early action is needed, and it is frequently easier (but less effective) to unleash funds when a conflict situation or climate disaster has already erupted.

Constructing practices effectively is challenging. It is repeatedly stressed by researchers and policy makers that the design and implementation of climate security measures should integrate different sources of expertise, actors and (interested) stakeholders, while also accounting for other related issues and potential conflicts in the future. In reality this proves difficult as most organisations are frequently better suited to taking a more narrow approach. Addressing the long-term climatic drivers of inequality may be challenging when it is already proving difficult to achieve a peace deal, while climate adaptation measures are the most cost effective to implement in more stable areas with good access to government services. Yet, climate security practices are also necessary in conflict settings, even if that means countries or regions are unstable or governance is weak, and funders are possibly hesitant to invest. In fragile or conflict-affected contexts, for instance, investment in water infrastructures or climate smart agriculture might be difficult to achieve but can be crucial to establishing some form of stability.

In this report the following definition is developed. Climate security practices refers to tangible actions implemented by a (local or central) government, organisation, community, private actor or individual to help prevent, reduce, mitigate or adapt (to) security risks and threats related to impacts of climate change and related environmental degradation, as well as subsequent policies. Practices aim to operationalise climate security objectives, from either institutional or non-governmental sources. Climate security practices do not specifically include governmental decision-making processes, mechanisms, risk assessments and strategies, but are activities implemented on the ground.

17 For more information on the role of climate adaptation in reducing security risks, and how climate adaptation should be conflict sensitive, see: Louise Van Schaik, et al. (August 2019). 'Making Peace with Climate: Background Paper for the Global Commission on Adaptation', The Clingendael Institute.

4 Challenges of analysing climate security practices

Analysing good and best climate security practices faces a multitude of challenges. Six challenges are described below.

First, it is difficult to assess the **direct or indirect impacts** of climate-related practices and whether they are **deliberately or unintentionally** addressing climate security. A humanitarian, developmental or environmental intervention, for example, might have an implicit impact on conflict and security risks. Such positive side effects on conflict prevention, peace and stability are often not incorporated into these projects from the start, hence indicators for success are not included in project planning.

Second, it is difficult to assess the **effectiveness or impact of a climate security intervention**. It is seldomly possible to prove an intervention contributed to climate adaptation and peace and stability objectives. Partly, this is because the time span for the interventions is usually shorter than the time needed for environmental impacts to become manifest. Most importantly, causality is hard to establish and measure. It is often difficult to prove that a specific intervention, for example in the realm of natural resource management, climate adaptation or renewable energy provision, has prevented a conflict or contributed to peace, due to the complex operational and contextual circumstances.

In general it is difficult to prove the impact of peace and security interventions, as contextual and circumstantial factors affect their effectiveness. Nevertheless, it tends to be automatically assumed that interventions such as sending a military mission, strengthening rule of law or collecting combatants' weapons contribute to peacebuilding and stability. With regard to interventions to enhance resilience against adverse climate impacts or better manage natural resource scarcity, there is scepticism, particularly among security specialists, about the immediate contribution of such interventions to peace and stability. Vice versa, climate adaptation and mitigation specialists are usually also less at ease with stating the contribution to peace and stability of climate-related interventions. Benefits from climate interventions are easier to attribute to other metrics, such as food and water security, carbon removal, reduction of energy poverty, and provision of livelihoods.

Third, verifying the **various links between climate change and (in)security** poses another challenge in creating an understanding of good and best practices. As covered in section 2, the exact understanding of how climate change consequences lead to

conflict remains disputed and contextually variable, but there is consensus regarding the role of climate change as a threat multiplier. Because it is still disputed whether climate change impacts are direct drivers of conflict or indirect drivers that exacerbate other socioeconomic and political tensions over time, and which are most significant, it can be difficult to justify specific interventions with a specific theory of change.

Fourth, the impacts of climate change can unfold in various **complex** policy fields and sectors such as water, agriculture, food, land, trade, health and energy. It is therefore difficult to establish whether shortcomings are due to climate change. Often, climate change exacerbates issues of access to natural resources, food production and water availability, that were at first the result of poor management or governance and result in increasing tensions and insecurity. To mitigate this challenge, table 1 categorises the policy fields in which the case studies in this report are located, to enable a more systematic assessment of the case studies. This is not an exhaustive list of policy fields, and in some case studies the targeted policy fields overlap. For example, in the case of agroecological practices, the policy fields of agriculture, food and land are addressed.

Table 1

Fields/Topics				
(1) Water	(2) Agriculture	(3) Food	(4) Land	(5) Trade
(6) Energy	(7) Health	(8) Military	(9) Politics	(10) Diplomatic

Fifth, a wide **variety of interventions¹⁸ and actors** are active in the field of climate security (see table 2 and table 3). This includes (invited) external or foreign actors, a military defence operation or local dialogues or a combination thereof. This makes assessing climate security practices challenging, as there is not one sector or one type of actor that is engaged, but rather a wide range of actors implicitly engaged with climate security. As multiple types of actors (table 3) can implement similar types of interventions (table 2), we have separated the type of interventions and the actors in order to create an understanding of where different actors are doing similar jobs. As a result, an overview is created of which actors could learn from similar interventions of other actors outside their own sector. In combination with the policy fields that practices are targeting, a more integrated approach could be established by being aware of the different types of interventions that are possible for each policy field.

¹⁸ See annex 3 for an explanatory guide to the types of interventions.

Table 2

Type of intervention				
(i) Financial	(ii) Technical	(iii) Political	(iv) Military	(v) Agricultural
(vi) Dialogue	(vii) Knowledge sharing	(viii) Water	(ix) Environmental	(x) Education

Table 3

Implementing actors				
(a) State-central	(b) State-local	(c) NGO-local	(d) NGO-international	(e) Private Sector
(f) Inter-governmental Organisation	(g) External International Organisation	(h) Military	(j) External State	(k) Academia/ Science
(l) Local community	(m) Non-state parties to conflict	(n) Donor		

Sixth, practices in the field of climate security are always **context specific**, as the underlying causes of conflict, the historical dynamics between actors and the visions for the future differ. This makes it difficult to generalise about what works and what does not work, as no two contexts are the same.

Seventh, interventions can have a very different budget and therefore it is difficult to compare their cost effectiveness. In some cases large development cooperation budgets are used, whereas in others mediation support is offered by local diplomatic staff or only a small budget is needed for an external party that facilitates the mediation. Innovative ways to finance interventions that seek a return on investments can also be envisaged, as we will see in the case studies of climate security practices. Military missions trying to reduce their own carbon and resource footprint may even save costs.

As a result of these challenges, it is difficult to create a general overview of what intervention is successful under what kind of circumstances and (financial) conditions. This report aims to overcome some of these challenges by providing an explanatory model that helps understanding the different types of practices in the field. Furthermore, it aims to contribute to the debate on how to evaluate the climate security practices with a view of replicating successful activities elsewhere and bringing them up to scale.

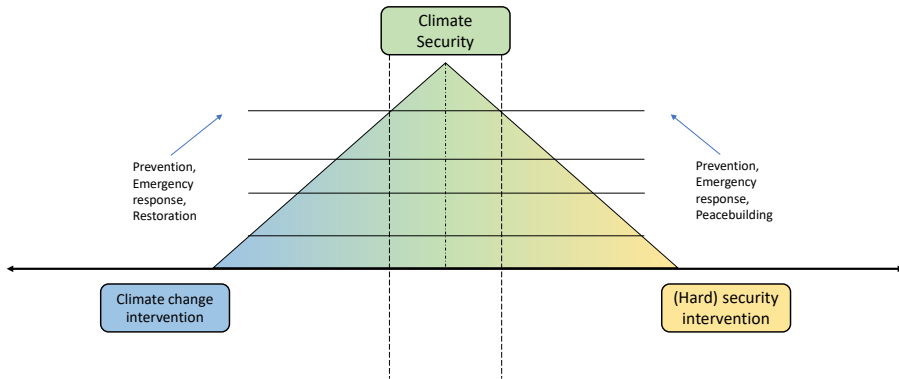
5 Climate-Security-Triangle

The Climate-Security-Triangle (CST) allows us to visualise various types of climate security practices. It represents the climate security spectrum on which projects are mapped. Projects that in some way address both climate and security will be located inside the borders of the triangle. The bottom left and right corner of the triangle represent projects predominately focused on climate *or* security but include a small dimension of the other aspect (graph 1).¹⁹ The bottom horizontal arrows stretch beyond climate change interventions and security interventions to indicate that many projects can be classified as climate change interventions that are not addressing security, and vice versa. This demonstrates that climate security is a segment of the broader climate change and security fields and that more specific interventions targeting only climate change or security are located outside the climate security field.

Climate security interventions and projects primarily address either the climate or security dimension. Therefore, case studies are placed along a spectrum of climate change and security interventions, along the bottom x-axis. The more practices consider the other dimension, the closer they are to the middle of the x-axis. The vertical line in the middle indicates the interface of climate and security. For example, a project that increases agricultural resilience against climate change impacts by bringing together different (hostile) communities to work together and implement agroecological farming practices helps to build communication and trust between communities traditionally hostile towards each other while also increasing availability of food and sustainable farming.

19 The authors of this report recognise that practices in the climate security field are more complex than mere climate change or security practices and can also include additional key features in interrelated domains, for example women's empowerment. However, these domains are often not the core of climate security practices but are important dimensions that need to be considered during planning and implementation in relation to the core activity.

Graph 1: Climate-Security-Triangle (CST)



Second, the impact of practices in the short, medium or long-term is indicated through the positioning of the project along the vertical line. The bottom of the vertical line indicates a short temporal impact. The further up the middle vertical line an intervention is placed, the more it addresses climate security on a long-term basis. Projects that do not completely address both climate *and* security issues can still be placed along the vertical lines.

6 Examples of climate security practices

In accordance with tables 1, 2 and 3, each project in this chapter is labelled with indicators reflecting the field of intervention, implementing actor(s) and the type of intervention. In addition, the temporal impact of each project is assessed, and information on its funding is provided. The limited available information on funding reflects a need for more transparency. Afterwards, the case studies are mapped on the Climate-Security-Triangle, which does not reflect all the indicators, but solely the ambition and results of addressing climate security. This categorisation is made not to focus solely on the actor who is initiating the practice but to focus on the (potential) impact of activity. See annex 1 for a schematic overview of the practices included in this report.

6.1 UNDESERT (Case 1)

Climate change and land use is increasing land degradation and desertification in the Sahel, as rainfall is less predictable, and when it rains, erratic rain washes away valuable nutrients in the topsoil. As food production and food security are hampered by these phenomena, UNDESERT²⁰ aims to enhance livelihoods, food security and resilience against climate change through land restoration. UNDESERT is mainly concerned with land degradation and desertification in Burkina Faso, Niger, Mali and Senegal.

The first part of the project combats desertification and land degradation through an integrated assessment of key plant species, based on the evaluation of the local population and on whether the species are resistant to climate change. These species are planted using agroecological practices, including rain harvesting techniques, retaining nutrition in the soil by reducing water runoff and fertilizing the soil with organic carbon such as mulch. The second part involves the programming of the Decision Support Portal, which combines locally generated and external data on climate change and crops to inform decision making about the use of specific crops for livelihoods and economic gain.

20 UNDESERT (n.d.) 'UNDESERT (understanding and combating desertification to mitigate its impact on ecosystem services)' accessed March 2021, <http://www.undesert.neri.dk/>.

A third dimension was implemented in Senegal. In order to combat degradation and desertification, UNDESERT implemented Payments for Ecosystem Services (PES) for the carbon sequestered through the protection and regeneration of forest that was being cut down for firewood and transformed into agricultural land.

Results

Although soil restoration takes years, UNDESERT's agroecological practices enhance tree and crop growth in arid regions. The initiative builds on local knowledge of key species for food production and economic growth. The increasing vegetation also contributes to the mitigation of climate change as trees and crops cool the environment and function as carbon sinks. The results of the project indicate slowly restoring soils and indirect improvements in food security and livelihoods, poverty reduction, and resilience against climate change, achieved through soil restoration, forest protection and regeneration, and the decision support tool.

Lessons learned

- Local knowledge on desertification and degradation is abundant and can be complemented by scientific knowledge of climate change and crops resistant to climate change, in order to ensure sustainable solutions for land-use planning under climate change.
- It is important to establish 'a baseline social economic context of local people, and how they use their landscape', in order to create an understanding of the driver of forest degradation and help change land management behaviour.²¹
- The PES payments were handed out as materials to avoid strife between people, and to directly provide women with the opportunity to use those materials to develop additional structures as necessary, without the requirement of cash to pass through committees dominated by village elders or chiefs. These are important lessons applicable to UN REDD programmes (Reducing Emissions from Deforestation and Forest Degradation in Developing Countries)²² or other PES projects in the region.²³

UNDESERT does not identify or explicate security benefits or risks attached to the implementation of agroecological techniques, but bases its work on the negative impact on livelihoods of climate change hastening degradation and desertification. Its main

21 Anne M. Lykke, et al. (June 2016). 'The UNDESERT project – from research to action for combating desertification and land degradation in West Africa', Aarhus University Department of Bioscience.

22 United Nations, 'Reducing Emissions from Deforestation and Forest Degradation in Developing Countries', accessed 14 January 2020, <https://redd.unfccc.int/>.

23 Anne M. Lykke, et al. (June 2016). 'The UNDESERT project – from research to action for combating desertification and land degradation in West Africa', Aarhus University Department of Bioscience.

aim is to increase sustainable soil productivity and reduce the risks of desertification. Agroecological practices implemented by UNDESERT improve resilience against climate change, enhance food security and thus help to reduce poverty. Increasing vegetation also contributes to mitigating climate change. UNDESERT is thus a climate-driven project whose impact on security and conflict potential is difficult to measure.

Although the project implicitly addresses the grievances that are assumed to be the cause for increasing violent conflict in the Sahel, UNDESERT does not explicitly address the role of climate change in the conflict nor does it consider the future of the project under growing insecurity. There is therefore scope to include security objectives in this climate-intervention. Following a climate-sensitive conflict assessment, one could potentially identify grievances in rural areas that armed fighters come from and return to (e.g. in Burkina Faso or Mali).²⁴ Integrating such a broader security dimension into the project's aims could potentially have contributed to reducing the current state of insecurity in the UNDESERT target areas.

Implementing actors: (k) Academia/Science; (l) Local community

Field of intervention: (2) Agriculture; (3) Food; (4) Land

Type of intervention: (ii) Technical; (v) Agricultural; (vii) Knowledge sharing

Location in the triangle: Climate driven, with implicit security aspects; Potential for mid- to long-term impact

Funding/resources: EUR 3,499,379, funded by EU-FP7.

6.2 CGIAR: Weather-index insurance (Case 2)

In an effort to bolster resilience against weather-based disasters, the Consultative Group on International Agricultural Research (CGIAR) with its Research Program on Water, Land and Ecosystems and the International Water Management Institute (IWMI), have been involved in developing weather-index insurance for smallholder farmers.²⁵ Weather-index insurance schemes for crops or livestock are developed to reduce the

24 The International Crisis Group (February 2020). 'Burkina Faso: Stopping the Spiral of Violence', accessed November 2020, <https://www.crisisgroup.org/africa/sahel/burkina-faso/287-burkina-faso-sortir-de-la-spirale-des-violences>.

25 See for an example Loïc Bisson, et al. (February 2021). 'Between Hope and Despair: Pastoralist Adaptation in Burkina Faso', Clingendael: The Hague; Million A. Tadesse, et al. (November 2015). 'Weather index insurance for managing drought risk in smallholder agriculture: Lessons and policy implications for sub-Saharan Africa', *Agricultural and Food Economics* 3(1), 1-21; Giriraj Amarnath, et al. (December 2019). 'Insurance as an agricultural disaster risk management tool: evidence and lessons learned from South Asia'. Colombo, Sri Lanka. International Water Management Institute (IWMI), CGIAR Research Program on Water, Land and Ecosystems (WLE), WLE Briefing Series 27.

exposure of farmers to weather risks and the subsequent impact on their income. Farmers pay a premium to receive financial compensation for loss of income in case of weather abnormalities. A norm is established and monitored through local weather stations or satellite maps. When the weather deviates from this norm, insured farmers in the affected area receive financial compensation. This system maintains livelihoods under increasing uncertainties of climate change impacts on farming outputs, thereby improving farmer's resilience and subsequently reducing the exacerbating impacts of climate change on security in the region.

Results

In India, CGIAR and the IWMI developed the Index-Based Flood Insurance Scheme (IBFIS) to prevent floods from posing extreme financial risks to smallholder farmers.²⁶ The potential benefit for farmers was shown by modelling historical weather deviances, which indicated the compensation they would have received during particular floods in the past had the insurance scheme been in place. Three pilots successfully helped farmers recover after floods had destroyed their livelihoods. As these pilots showed, insurance can be an appropriate disaster risk management tool to build resilience against climate change impacts like the occurrence of extreme weather events. By building farmers' resilience to climate shocks, governments can reduce the risk of economic damage from disasters.

Research into the implementation of weather-based index insurance in sub-Saharan Africa indicates that weather-index crop and livelihood insurance suffers from several challenges.²⁷ Challenges include: lack of trust by farmers that the premium will be paid back in times of need; lack of urgency in farmer's perspectives on the insurance scheme, as the roll-out took place in a year following a good harvest, indicating a tendency of people to not focus on future risks to their income; and difficulty determining whether a farm had been affected by abnormal weather events due to distances between weather stations and farms, which could be up to 25 kilometres.

26 Giriraj Amarnath, et al. (December 2019). 'Insurance as an agricultural disaster risk management tool: evidence and lessons learned from South Asia'. Colombo, Sri Lanka. International Water Management Institute (IWMI), CGIAR Research Program on Water, Land and Ecosystems (WLE), WLE Briefing Series 27.

27 Million A. Tadesse, et al. (November 2015). 'Weather index insurance for managing drought risk in smallholder agriculture: Lessons and policy implications for sub-Saharan Africa', *Agricultural and Food Economics* 3(1), 1-21.

Lessons learned

- Index-based insurance can be useful to enhance resilience and increase recovery of farms in case of weather abnormalities as a result of climate change.
- In sub-Saharan Africa, incorporating premium as a percentage of input fertilizers can increase farmers' willingness to participate.
- Increasing the number of weather stations improves assessment of the farms affected by weather abnormalities.
- A similar insurance scheme for agricultural risks in India, East and West Africa, implemented by CGIAR's Climate Change, Agriculture and Food Security body, concluded that farmers should be involved in the design of the scheme and the insurance should be integrated with other development interventions.²⁸

Weather-index based insurance schemes are grounded in the aim of reducing the negative impacts of climate change on farmers' livelihoods and increasing food and livelihood security. Therefore, this practice is considered climate-driven, with a small security dimension as it reduces the impact of otherwise potentially destabilising shocks. However, the initiative does not address ways to improve disaster preparedness. Therefore its current design might not be viable in the future, when the occurrence and intensity of extreme weather events may increase and farmers may be affected by those events more often than not, making the insurance scheme unviable for the insurers. A longer-term integration of immediate financial relief and future disaster preparedness could enhance this project's long-term achievements. Crucially, this practice assumes that farmers are not dependent on the food they produce for their own food security. But, especially in remote places, it might not be possible to buy alternative food from the insurance money refunded after extreme weather events.

Implementing actors: (e) Private sector; (k) Academia/Science

Field of intervention: (2) Agriculture

Type of intervention: (i) Financial

Location on triangle: Climate-driven; Short-term impact.

Funding/resources: No information is currently available

28 Helen Greatrex, et al., (2015). 'Scaling up index insurance for smallholder farmers: Recent evidence and insights', *CCAFS 14*, Copenhagen: CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS)

6.3 EcoPeace Middle East: Good Water Neighbours Project (Case 3)

EcoPeace Middle East²⁹ is an organisation that aims to promote cooperation to protect the shared environmental heritage of Israel, Palestine and Jordan. Its goal is to bring people together to collaborate across borders on shared environmental issues. The 'Good Water Neighbors' programme works with communities and municipalities across the three territories to raise awareness of the shared water reality and to create political will for transboundary cooperation over issues of water and sanitation. Sharing experiences of the mutual dependence on shared water resources and fostering cross-border cooperation helps to build trust and understanding that leads to common problem solving and peacebuilding. This practice is based on the idea that starting a dialogue on a shared environmental problem could slowly improve relations and bring people together to cooperate on solving problems – which has potential to indicate to the political arena that cooperation and peace are possible.

Results

The project has been running since 2001 and has managed to expand from working with local communities into working on a national level.

Moreover, several practical outcomes have been achieved, such as the construction of a sewage collection network in a Palestinian community with a connection to the network of the neighbouring Israeli community. This has resulted in Palestinian wastewater being treated in Israel, which stops the wastewater from polluting the nearby Hadera/Abu Naar stream.³⁰ Another example is the establishment of a photovoltaic plant for the Tal Al Mantah waste water treatment plant located in a Jordanian community in the Middle Ghor³¹. Operating the treatment plant using clean energy to improve its operation and educating locals about the importance of water and energy nexus are main objectives of the project. Another example is the conversion of an United Nations Relief and Works Agency for Palestine Refugees (UNRWA) school in Gaza Strip into an environmentally sustainable model school by installing solar panels, rainwater harvesting system and wastewater treatment plant for reuse in school gardening³². The project serves 2400 Gazan students and serves as example on the importance of water energy

29 EcoPeace Middle East 'Community Involvement', accessed October 2020, <https://old.ecopeaceme.org/projects/community-involvement/>.

30 EcoPeace Middle East 'Community Involvement', accessed October 2020, <https://old.ecopeaceme.org/projects/community-involvement/>.

31 Global Nature Fund 'GNF - Solar energy supply for a wastewater treatment plant, Jordan', (accessed March 2021), <https://www.globalnature.org/en/wastewater-treatment-plant-jordan>.

32 EcoPeace Middle East 'Improving Water, Sanitation, and Energy Supply at an UNRWA school in the Gaza Strip, Palestine Progress Report April – November 2020'.

nexus and improving livelihoods in Gaza. The construction of a decentralized wastewater treatment plant in Al Khas community near Bethlehem including an irrigation system and greenhouses to support women in the community in agricultural production showcases the prevention of pollution of shared underground resources and creates water and food security opportunities.³³ Other results from the community project involved the installation of 105 greywater treatment systems in Jordanian households in the Northern Valley to reduce environmental pollution from cesspits and reduce freshwater use.

It must be noted that not all the work and results of EcoPeace are available for everyone to see online, due to the highly politicised environment in which they operate. Therefore, some results achieved might be under the radar, and we are unaware of them. Before EcoPeace was established the peace process in the Middle East involving Jordan, Israel and Palestine did not include sustainable management of shared waters, where communities across the three countries depend on transboundary rivers for their livelihoods and cultural practices.

EcoPeace's aim of using an environmental issue as a vehicle for peacebuilding between Jordan, Palestine and Israel indicates that climate and security are fields that could overlap and provide entry points for addressing both at the same time.

Lessons learned

- Climate change and environmental security can form entry points for peacebuilding between long-hostile communities.
- Opening up dialogue between communities about shared issues can improve understanding and cooperation, reduce hostilities and foster peace in the long term.
- The length of the project suggests that longer processes require structural funding in order to achieve results that pay off in the long term.

Implementing actor: (c) NGO-international

Field of intervention: (1) Water; (2) Agriculture; (6) Energy

Type of intervention: (iii) Political; (iv) Dialogue; (ix) Environmental

Location on triangle: Climate and security driven; Long-term impact

Funding/resources: Annual budget is not publicly available. Donors include Swedish International Development Agency (SIDA) and USAID West Bank/Gaza CMM.

33 EcoPeace Middle East 'Improvement of household sanitation by using low cost treatment unit and reuse of treated wastewater for agriculture in Al-Khas village - East rural areas of Bethlehem Final Report covering June 2019 to March 2021'.

6.4 Peace Renewable Energy Credits (Case 4)

Although investments in renewable energy are surging across the globe, Energy Peace Partners have observed that they are limited in fragile countries: that is, countries most vulnerable to violent conflict, climate change impacts and energy poverty where the potential social and health gains are highest. In regions where there has never been an electricity grid, people rely on diesel generators for energy. Where there are no streetlights at night, renewable energy can not only bring sustainable light but also increase safety and reduce illicit trading of diesel – which in conflict settings often flows through networks controlled by (both state and non-state) conflict actors.

Energy Peace Partners developed the Peace Renewable Energy Credit (P-REC) specifically to support renewable energy projects in fragile settings. In cooperation with Congolese project developer Nuru and 3Degrees, the first Peace Renewable Energy Credits (P-RECs) were purchased by Microsoft from a Nuru solar project in Goma, Democratic Republic of Congo (DRC).³⁴

The P-REC is a new type of Energy Attribute Certificate (EAC), an internationally traded virtual carbon accounting mechanism similar to a carbon credit, but specific to renewable energy.³⁵ Each EAC represents 1 megawatt hour (MWh) of renewable energy generated, which can be purchased by governments, companies and individuals to meet their sustainability goals. The P-REC is specific to new renewable energy projects in fragile, energy-poor countries, where access to finance remains a challenge; the P-REC offers an additional way to monetise renewable energy in these settings. This new revenue stream enables developers to finance new projects and supports new renewable energy project development. The buyers of P-RECs, such as Microsoft, thus invest in socially and environmentally responsible energy projects in fragile and energy-poor settings to meet their sustainability goals or their corporate social responsibility (CSR) targets. Energy Peace Partners serves as the issuer of P-RECs under the I-REC Standard, the dominant international standard for EACs outside of North America and Europe.

34 3Degrees (2020). 'First-Ever Peace REC (P-REC) transaction drives renewable energy development in Africa', 3BL CSR Wire, accessed November 2020, https://www.csrwire.com/press_releases/708566-first-ever-peace-rec-p-rec-transaction-drives-renewable-energy-development.

35 Orin Cook, et al. (2019). 'Peace Renewable Energy Credits: Facilitating high-impact projects in fragile regions', Center for Resource Solutions, accessed March 2021, <https://resource-solutions.org/wp-content/uploads/2019/01/Peace-Renewable-Energy-Credits.pdf>.

Results

The first P-RECs were issued from Nuru's 1.3 MW solar mini-grid in the Ndosho neighbourhood of Goma, DRC, which will serve 750 households and businesses and provide the first electrification to the area. Through the pre-sale of P-RECs to Microsoft, Nuru was able to procure and install 35 public streetlights in Ndosho, a priority for the community. The streetlights enhance safety and security, improve quality of life and support the local economy. Moreover, the P-REC can in the future potentially help catalyse new renewable energy projects, thereby enhancing children's learning hours through night-time lighting, and creating sustainable jobs. If it is supported with significant renewable energy sources, it might also reduce local charcoal and diesel consumption, the supply of which is often controlled by conflict actors.

As the first project was recently launched in March 2020, and development for expansion is still underway, it is not yet possible to assess the long-term impact. However, the immediate impacts of renewable energy-powered streetlights are increased safety as well as an enhanced local economy through shops being able to stay open longer at night. Although this first phase of the project does not reduce the demand for diesel and charcoal, new P-RECs will be issued as the core solar systems continue to generate clean electricity, allowing for additional streetlight expansion, and eventually domestic power consumption, to be made possible through additional P-REC sales from the first project. Funding streams are thus maintained and can only increase as more buyers enter the system and more projects generate renewable energy. This project has a forward-looking vision and creates its own innovative re-investment cycle. Through this financial and technical intervention, P-RECs provide a sustainable solution to enhancing security and livelihoods.

Enhancing access to renewable energy stems from a (socioeconomic) developmental perspective, climate perspective and hard-security perspective. Access to renewable energy increases economic transactions at night, increasing personal safety after sunset and possibly reducing financial flows for conflict actors. Expanding the renewable energy project towards personal use can improve health and air quality and also reduce the impact of energy generation on the climate. The security dimension in this case slightly has the upper hand over the climate dimension, but the latter is also an important factor contributing to the success of this project.

Lessons learned

- Establishing a market-mechanism that automatically generates funds for additional solar energy production integrates the growth of the project at the start.
- Renewable energy not only lifts people out of energy poverty but also can reduce illicit trade in diesel if a residential electricity grid is established, as it could cut off the financial revenues of conflict actors who are engaged in such trade.

Implementing actors: (e) Private sector; (k) Academia/Science

Field of intervention: (6) Energy

Type of intervention: (i) Financial; (ii) Technical; (ix) Environmental

Location on the triangle: Security and climate driven; Long term impacts.

Funding/resources: No information is currently available.

6.5 Inter Collectivité du Sourou Mali (Case 5)

Development projects in physically insecure regions such as Mali are scarce, as the insecurity means there is a greater potential for the project to fail, and thus funding is often not directed to these efforts. The *Inter Collectivité du Sourou Mali*³⁶ is one of the few development projects that are successful in Mali. The Sourou Valley is located near the border of Burkina Faso, from which the Sourou River flows into Mali. Development of this wetland has been neglected by the government, as Mali already had the Niger Delta.³⁷ The Sourou region suffered from 'the lack of natural resource management that had become a key conflict driver, particularly in the face of increased pressure on land and water and the intensifying factor of climate change'.³⁸

Acknowledging the intersection of natural resource management in the context of climate change, and the importance of effective governance to prevent conflicts from escalating, the *Inter Collectivité du Sourou* was created to unite the 29 territorial entities into one body. The *Inter Collectivité* needed to develop an Integrated Sustainable Development Programme (ISDP) that would cover all the interests and sectors of the region. The Netherlands Embassy suggested that the *Inter Collectivité* and the Ministry in charge of environment and sustainable development should conduct a Strategic Environmental Assessment (SEA), as was required by Malian law.

By simultaneously developing the ISDP and the SEA, the *Inter Collectivité* was able to ask local municipalities about their development needs and embed those into a framework of sustainable development that international donors could readily support.³⁹ The ISDP was also presented to all the communities it would affect, adding another layer of participation and ownership to the process. This process resulted in the decentralisation

36 Fransje Molenaar & Sibout Nootboom (June 2020). 'Improving decentralised natural resource management in the Sahel: The case of the Sourou River plain in Mali,' *Clingendael Policy Brief*.

37 Sibout Nootboom & Niek van Duivenbooden. (2019). 'Case Study: Duurzame ontwikkeling en waterbeheer in het Sourougebied in Mali', *Water Governance* 2019(3), 93-98.

38 Fransje Molenaar & Sibout Nootboom (June 2020). 'Improving decentralised natural resource management in the Sahel: The case of the Sourou River plain in Mali,' *Clingendael Policy Brief*.

39 Sibout Nootboom & Niek van Duivenbooden. (2019) 'Case Study: Duurzame ontwikkeling en waterbeheer in het Sourougebied in Mali', *Water Governance* 2019(3), 93-98.

of natural resource management in the Sourou area. Currently all development projects need to be approved by the *Inter Collectivité du Sourou*. This local governance structure represents all municipalities in the region and has oversight over the different projects that are being implemented as well as how they relate to the Sustainable Development Goals (SDGs). The *Inter Collectivité du Sourou* has been given approval by central government and ministries to work directly with donors on development projects.

Results

Stability is being improved by establishing a locally owned governance structure that is based on the opinions and wishes of the people it represents. Consequently, natural resources can be better managed and conflict escalation prevented. The action plan also includes recognition of the need to adapt the ideas to the changing climate, making the agreement of governance climate proof.

This initiative indicates the importance of local ownership and governance in the world of development, security and climate change. It was a first try at establishing local decentralized governance structures to increase stability and reduce conflict over natural resources. It was implemented in an unstable context but proved successful in its process of establishing governance. The Netherlands Embassy and CARE Mali supported the initiative in a unique way, as they focused on supporting the process rather than demanding specific development outcomes. As a result, the people themselves could decide on their development goals, and there was no pressure to present tangible outcomes that would not have created sustainable change.

The focus of the initial phase of the *Inter Collectivité* is centered around governance structures and provides a good example of what is necessary to address climate security risks. It is necessary for local people to be involved in the planning and design of their own development goals and also to be represented by the governance body that oversees the equal implementation of development projects. Moreover, short connections between donors and the project are necessary so as not to lose any momentum to start implementing the initiative's development targets. In this case, the process of securing the donor's continued support took more than six months, which severely affected the level of security in the region and might eventually hamper the effectiveness of the *Inter Collectivité* in this region. Although this is a setback, it is an important lesson for setting up another *Inter Collectivité* in Mali.

Lessons learned

- Donors need to be less focused on measurable short-term socioeconomic development outcomes and instead focus on the process of establishing a sustainable initiative, governance structure or development process.
- Decentralization may be possible, even though formal regulations are not in place.

- Social and environmental issues are interconnected and can be addressed through such inclusive local governance.
- Local people should be involved in planning and design of their own development goals and be represented by the governance body that oversees the equal implementation of development projects.
- Donors should separate the support for local development governance from support for socioeconomic development projects. The first should particularly be a continual process without hiccups for several years.

Actors: (a) State-central; (b) State-local; (c) NGO-local; (j) External state; (l) Local community; (n) Donor

Field of intervention: (1) Water; (4) Land; (9) Politics

Type of intervention: (i) Financial; (iii) Political; (vi) Dialogue; (ix) Environmental

Location on triangle: Security driven with climate as important component; Potential long-term impact.

Funding/resources: Supported by the Netherlands Embassy and CARE Mali, while also still looking for other donors to support the projects included in the ISDP.

6.6 3S Initiative: Sustainability, Stability and Security (Case 6)

Given the context of population growth predictions, fragile livelihoods and food security, as well as the potential for substantial irregular migration, Africa is a continent that is particularly vulnerable to climate change impacts. The Initiative on Sustainability, Stability and Security (3S)⁴⁰ was launched in 2016 at the first Africa Action Summit in Marrakesh during the 22nd Conference of the Parties to the United Nations Framework Convention on Climate Change (COP22). The initiative is an intergovernmental initiative, working towards the three pillars of stability, security and sustainability. The heads of government recognise that Africa is the continent most affected by climate change impacts, which can also jeopardise peace, stability and sustainable development.⁴¹

The 3S Initiative aims at mitigating adverse drivers and structural factors that hinder people from maintaining sustainable livelihoods, thereby compelling them to leave their places of origin. The initiative aims to strengthen intra-African mobility by building a restorative circular African economy that maintains and regenerates its environmental resources. To achieve this, the 3S Initiative works at fortifying Africa's three critical

40 3S Initiative 'Sustainability, Stability, Security Initiative', accessed December 2020, <https://3s-initiative.org/en/home/>.

41 Era Environment 'Declaration of the First Africa Action Summit for Continental Co-Emergence', accessed January 2021, <https://www.eraenvironnement.com/declaration-of-the-first-africa-action-summit-for-continental-co-emergence/>.

endowments jointly: its natural resources (sustainability), human resources (stability), and institutional resources (security). Institutionally, the 3S Initiative forms part of the Rural Resilience Programme of the International Fund for Agricultural Development (IFAD), an umbrella programme addressing rural resilience holistically.

The initiative aims to create stability in an environmentally sustainable manner that takes into account the climatic changes on the continent. Through national or regional programmes, the initiative aims to create two million green jobs for vulnerable groups, especially young people, migrants, displaced populations and individuals targeted by extremist groups. Recognising the positive impact of sustainable livelihoods and jobs on security, investment in land restoration and sustainable land management could support the goal of job creation and also encourage adaptation of farming practices to mitigate the effects of climate change. Two important elements of sustainable farming and land restoration are access to land and tenure rights; the initiative aims to improve both of these, which will also strengthen the sense of belonging to a specific place or community. This will help prevent displacement, which is additionally addressed through improving preparedness and early warning systems for natural disasters.

Results

The initiative was launched in 2016. In Niger, two projects aimed at migrant reintegration and countering radicalisation in the region through job creation related to land restoration are underway. At a UN International Organization for Migration (IOM) transit centre, West African migrants are receiving agricultural training.⁴² Another community stabilisation project is hosted to create jobs for returning Nigerien migrants, including ex-migrant smugglers, young people at risk and Libya returnees.⁴³ The training aims to contribute to environmental and climate change action as well as prevent radicalisation in transit and origin countries, thereby minimising migration caused by environmental factors. The projects are facilitated by the UN IOM, the UN Convention to Combat Desertification and the UN Migration Agency. In Zambia a project has been launched to Plant a Million trees (PAM); young people and children are included in the project and are being educated about the importance of economic diversification and reducing deforestation.⁴⁴ A few projects are thus already implemented under the 3S Initiative, with more expected to follow.

42 3S Initiative 'Returning migrants receive agricultural training in Agadez, Niger', accessed February 2021, <https://3s-initiative.org/en/returning-migrants-receive-agricultural-training-in-agadez-niger/>.

43 3S Initiative 'A Plot of Land, Hope Restoration in Agadez', accessed February 2021, <https://medium.com/@UNmigration/a-plot-of-land-hope-restoration-in-agadez-d77f2aa26af6>.

44 3S Initiative 'Zambia – Plant a Million Trees', accessed February 2021, <https://3s-initiative.org/en/the-members/zambia/>.

Climate and security driven

This initiative aims to increase the interlinked pillars of security and environmental sustainability through a programme that invests in job creation and natural resource governance. In this way, the programme intends to provide incentives in post-conflict recovery through economic growth and job creation, and to reduce grievances caused by exclusion and governance failures regarding natural resources. The 3S Initiative pursues three key outcomes: creating green jobs for vulnerable groups through investment in land restoration and sustainable land management; strengthening access to land and tenure rights; and preventing displacement through disaster preparedness.

Implementing actors: (a) State-central; (f) Intergovernmental Organisation

Field of intervention: (2) Agriculture; (3) Food; (4) Land,

Type of intervention: (v) Agricultural; (ix) Environmental; (x) Education

Location on the triangle: Both climate and security driven.

Funding/resources: Budget is not publicly available. Donors include Ankara Initiative, European Union, United Nations Convention to Combat Desertification, Italian Development Cooperation.

6.7 Juba Peace Agreement Sudan 2020 (Case 7)

Acknowledging the role of natural resource (management) in conflict dynamics, peace agreements increasingly include natural resource sharing in their provisions.⁴⁵ This is built on the idea that when conflict parties agree on a mechanism for managing natural resources, reoccurrence of hostilities is less likely. The Juba Peace Agreement, the latest step in the Sudanese transitional government's attempts to end long-running conflicts within the country, is an example of this dynamic.

The agreement between Sudan's transitional government and several of the Darfuri armed groups aims to address the root causes of conflict,⁴⁶ such as marginalisation, the relationship between religion and state, resource sharing, land issues and representation at national level.⁴⁷ Acknowledging the role of natural resource

45 Daniëlla Dam-de Jong (2020). 'Building a sustainable peace: How peace processes shape and are shaped by the international legal framework for the governance of natural resources', *Review of European, Comparative & International Environmental Law* 29 (1), 21-32.

46 Notably, the Sudan Liberation Movement (SLM) and the Sudan People's Liberation Movement-North (SPLM-N) were not signatories of the agreement.

47 Rosalind Mardsen (September 2020). 'Is the Juba Peace Agreement a Turning Point for Sudan?' Chatham House, accessed October 2020, <https://www.chathamhouse.org/2020/09/juba-peace-agreement-turning-point-sudan>.

management and land-sharing in Sudan's conflicts, several provisions in the peace agreement on natural resource management between national and sub-national governance bodies aim to redress historic grievances and sustain the viability of lower-level governance.

The provisions on natural resources highlight the economic revenues from natural resources and establish a revenue sharing model between national and state administrations.⁴⁸ Specifically relevant are the clauses on revenue-generating minerals and oil. The agreement provides for the establishment of a National Reserve Fund and a National Revenue Commission and makes several allocations to revenue sharing with specific regions, such as the Blue Nile and Kordofan region and Darfur. Land-sharing clauses cite the role of traditional justice provisions as a means of reconciliation and prevention of further disputes.

Results

The Juba Peace Agreement was signed in late 2020, which makes it impossible to reflect on its outcomes. Of particular note is the inclusion of natural resources and access to land in a section dealing with the root causes of the conflict. Although provisions on natural resource use and revenue sharing were also incorporated in unsuccessful past peace agreements under the Bashir government – notably the Doha document for Peace in Darfur, the agreements between Sudan and South Sudan and Sudan's Comprehensive Peace Agreement (CPA) – the different incentives of the current transitional government may pave the way for better results. However, it should be noted that the two main opposing parties, the Sudan Liberation Movement (SLM) and Sudan People's Liberation Movement-North (SPLMN), did not sign the Juba Peace Agreement, which threatens the long-term impact of the agreement.

As land issues and resource inequality are significant factors in the Sudanese conflict(s), this peace agreement could contribute to future peaceful co-existence. However, the effects of the agreement remain to be seen, as Sudan faces a range of other significant hurdles potentially threatening the increased inclusion achieved through its transitional government. Such challenges include the successful reform of governance structures, including a rebalancing of the interests of armed actors in various institutions, inter-tribal distrust, competition and hostilities, as well as a failing economy in the midst of a pandemic.

The Juba Peace Agreement is the result of the quest for inclusion, stability and peace in Sudan and is therefore mainly security driven. The provisions on natural resource and

48 Constitution Net 'Summary and Analysis of Sudan's 2020 Peace Agreements', accessed October 2020, <http://constitutionnet.org/vl/item/summary-and-analysis-sudans-2020-peace-agreements>.

wealth sharing between the regions is set up in a way that can cope with climate change and its impacts on the availability of resources, as the provisions stipulate a share of revenues rather than hard numbers. As such, diminishing resources do not necessarily threaten the agreed distribution.

Implementing actors: (a) State-central; (m) Non-state parties to conflict

Field of intervention: (4) Land; (9) Politics

Type of intervention: (ii) Political

Location on the triangle: Security driven, with an environmental dimension; Potential long-term impact.

Funding/resources: Funded predominantly by diplomatic resources.

6.8 Energy transition of the French Defence Forces (Case 8)

Natural resource scarcity and climate change impacts play a role in military or political missions to conflict areas. In the Sahel, for instance, increasing drought severity and declining availability of freshwater adversely affect military missions. When wells are dug by international missions in order to access sufficient freshwater, groups from other regions are tempted to enter that area. This can result in increased tensions over water resources, contrary to the mission's aim. Additionally, the fuel demand by missions is also a vulnerable security aspect for the defence forces themselves, as fuel transport trucks are easy targets for opponents. Therefore, (inter)national military missions are increasingly incorporating climate security measures into mandates and resolutions to prevent doing more harm to the host country.

There are some examples in which military missions in conflict zones are greening their efforts by increasingly relying on renewable energy rather than oil or diesel.⁴⁹ Such actions directly affect the safety of the mission and implementation of the mandate while reducing the impact on the climate, as fuel convoys are often targeted by rebel groups and disruption of mission energy sources can be problematic. Transitioning missions to renewable energy also reduces the carbon footprint and operational costs. It contributes to the overall reduction of greenhouse gas emissions that contribute to future climate change.

Acknowledging the potential benefits of including the environment in military strategic planning, the French defence forces identify climate change as an important factor in aggravating crisis. Its Sustainable Defence Strategy of 2016-2020 aligns the armed

49 For example, greening efforts by the UN: Lucile Maertens & Malkit Shoshan (April 2018). 'Greening Peacekeeping: The environmental impact of UN peace operations', International Peace Institute, New York.

forces' actions with their sustainable development strategy.⁵⁰ To reduce the energy consumption of defence bases, France will spend €500 million between 2020-2026 on its energy transition.⁵¹ By 2030, the armed forces plan to reduce the energy consumption of military camps deployed on overseas operations by 40 per cent via the Eco-Camp 2025 project. Moreover, French armed forces fossil fuel vehicles will be replaced by hybrid vehicles.

This addresses the dependency of the defence forces on fossil fuel, with the aim of reducing the risk of attacks on fuel transport and reduce the pressure in the fragile context in which they are deployed. In this way, the French Ministry of Defence addresses the contemporary security challenges of their missions resulting from fossil fuel consumption, and simultaneously reduces their contribution to emissions and climate change. The latter, in turn, could affect their missions in the future.

Results

Although it is too early to review this practice and analyse its impact, the projected impact is dual: the adaptation to climate change by armed forces improves their effectiveness and reduces the strain placed on climate goals. It also reduces the pressure on local resources, which were potentially among the conflict drivers.

Implementing actor: (a) State-central; (h) Military

Field of intervention: (6) Energy; (8) Military

Type of intervention: (i) Financial; (ii) Technical

Location on triangle: Security and climate driven; Potential high impact.

Funding/resources: EUR 500 million between 2020-2026.

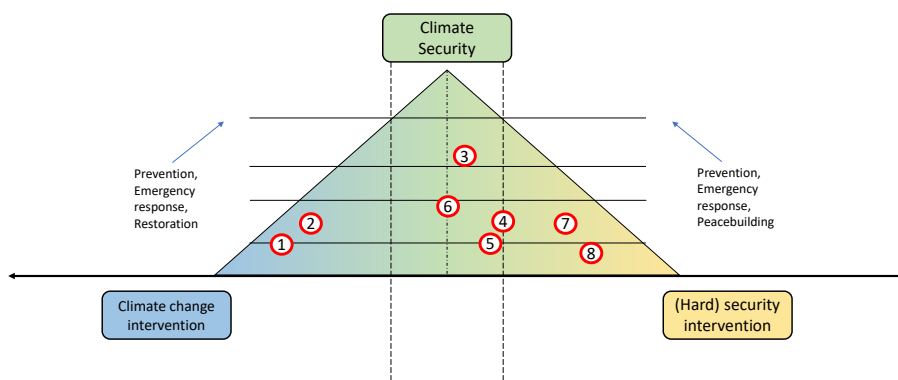
50 Louise Van Schaik, et al. (2020). *Ready for Take-Off? Military responses to climate change*, The Clingendael Institute.

51 Ministère des Armées (2020). 'Defence Key Figures', accessed November 2020, <https://www.defense.gouv.fr/content/download/592948/10040253/file/Chiffres%20cl%C3%A9s%20de%20la%20D%C3%A9fense%20-%202020%20-%20UK.pdf>.

7 Mapping cases on the Climate-Security-Triangle and reflections on cases not included

The Climate-Security-Triangle below shows the location of the projects described above on the triangle. Many projects that do not entirely or explicitly address climate and security are located *in* the triangle, indicating that even the dominantly climate or security-driven practices in this report also include the other dimension.

Graph 2: Case studies on Climate-Security-Triangle



- 1 – UNDESERT (Case 1)
- 2 – CGIAR: Weather-index insurance (Case 2)
- 3 – EcoPeace Middle East: Good Water Neighbours Project (Case 3)
- 4 – Peace Renewable Energy Credits (Case 4)
- 5 – Inter Collectivité du Sourou (Case 5)
- 6 – 3S Initiative: Sustainability, Stability and Security (Case 6)
- 7 – Juba Peace Agreement Sudan 2020 (Case 7)
- 8 – Energy transition of the French Defence Forces (Case 8)

Climate security practices are slowly emerging from the growing recognition of the importance of integrating climate and security. The eight case studies in this report can generally be divided into macro- and micro-level approaches, which differ in scale and scope. Macro-level initiatives⁵² include practices proposed and designed by people in larger institutions or governmental structures, who are not the direct beneficiaries of the practice themselves. Macro-level initiatives are generally implemented on a larger scale and can often be traced back to political or diplomatic decision-making processes. Each of the macro-level practices described here aim at different specific aspects of furthering climate security. For example, the 3S Initiative focuses on economic opportunity, migration and sustainability; the Juba Peace Agreement focuses on inclusive governance; and the French Defence Forces' efforts are aimed at energy transition, sustainability and peace. Moreover, macro-level projects often tend to contribute to climate security in the longer term as the implementation of large-scale proposals takes time, and their goals and results are often indirect and intangible. Cases 6, 7 and 8 respectively aim at reducing radicalisation through job creation; peace making through resource sharing; and reducing the impact of the military on natural resources and stability on the ground.

In contrast, most micro-level initiatives⁵³ are proposed, implemented or co-designed by (some of) the beneficiaries themselves. These initiatives generally produce more tangible outcomes in the shorter term, be they improved livelihoods, community dialogues or sustainable farming, with the potential to remain impactful in the long term. These projects are generally applied in a smaller and more specific geographical context, although macro-level initiatives eventually also trickle down to more specific geographical areas.

The Good Water Neighbors project initiated by EcoPeace Middle East is an example of a micro-level initiative that is truly both climate and security driven and aims to evolve into a long-term diplomatic and political solution. It is a project in which local ownership of the design and progress is also central, as it a locally initiated project that is not terminated after a certain amount of time. The time scale is a potential risk to the effectiveness of other projects implemented at local level, such as UNDESERT, as building local ownership and adaptability of the project are necessary for people to continue the practice after the project is terminated. However, the importance of shorter-term projects that alleviate (immediate) pressures of resource scarcity should not be neglected.⁵⁴ Another noticeable difference among the micro-level projects is the

52 Cases 6, 7 and 8.

53 Cases 1 to 4.

54 For a deeper analysis of land restoration as a security measure, see: Louise Van Schaik, et al. (2018). 'A Test of Endurance: Addressing migration and security risks by means of landscape restoration in Africa', The Clingendael Institute.

type of actors implementing them. Where EPME is a truly local force, UNDESERT and CGIAR's weather-index insurance project are initiated by actors outside the receiving country. However, the latter two projects both include the beneficiaries in their design, for optimal success.

Energy Peace Partner's P-RECS were not proposed or designed by the beneficiaries, and instead comprise a practice in which market-based solutions were implemented in Congo, implemented with the help of a local contractor. This project is different because its continuation is provided by a market structure that ensures further investments into the expansion of the project, mitigating the risk that the project will fail after the initiator leaves the area.

An exception to the general division between macro- and micro-level projects is the Inter Collectivité du Sourou, as this is a governance and policy-related initiative that was built and operates on a local level, with national-level approval. The Inter Collectivité du Sourou embeds much of its success in the local ownership of the development plans and the governance of them. This creates responsibility and ensures that the action plans match the needs and wishes of the communities. It also enables people to share their own ideas, while at the same time learning about the needs of other communities. In that way, a middle ground of how regional natural resources should be managed can be found collectively, which reduces negative security risks of climate change impacts and climate security projects.

7.1 Macro- and micro-level assessment challenges

The political and more macro-level initiatives such as the French Defence's energy transition and the Juba Peace Agreement are initiatives whose impacts are difficult to assess, due to their more general aims in contrast to specific tangible aims. Designing projects with general objectives but without a concrete translation to implementation can lead to pitfalls and reduce project effectiveness. Although political efforts are important steps which can have roll-on effects on actual practices, it can be difficult to measure whether the proposal is effectively implemented and reaches its goals. The amount the French Defence Forces is planning to spend on climate-related activities is measurable in the long run, yet the impact of the investments will remain hard to assess. Similarly, the Juba Peace Agreement is an important step in the right direction but hard to evaluate and subject to a range of potential pitfalls. As conflict over natural resources is among the underlying conflict drivers, it is an important element to include, but whether the agreement can be enforced is unclear.

Although macro-level initiatives tend to take longer to materialise, some micro-level initiatives risk losing impact after the termination of the project. Another risk is that the project's shorter-term aims are not appropriate climate security objectives in the long

term. It is therefore important to complement short(er)-term initiatives with possibilities to extend the initiative or encourage thinking ahead to adapt to the longer-term reality. For example, weather index insurance schemes offer an important resilience-building strategy in the short to medium term. However, the existence of farms in flood- or drought-prone areas and the increasing occurrence of droughts and floods will eventually drive up the insurance premium and make the business model unsustainable. The baseline on which agricultural losses are counted will also have to shift to an adjusted norm, which reduces the returns on the premium. It is therefore important to complement such immediate initiatives with alternative long-term solutions in the face of rising temperatures and more frequent extreme weather events.

The Peace Renewable Energy Credit (P-REC), developed by Energy Peace Partners, is an example of such a forward-thinking practice. By channelling increasing funds into renewable energy projects in fragile countries, additional investments and development of renewable energy is unlocked. The P-REC projects hold peace dividends, by increasing safety at night through streetlights and potentially reducing diesel markets sometimes run by conflict actors, while ensuring healthy and environmentally friendly access to renewable energy for people and businesses.

7.2 Reflections on case studies not included

Many initiatives reviewed for this report were in the start-up phase, not yet implemented, or could not provide sufficient details on results or impact.⁵⁵ Reporting results of climate security projects proves very difficult, as it is hardly possible to determine whether conflict or tensions are avoided as a result of the project. Numerous large-scale initiatives operating in various regions tend to present their results in mere global numbers of impact, without including any regional nuances or evidence. Such macro-level indicators can mask reality and create false expectations. The number of trees planted or amount of soil restored may in practice not reap the same scale of benefits as anticipated. Proving impact is an inherent risk to identifying climate security practices, but presenting project results, or lessons learned, should also be considered. Transparency and reflection on the work done is necessary to guide the community of practice further and enhance impact. In particular, emphasising the lessons learned from implementing projects could help others to improve their strategies.

While some project results were ambiguous, other projects seemed to still be in the start-up phase and could not yet provide further details. Such projects have therefore not been included in this study but host potential good practices in the climate security

55 See annex 2 for an overview of other projects that were studied but not included in this report for various reasons.

realm. One such initiative is the Energy Peace Partner's *Powering Peace* project, which identified the high potential of utilising renewable energy for the UN mission in the Democratic Republic of Congo. Implementation of these recommendations could potentially end up in a future assessment of what climate security practices exist. The next step would be to consider how to evaluate the impact of the projects or activities in terms of their contribution to peace and stability.

In line with the applied definition of climate security practices, broader mainstreaming activities such as those run by the EU and the UN are not listed. The EU, for example, is increasingly mainstreaming climate security into its system of foreign policy and defence. Climate security discourse is being integrated into various departments and security missions, and climate indicators are included as a mandatory component of conflict analysis and early warning systems.⁵⁶ The UN established a joint Climate Security Mechanism (CSM)⁵⁷ in 2018 to promote integrated approaches to climate security challenges in the UN system. The CSM seeks to advance collaboration across different pillars in the UN system to help make peace and security efforts climate-proof and make climate and development work conflict-sensitive. This means incorporating climate risk analysis into conflict assessments, prevention strategies and programming efforts. The mechanisms of the EU and the UN, as well as efforts by militaries and development agencies, to develop climate security practices are essential to expand action on the ground.

This is all the more important because currently the practice is still limited, which strongly contrasts with the high number of risk assessments and analysis of the climate security relationship. Many recommendations made have not been translated into action on the ground. This tendency to seek to understand the risks and threats of climate change, but not to act on this knowledge, could be considered a missed opportunity.

56 Niklas Bremberg (2019). 'EU Foreign and Security Policy on Climate-Related Security Risks', Stockholm International Peace Research Institute.

57 DPPA 'Addressing the Impact of Climate Change on Peace and Security', accessed October 2020, <https://dppa.un.org/en/addressing-impact-of-climate-change-peace-and-security>.

8 Conclusions and recommendations

This report analysed practices in the climate security field to create an overview of what practices exist and what can be learned from those practices. Many reports, policy briefs and programmes discuss the importance of including climate security practices in the field of peacebuilding, defence, diplomacy and development. However, few projects can be found that have been implemented, monitored and evaluated. Hard evidence on which practices work best is thus lacking due to a limited number of studies and lack of clarity with regard to if and how to measure impact or a successful outcome of an activity. For reporting on practices, it is important to consider indicators of the activity's climate security impacts, which can then be assessed after implementation. Moreover, reporting lessons learned and key achievements is essential to furthering the community of practice.

The climate security practices discussed in this report addressed different pieces of the puzzle. They addressed: the slow impact of climate change on soil productivity, food security and livelihoods; building resilience against extreme weather events; and the increasing strain that can be put on intercommunal trust and natural resources. Several or all of these practices may be useful in certain contexts where climate change is affecting peace and security. Together they bring the field forward and secure the resilience of people, food production and resource availability, thus reducing the strain on conflict drivers that may arise as climatic conditions change.

However, it is impossible for one actor or one project to address all climate and security dimensions. Therefore, it is essential for actors from different sectors to work together, to be transparent about the work that is being done and what lessons can be learned from it, in order to work towards the ultimate aim of enhancing climate adaptation, stability and the nexus between climate and security. This also means that actors from different sectors must cooperate and learn from each other's experiences about what is and what is not possible in a certain context. In the end, what counts is not the actor that delivered the service but the impact made on people's lives.

That being said, climate security practices are especially needed in conflict-prone areas, as building resilience to climate change could significantly contribute to security. However, further research is needed to better understand how climate change and natural resource management activities compare to other conflict prevention and peacebuilding efforts, in terms of their effectiveness and costs.

The wide variety of actors in this field also brings with it a discrepancy in the financial comparability of the projects. The budget of each project is dependent on the length of implementation – whether it comprises a delimited project such as UNDESERT or a structural approach such as that of EcoPeace Middle East. Therefore, a comparison of what could be done with what amount of money is currently impossible. We have nevertheless included the budget and funding agency in the tables in annexes 1 and 2, to give a more comprehensive picture of the climate security practices. What stands out is that the EU, USAID and other national donors are actively funding projects in the climate security realm but that the private sector is not yet very engaged in the field.

In conclusion, the field of climate security practices is developing, but both the security community and the climate community still have cold feet or are just entering this integrated field, although there is a huge potential to catalyse more sustainable and long-term peace and stability.

Recommendations

As a result of the research findings, this report includes seven recommendations.

1. All actors should, whenever appropriate, report more transparently and systematically on the progress, pitfalls and successes of their climate security practices. In particular, indicators of climate security impact, lessons learned and key achievements should be reported more regularly. In that way, the community of practice can leverage the climate security nexus to promote peace and stability more effectively.
2. Actors in development, diplomacy and defence should work together on building climate security and learn from each other's practices to understand what initiatives do or do not work in specific contexts.
3. Military missions by the UN and EU could more often consider supporting and facilitating efforts by civilian actors to engage in environmental peacebuilding, climate adaptation and mitigation projects. They could help to ensure a safe(r) operating space for humanitarian aid workers aiming to address the climate security nexus on the ground. Short-term projects should consider and plan for how the initiative might enhance climate security after its termination.
4. Policy makers and practitioners should focus on the bigger picture to recognise positive contributions to peace and security, as it is often not possible to specifically measure this in exact or quantitative indicators.
5. Resources for activities that aim at fostering peace and stability through climate-related interventions cannot easily be linked to results-based indicators. Actors engaged in the climate security field should to accept higher risks of project failure, alternative result indicators and potentially reduced effectiveness due to an unstable working environment.

6. In order to improve the effectiveness (and prevent negative outcomes) of climate security interventions, both the contributions to climate change and security policy objectives should be made explicit, monitored and evaluated. This may require innovations in monitoring and evaluation methodologies, and a (temporary) acceptance of higher risk levels to facilitate learning.
7. Security actors should more often consider climate adaptation as an entry point in order to work on patterns of governance failure, inequality and marginalisation that drive conflict.

Annex 1: Overview of climate security projects included in the report

Title	Actors	Country of implementation	Type	Goal	Success?	Year of implementation	Type of actors	Fund	Link
UNDESERT	Aarhus University & partners	Burkina Faso, Mali, Niger, Senegal	Climate adaptation and resilience with spin-off for peace and security	Soil restoration and combat land degradation through agro-ecological farming practices, increasing food security	Soil restoration and reduced land degradation succeeded. However, conflict in Burkina Faso for example makes it hard to establish where the project is standing now.	2010-2015	Academia, local community	EU-FP7-Environment, EUR 3.499.378,70	http://undesert.neri.dk/index.php?page=Home
Weather-index insurance	CGIAR Research Program on Water, Land and Ecosystems & International Water Management Institute	India	Bolstering disaster risk reduction for extreme weather	Reducing income and livelihoods losses of small-holder farmers due to impacts extreme weather events such as droughts and floods on agriculture and livestock	In India, the project succeeded in three pilots to reduce the vulnerability of farmers in extreme weather events.	2017-2019	Private sector, international organisation, academia	N.a.	https://hdl.handle.net/10568/106053 + https://link.springer.com/article/10.1186/s40100-015-0044-3

Title	Actors	Country of implementation	Type	Goal	Success?	Year of implementation	Type of actors	Fund	Link
Good Water Neighbors Project	EcoPeace Middle East	Jordan, Israel and Palestine	Dialogue and cooperation on shared scarce natural resources, as part of peacebuilding effort	Establish trust and cooperation in cross-border villages on shared natural resource management, to reduce hostilities over natural resources and indicate that peace is possible between the communities	The project brought together 28 villages with a cross-border neighbouring village to discuss and build trust around their shared natural resource. Sewage of Palestinian wastewater established in Israel to avoid pollution of river. Improving sustainable farming in Jordan joined with neighbouring Israelis.	2002-Present	NGO-local	Swedish International Development Agency (SIDA) and USAID West Bank/Gaza CMM	https://old.eco.peaceme.org/projects/community-involvement/
Peace Renewable Energy Credits	Energy Peace Partners, Nuru, 3Degrees, Microsoft	Democratic Republic Congo	Financial mechanism for investment in sustainable energy in fragile countries	Increase investments in renewable energy in fragile countries with violent conflict, to lift people out of energy poverty, enhance safety and increase human security.	First project of streetlights run on solar energy in Goma was successful, increased safety at night, enabled shops to stay open later and reduces markets of diesel.	2020-Present	NGO-international, private sector	N.a.	https://www.energypeacepartners.com/prec

Title	Actors	Country of implementation	Type	Goal	Success?	Year of implementation	Type of actors	Fund	Link
Inter Collectivité du Sourou	Netherlands Embassy, CARE Mali, local communities	Mali	Governance structure for inclusive natural resource management and stability	Establish locally governed natural resource management based on the Sustainable Development Goals, to reduce security risks related to resources	The Inter Collectivité du Sourou was established to govern 26 municipalities in the Sourou region, built on community input and design of action plans and receiving approval of the government and ministries to govern without their constant involvement.	2017-Present	State-central, state-local, NGO-local, External state/donor, local community	Netherlands Embassy 5-year fund	https://www.eia.nl/documenten/00000459.pdf
3S Initiative	3S Initiative	Africa	Investments, rural job creation, agroecological farming	Tackling the root causes of migration and instability: youth unemployment, land degradation for security, sustainability and stability.	Initiative is in the start-up phase and has a specific project in The Gambia that has been started in 2019, but not able to determine results yet.	2017-Present	Inter-governmental	Ankara Initiative, European Union, United Nations Convention to Combat Desertification, Italian Development Cooperation	https://3s-initiative.org/en/home/

Title	Actors	Country of implementation	Type	Goal	Success?	Year of implementation	Type of actors	Fund	Link
Juba Peace Agreement	Sudan Transitional Government, the Sudan Revolutionary Front (SRF), Minni Minawi's Sudan Liberation movement	Sudan	Natural resource management included in peace agreement	Resolve disputes about land, and revenues of natural resources that are drivers of conflict in Sudan	Not available yet.	2020	State-actor, non-state actors to conflict	N.a.	http://constitutionnet.org/vl/item/summary-and-analysis-sudans-2020-peace-agreements
French Defence Forces	French Ministry of Defence	France and abroad	Investment in sustainable and self-sufficient military interventions to reduce local tensions relating to resource usage and impact on climate.	Reduce the impact of the military on the environment, by transitioning to renewable energy	Not available yet.	2016-Present	State-actor, military	EUR 500 million (2020-2026)	https://www.defense.gouv.fr/content/download/592948/10040253/file/Chiffres%20cl%C3%A9s%20de%20la%20D%C3%A9fense%20-%202020-%20-%20UK.pdf

The PSI website provides an updated list of climate security practices under <https://www.planetarysecurityinitiative.org/climate-security-practices>

Annex 2: Overview of climate security projects not included as case studies

Title	Actors	Country of implementation	Type of intervention	Goal	Success?	Year	Type of actors	Funding/resources	Link
Powering Peace	Energy Peace Partners, UN	DRC	Sustainable energy use of UN peacekeeping missions	Report advising how the UN mission in the DRC can benefit from renewable energy use.	Still in start-up phase	2018	NGO		https://www.energypeacepartners.com/powering-peace
European Union	European Union		Institutional response, mainstreaming climate security.	Integrating climate security into the system, foreign policy and defence.	Not available yet.	2019-Present	International organisation	25% of External Action Service Budget	
United Nations Climate Security Mechanism	UNEP, UNDPPA, UNDP		Institutional response, mainstreaming climate security.	Integrating climate security into the system, missions and mandates.	Not available yet.	2018-Present	International organisation	Group of member-states, including Sweden & Netherlands	

Annex 3: Explanatory table on types of interventions

Please note that these types of interventions can overlap.

Type of intervention	Working definition
<i>Financial</i>	Financial interventions can include, among others: <ul style="list-style-type: none"> • Investment scheme • Insurance scheme • Budgetary allocations
<i>Technical</i>	Technical interventions include the construction of infrastructure or other physical or virtual/digital constructions, such as: <ul style="list-style-type: none"> • Renewable energy infrastructure • Waste water sewage • Desalination plant • Digital tool for disclosing accurate weather information
<i>Political</i>	Political interventions take place on a level of policy and dialogue. These include: <ul style="list-style-type: none"> • Dialogue • Peace agreement • National/institutional policies
<i>Military</i>	Military interventions take place in the military domain, for example: <ul style="list-style-type: none"> • Policy specifically targeting military action
<i>Agricultural</i>	Agricultural interventions include: <ul style="list-style-type: none"> • Soil restoration • Agroecological farming practices • Water harvesting techniques
<i>Community/Dialogue</i>	Community/dialogue interventions aim to bring together (groups of) people around the table, to discuss cooperation, shared grievances, among other topics. The aim is to create a mutual understanding of standpoints and wishes.
<i>Knowledge sharing</i>	Knowledge sharing interventions often take place between academia and communities, where the knowledge about a specific topic is shared among the groups to combine the insights on the topic.
<i>Water</i>	Water interventions take place where water is the main object of interventions: <ul style="list-style-type: none"> • Combating pollution, sometimes through technical, behavioural or policy interventions • Technical interventions (fresh water infrastructure, waste water treatment plants, sewage, water purification and distribution to households) • Bringing water to communities by trucks • Humanitarian efforts to relieve acute water stress • Provisions on water sharing between people
<i>Environmental</i>	Environmental interventions are (partly) driven by the impact of a certain practice on the environment. Increasing renewable energy access in communities or military missions for example, are interventions that are partly driven by the wish to reduce environmental harm of diesel-generated energy.