

2. CLIMATE SECURITY OBSERVATORY

ACTION AREA	FOOD SYSTEMS RESILIENCE
SOLUTION CLUSTER	HUMANITARIAN-DEVELOPMENT-PEACE (HDP) NEXUS
THEMATIC AREA	HUMANITARIAN-DEVELOPMENT-PEACE NEXUS
SUBMITTED BY	CGIAR

WHAT IS THE RISK, SHOCK, STRESS THAT THE SOLUTION IS TRYING TO ADDRESS?

WHAT IS IT?

This solution is called: Climate Security Observatory: qualifying and quantifying the climate security nexus in real time through monitoring, assessment and forecasting evidence to inform peace and security programming, policy and finance.

Current solutions submitted under the Humanitarian – Development – Peace Nexus (Food Resilience Cluster) do not directly address the role of climate as “threat multiplier” of land, water and food systems risks and insecurities that could impact on peace and security globally. The Climate Security Crisis Observatory aims to fill this gap by providing real time sub-national, national and international evidence on how climate exacerbate existing risks and insecurities on land, water and food systems that could increase grievances, tensions and conflict, i.e. the otherwise called “climate security nexus”.

The Observatory will monitor, assess, and alert policy makers on the existing and upcoming climate security crises. It encompasses four main innovations/technologies at regional/national/sub-national level: 1) Complexity driven impact pathways of the climate-conflict nexus; 2) Real time and almost real time monitoring of the interaction of climate, conflict and other insecurities, using big data and machine learning approaches; 3) Forecasting of the risk of conflicts and insecurities; 4) Automatised spatial and hot-spot analyses to regularly identify highly insecure and fragile areas and their main drivers.

The main objective of the CS Crisis Observatory is to inform policies, programming and investment decisions of national and international policy makers, humanitarian and development actors and CGIAR. The Observatory will help these actors to ensure that their action, interventions and investments are climate security sensitive. Each CS initiative will provide detailed qualitative and quantitative evidence on the climate security nexus at global, regional, national and sub-national level. It will do so by monitoring, assessing and forecasting how climate exacerbates existing socio, economic and political insecurities.

The Observatory will have a tremendous peacebuilding potential by informing policies, programming and investment decisions of national and international policy makers, humanitarian and development actors and CGIAR. More specifically, it will provide answers to the following questions: What are the areas most vulnerable to climate induced insecurities (where)? Which vulnerable groups should be prioritised to ensure stability and peace (for whom)? What are the most effective interventions (policy, programmes, investments) for ensuring peace and security in a climate crisis (what)? How can existing institutions and stakeholders strengthen peace and security in a climate crisis (how)?

The solution is proposed by CGIAR. Through a collaboration with SIPRI and WFP, we have already applied the Climate Security observatory approach to the Central American Dry Corridor (El Salvador, Nicaragua, Honduras and Guatemala) and Ethiopia. In Ethiopia, the digital interface is under development in collaboration with WFP HQ and country office (CO) and will be incorporated in Ethiopia WFP Hunger Map to inform WFP CO’s Country Strategic Planning process and other national and international decision-making processes, such as within the UNCCA (UN Common Country Assessment). The Observatory will

be scaled out to additional 6 - 8 countries in Africa in the next months and CGIAR and partners plan to scale it out to other regions and continents in 2022, with the ambition of having global coverage.

RISKS THAT THE SOLUTION AIMS TO ADDRESS

The Observatory will monitor, assess, and forecast multiple risks and insecurities across the ecological, socio-economic, and political systems as well as identify critical interactions among these. As climate factors tend to act as risk multipliers, the latter of these is particularly significant, and as such effective climate security monitoring and forecasting must be cross-dimensional in nature and capable of mapping complex causal pathways that run through ecological, economic, and socio-political systems.

Two key related insecurities the Observatory will subsequently seek to address are livelihood and food insecurities. Climate variability, often in the form of increasingly common extreme weather events such as extreme drought and flooding, is set to increasingly undermine the viability of rural livelihoods across the globe by increasing the chance of crop failure and reducing agricultural yields, for which those living in fragile and climate-vulnerable contexts are often poorly prepared. Furthermore, individuals who choose to migrate in the face of climate pressure are likely to find themselves in equally insecure, sub-par, and sometimes dangerous (urban) settings. These risks can be demographically compounded, with increased risks for youth, the elderly, women, and the ethnically or culturally marginalised, who due to structural or socio-cultural inequalities have a higher degree of vulnerability to climate impacts. Climate variability may also cause community- or identity-based insecurities, as the breakdown of long-standing systems of production erodes traditional social and economic relationships as well as the attachment a community feels to a particular place. In addressing these insecurities, the Observatory will simultaneously seek to minimise the risk of instability or conflict that may indirectly emerge as a result of the impact of climate variability.

There are several pathways through which the risk of conflict emerges in this context, including:

- Low-intensity conflict over access to scarce resources, for instance between mobile pastoralist and sedentary agriculturalist communities
- Social tension and/or conflict that has emerged as a result of scarcity-induced tensions between climate-migrants and host populations, for example over access to jobs, natural resources, or public services
- Food and livelihood insecurities are exploited by armed/criminal groups, who may seek to become the de-facto authority in a particular area by providing public goods or offering an alternative source of income

The Observatory will seek to address the risk of tension, instability or conflict by contributing to conditions and factors known to reduce the likelihood of violent conflict emerging, which include:

- Assisting national, local, or community authorities in developing the capacities to provide adequate and appropriate services and equitable access to public goods
- Provide timely and relevant data/evidence for the creation and implementation of appropriate climate adaptation plans and frameworks
- Help scale-up innovative technologies and climate-smart practices through which economic livelihoods are safeguarded

HOW DOES THE SOLUTION IMPROVE OR ENHANCE RESILIENCE OF FOOD SYSTEMS?

The mechanisms that give rise to the climate security nexus are inherently complex, and involve the interaction of ecological, social, economic, and political systems. These systems contain processes that interact with each other across multiple spatial and temporal scales. Slow-onset climate degradation, for instance, plays out over much longer timescales than say individual crop or election cycles, whilst localised socio-economic or political phenomena are simultaneously intertwined with processes occurring at a much larger spatial scale, such as globalisation, urbanisation, and spatially diffuse climatic shifts. These cross-scalar and cross-temporal interactions crucially give rise to processes of change defined by non-linearity, unpredictability, and in many instances, unknowability. Resilience in this sense therefore translates into confronting the inherent uncertainty that lies at the heart of the climate security interface, something which requires programmatic and legislative interventions to be adaptive.

Adaptive approaches are cognisant of complex adaptive system behaviour and actually attempt to replicate and harness the same processes through which such a system evolves in order to improve an intervention's effectiveness. Complex adaptive systems co-evolve together with their environment in a never-ending process of iterative adaptation, utilising experimentation and feedback to generate knowledge about the system's environment. Intervention strategies informed by these processes are becoming increasingly accepted across several sectors. Within the field of development, for example, adaptive management seeks to apply these principles to development interventions (Wilson, 2016). Equally, adaptive peacebuilding has become a prominent force within peacebuilding programming and literature (de Coning, 2018). These approaches consist of iterative cycles of learning, starting with analysis and assessment. On the basis of the analysis, multiple possible options for influencing a social system are generated that may have the same broad objective. A selected number of these intervention options are then implemented and closely monitored, with a view to identifying the feedback generated by the system in response to each intervention. The feedback is then analysed, after which those responsible for the intervention, together with key stakeholders, decide which initiatives to discontinue, which to continue and, in addition, what adaptations to introduce for those that are continued (de Coning, 2018).

The two key factors in this process are variation and selection: there needs to be variation in the form of multiple, parallel interventions, and there needs to be a selection process through which effective interventions are replicated and scaled-up, and those that do not have the desired effect are discontinued. Crucial in this entire process is the recognition that the overall environment and system are constantly changing, and that our understanding of the system needs to change with it. Adaptive approaches are therefore reliant upon a continuous and long-term process of knowledge generation and evaluation, as no matter to what extent an intervention's objectives are agreed upon by a broad range of stakeholders, we cannot know from the outset exactly how to achieve it (as is assumed in conventional deterministic-design models). An adaptive approach allows activities to proceed despite this uncertainty, and provides a science-based learning process characterised by using outcomes for evaluation and adjustment (Murray and Marmorek, 2003).

It is by supporting and informing this process through which the Africa Crisis Observatory will contribute to the improved resilience of food systems. By deploying an innovative and multi-disciplinary set of methodologies, the Observatory will provide real-time and almost real-time policy and programme-relevant climate security evidence and analysis, based on a combination of scientific and political analyses. In doing so, the Observatory aims to become a crucial tool through which decisionmakers can effectively monitor and evaluate the climate security implications of their interventions and initiatives. Not only will this support programming and policy in remaining responsive to changing climatic and socio-political contexts, but it will also take steps to bridge the gaps that conventionally exist between science and policy. The Observatory is built based on the recognition that the science-policy interface consists of a 'messy', complex set of interactions that in essence form a social process, within which meanings, framing, and concepts are debated, negotiated, and co-produced (Van den Hove, 2007). Producing climate-science evidence in isolation from other dimensions which play a role in the policy formation process subsequently leads to the production of ineffective and sometimes irrelevant scientific evidence. To counter this, the Observatory is consciously a multi-disciplinary initiative within which scientific evidence is generated alongside socio-political analyses to produce policy-relevant, timely, and impactful climate security analysis.

IS THE SOLUTION RELEVANT TO BUILDING FOOD SYSTEMS RESILIENCE?

Anticipate shocks/risks/stress and/or reduce vulnerability, Manage risks, Prevent (reduce exposure), Absorb, respond/cope, Adapt to shock-affected scenarios and evolving risk scenarios

IN WHAT REALMS OF INTERVENTION IS THE SOLUTION DESIGNED TO ACT ON RESILIENCE?

Household, Community, Land/sea-scape, Institutional

WHO ARE THE MAIN ACTORS THAT WOULD PUT THIS ACTION INTO PLACE?

Policymakers (government), Private (businesses, etc.), Civil (NGOs, etc.), Scientists

WHAT IS THE POLITICAL SUPPORT FOR THIS IDEA? DOES THE IDEA HAVE ANY MEMBER STATES OR POLITICAL INTERESTS? ARE THERE ANY STAKEHOLDERS WORKING ON IT?

The solution is proposed by CGIAR. Through a collaboration with SIPRI and WFP, we have already applied the Climate Security observatory approach to the Central American Dry Corridor (El Salvador, Nicaragua, Honduras and Guatemala) and Ethiopia. In Ethiopia, the digital interface is under development in collaboration with WFP HQ and country office (CO) and will be incorporated in Ethiopia WFP Hunger Map to inform WFP CO's Country Strategic Planning process and other national and international decision-making processes, such as within the UNCCA (UN Common Country Assessment). The Observatory will be scaled out to additional 6 - 8 countries in Africa in the next months and CGIAR and partners plan to scale it out to other regions and continents in 2022, with the ambition of having global coverage.

IS THE SOLUTION APPLICABLE AT GLOBAL LEVEL, OR SPECIFIC CONTEXTS & PARTICULAR COUNTRIES?

The Observatory will be global in coverage, but provide analyses at sub-national, national, regional and global level.

WHAT ARE THE KEY ACTIONS REQUIRED TO ADDRESS THIS SOLUTION?

We live in a world of increasingly unpredictable, more frequent, and more violent climate impacts, where the most vulnerable are also the most exposed to climate shocks and stressors and are less able to improve their resilience capacity against those. In conflict settings, the impact of climate on food security, poverty, inequality and other existing threats and vulnerabilities may push the poorest and the most vulnerable into a spiral of further risks, insecurities and social exclusion. Similarly, in fragile context, additional deprivations generated by the inability of the poorest households to cope with the climate impacts, can significantly increase competition over essential resources, such as food, and cause the insurgence of grievances, tensions and conflicts. The solution Acknowledging, qualifying and quantifying the role of climate on peace and security as a "threat multiplier" has become priority for many national and international policy makers. This is because IF policy makers and investors' decisions are "climate security" aware and sensitive, i.e. aware and informed of the linkages between climate and peace and security – the "climate security nexus", THEN the impacts of climate exacerbating threats and risks can be mitigated, therefore reducing the likelihood that these risks become triggers of grievances, tensions and conflict, effectively contributing to the prospect of peace. The main objective of the Climate Security observatory will be make decision makers "aware and sensitive" to climate security issues and how the climate crisis interacts with food systems and peace. Its aims are to elicit evidence on the way climate can exacerbate existing socio-economic risks and insecurities in the food systems that could trigger tensions, instabilities and conflict. It will do so by using a combination of conventional and unconventional mixed-methods and data to enrich our knowledge of the complex, context specific and dynamic pathways through which climate affects the risk of conflict. It will assess the connecting nodes between climate-induced food insecurity and conflict.

The analyses will be updated and run on a regular basis to align and inform national and international policy makers' understanding of the climate and conflict nexus, related linkages and resulting country needs, and support organizations in addressing these through future country development plans. The evidence produced by the observatory will be sensitive to the multi-dimensionality, complexity and localised nature of the climate security nexus. Hence, multiple pathways of the climate security nexus can be identified. Scheffran et al. (2012), for instance, argue that climate indirectly affects the likelihood of conflict outbreaks through multiple channels such as water shortage, crop failures, human migration, and institutional effectiveness. Specifically, in agricultural households, climate variability and extreme weather events are likely to affect incomes through reduced agricultural outputs. Opportunity costs theory

implies the existence of a strong inverse relationship between rebellion and incomes from agricultural activity (Dal Bó & Dal Bó, 2011).

Hence, the loss of agricultural income due to the negative impact of climatic conditions could trigger conflict events. Additionally, climate-induced migration can burden competition over resources such as land, employment, education, health care and social service and possibly cause ethical tensions (Brzoska & Fröhlich, 2016; Reuveny, 2007). These pathways are also very contextual and highly complex. The causal relationships such pathways represent are more often than not highly non-linear in nature, as climate processes occurring over comparatively long-time scales and across wide spatial areas interact with much more localised socio-political processes with far shorter lifecycles.

The highly emergent nature of any insecurities or attendant conflict points to the importance of understanding these cross-temporal and cross-spatial, global-to-local sequences through appropriately contextualised lenses. Whilst the effects of climate variability may play out across the globe, they will be experienced differently depending on local socio-economic, political, and cultural characteristics, and each interaction will be to some degree unique. Its rigorous, multi-dimensional, complex and highly localised nature makes the research produced by this observatory on climate security the ideal “evidence base” of any country, regional and global level facilities, networks or hubs of humanitarian, development and peacebuilding actors, local communities, analysts, and funders that faces the identifiable risk, reality or aftermath of violent conflict and its humanitarian impact. The proposed solutions within this sub-clusters, such as the Global Network against Food Crises (France, EU, FAO, WFP); Humanitarian-Development-Peace nexus to minimize future humanitarian needs (USA); Food & Peace facility in conflict-related humanitarian crisis (Wave 1 Peace Working Group); Global Centre on conflict and hunger (Wave 1 Peace Working Group), do not directly qualify and quantify the role of climate as “threat multiplier” for the land, water and food systems. The Observatory will provide rigorous and up-to-date evidence on how climate exacerbate existing socio-economic and political risks and insecurities to help decision makers in the design, implementation and assessment of policies-, short- and long-term programs and investments that are aware and sensitive of the interrelations between climate, socio-economic and political insecurities at sub-national, national and international level, benefitting millions of people across the globe.

ARE THERE ANY FINANCIAL SOURCES/FUNDS THAT IS SUPPORTING THIS IDEA?

The Climate Change, Agriculture and Food Security CGIAR research programme has invested in an “Africa Climate Security Crisis Observatory”, which will be implemented for the following regions: Sahel, Eastern and Southern Africa and MENA, for a selection of countries in each region. Also, a pilot of the Climate Security Observatory digital interface is under development in partnership with WFP. The pilot will be implemented in Ethiopia and will be hosted by the WFP Hunger Map dashboard.

HOW DOES THIS SOLUTION CONTRIBUTE TO (A) EMPOWER WOMEN AND COMBAT GENDER INEQUALITIES, AND (B) THE FULFILMENT OF HUMAN RIGHTS, ESPECIALLY THE RIGHT TO FOOD AND THE RIGHT TO WATER, (C) MAKE USE OF INNOVATIONS (TECHNOLOGIES, INSTITUTIONS, PROCESSES)?

A) By deploying multi-dimensional and multi-disciplinary methodologies to compliment the production of climate science evidence, the differentiated impacts of climate variability can be identified and brought to the forefront. This includes, crucially, a gender lens. The climate security nexus creates specific and unique challenges for men and women. Whilst drought-induced economic hardships have forced men to migrate into urban areas to find new job opportunities or join armed groups to earn money (Yishak, 2019), and adolescent boys face the prospect of being taken out of school to help with household labour and water collection (Le Masson et al., 2016), women and girls have become disproportionately more vulnerable and exposed to violations of their rights. Water stress and scarcity have placed women and girls at higher risk of exploitation, harassment, and violence (Swarup et al., 2011), visible for instance in the increasing number of families selling girls for early marriage in exchange for livestock (OCHA, 2017). Combined climate shocks, gender-based violence and discriminatory social norms and practices have compromised the productivity and adaptive capacity of women who rely on rain-fed agriculture and natural resources for their livelihoods. In several areas

of rural Ethiopia, women have limited access to farmland, water and agricultural credits compared to men, and this structural condition has been further aggravated by climate-induced scarcity that has caused women to lose their traditional control over resources (Wossen, 2016). Low access to agricultural market and restricted livelihood options have led women to experience widespread poverty and severe food insecurity, making them particularly susceptible to trafficking, sexual abuse and forcing them to migrate into local towns or enter prostitution to earn money (Swarup et al., 2011). Analysis of climate variability and how to respond to it, therefore, go hand in hand with the need to understand gender-differentiated impacts and challenges in order to make climate adaptation programming gender-sensitive. The climate crisis is as much a threat as it is an opportunity to leverage change in gender inequalities.

- B) Climate variability in and of itself can threaten the human right of access to food and water. The Observatory contributes to the fulfilment of human rights by providing data and evidence to ensure land, food, and water systems-based programming is responsive and effective. Furthermore, the Observatory will also help improve understanding of how climate variability can exacerbate and perpetuate existing- as well as create new- inequalities. Climate variability can interact with structural inequalities based on age, gender, ethnicity, and economic status, causing limited access to resources, goods, and services that are fundamentally a human right, including the right to food and water.
- C) The Observatory will deploy several innovative technologies and methodologies at the regional, national, and sub-national level in order to qualify and quantify the climate security nexus in a particular context. These include complexity-informed impact pathways of the climate-conflict nexus; real-time monitoring and risk forecasting of the interaction of climate, conflict, and other insecurities using big-data and machine learning approaches; and automated spatial and hot-spot analyses to regularly identify highly insecure and fragile areas and their main drivers.