General Information

Fund	MPTF_00249: Complex Risk Analytics Fund (CRAF'd)										
FMP Record	MPTF_00249_00011: Geoguard: Geospatial Dashboards for Climate Assessment and Early Warning										
MPTFO Project Id											
Start Date											
End Date											
Applicants	Status Contact Type Name e-mail Position Telephone							ephone	Skype		
	Active: 08-Mar-2023 9:05:00 AM	Project Ma	inager	Daanish Masood Alavi	masoodd@un.org						
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Description	In January 2020, the Department of Political and Peacebuilding Affairs launched the Innovation Cell, an interdisciplinary team dedicated to helping the Department and its field presences to understand and explore, pilot, and scale new technologies, tools, and practices in conflict prevention, mediation and peacebuilding. The Cell's Geospatial Portfolio has been developing methods for the consolidation and computation of millions of earth observation data points to enhance decision-making and mitigation strategies. As part of accelerating empirical, data-driven decision-making on climate security impacts at the level of UN Missions and Country Teams as well as Member States across the Middle East and Africa, the Innovation Cell has developed Geoguard to monitor climate security over multiple decades at global scales. Geoguard displays millions of averaged data points on environmental conditions in an intuitive dashboard. It is a tool for decision-makers seeking immediate insight on environmental risk-factors throughout specified regions and snapshots in time, linked to trends in social unrest, and can visualize data at sub-national administrative levels. Funding from CRAF'd will support the expansion of Geoguard's database to encompass more of the Middle East and Central and West Africa (29 countries in total with millions of new datapoints), where climatic fragility has major transboundary ramifications, leading to 3 main outcomes: 1. Enhanced data-driven decision-making in the context of climate resilience and environment security. 2. Strengthened improvement of multilateral and multi-stakeholder cooperation over transboundary resources and issues related to climate security. 3. Improved early warning mechanisms for anticipatory action. Better coverage across regions will enable more thorough climate security engagement, information sharing, and decision-making between the UN and national and regional authorities. CRAF'd funding will also advance Geoguard's predictive modeling capabilities, enabling end-users										
Universal Markers	Gender Equality Marker	Risk									
	GEM1 - The Key Activity contributes to GEWE in a limited way	• Low Ris	sk								

Optional Markers	Fragile Context		• No					
Fund Specific Markers	Funding Window / Direct Cost	Funding Window / Direct Cost Funding Windows • Window B: Analytics that drive critical insights for crisis anticipation, prevention, and response. Call for Proposals / Round 2022 • Second Call for Proposals 2022 (Analytics and AI on Climate Fragility Risks)						
	Call for Proposals / Round							
Geographical Scope	Geographical Scope	Name of the Region	Region(s)	Country				
	Global/Interregional	Middle East, Central Africa, West Africa	AfricaAsia					

Participating Organizations and	Participating Organizations	Government/ Multilateral/ NGO/ Other		New Entities	Implementing Partners				
Partners	 UNDPPA - Department of Political and Peacebuilding Affairs 				Element 84, Armillary Services, Northwestern University				
Programme and	Participating Organization	Amount (in USD)	Cor	nments					
Project Cost	Budget Requested								
	UNDPPA	\$700,000	CRAF'd funding will support the development of modeling capabilities and expansion of Geoguard throughout the Middle East. It is requested that Tranche 2 be available in January 2024.						
	Total Budget Requested \$700,000								
	Tranches								
	Tranche 1 (80%)			Tranche 2 (20%)					
	UNDPPA: Total:	\$560,000 \$560,000		NDPPA: tal:	\$140,000 \$140,000				
	Other Sources (Parallel Funding)								
	Institutional Funding	\$200,000		nmitted funding	g by UNAMI, UNOCA, and CSM/MYA.				
	Total	\$900,000							
Thematic Keywords									
Programme Duration	Anticipated Start Date	01-May-2023							
	Duration (In months)	14							
	Anticipated End Date	01-Jul-2024							

Narratives

Title	Text
Executive Summary	This grant will enable the addition of granular subdistrict geospatial and climate fragility data from 29 countries in the Middle East and Africa to a large geodatabase and its related dashboard "Geoguard." The data will be used for modeling and forecasting climate security impacts, e.g. water diminishment and incidence of social unrest. The data will be brought to the attention of relevant Member State governments and CSOs in partnership with the relevant UN Country Teams and Missions.
	The Innovation Cell has developed Geoguard to monitor climate security over multiple decades at global scales. Geoguard displays millions of averaged data points, primarily from space-based sensors, on environmental conditions and geo-coded conflict events in an intuitive dashboard. It is a tool for decision-makers seeking immediate insight on environmental risk-factors throughout specified regions and snapshots in time, linked to trends in conflict and social unrest, and it can visualize data at sub-national administrative levels. Funding from CRAF'd will support the expansion of Geoguard's database to encompass more of the Middle East (Syria, Turkey, Iran, Israel, Jordan, Palestine, Lebanon, Oman, Saudi Arabia, Qatar, Bahrain, Kuwait, UAE, Iraq), Central Africa (São Tomé & Príncipe, Cameroon, Chad, DRC, ROC, CAR, Angola, Gabon, Rwanda, Burundi), and West Africa (Nigeria, Benin, Guinea, Côte d'Ivoire, Togo) where climatic fragility has major transboundary ramifications. Better coverage across regions will enable more thorough climate security engagement, information sharing, and decision making between the UN and national and regional authorities. This data will provide the information advantage needed to meaningfully confront climate change at regional and global levels. Because we intend to open access to this data publicly, it can democratize climate mitigation and adaptation strategies for people around the world, including multilateral political authorities, NGOs, INGOs, academics, local populations, and the private sector. Insights on micro and macro level trends can inform critical decisions made by the Security Council, set priorities by international climate actors, and shape the agenda at climate events like COP28.

CRAF'd funding would also advance Geoguard's predictive modeling capabilities, enabling end-users to forecast future risk of social unrest and potential conflict. We would integrate and validate our model using on-the-ground data from citizenled crowdsourced mobile sensor networks, and through incorporating indigenous and local knowledge, in partnership with civil society and authorities. We would construct a pipeline that ingests this data and visualizes the models on Geoguard's dashboard interface. If we are able to incorporate these various data - remotely sensed, on-the-ground validation, and local and indigenous knowledge - into a well-designed Dashboard backed by a well-tested predictive model, then we will enhance decision making and early warning capabilities related to climate security at the level of UN Missions and Country Teams, Regional Organizations, national and local authorities, and civil society actors.

Background and General Relevance	Geoguard was developed in response to the cross-cutting needs of SPMs and Country Teams. As such, they did not possess an evidence-based tool when it came to monitoring, analyzing, and making decisions related to dynamic climate security impacts within and across borders. This in turn affected and limited how SPMs and Country Teams were able to engage with local, national, and regional authorities on pressing climate-related matters.
	Geoguard works to acquire, process, and display millions of geospatial Earth Observation (EO) data points to facilitate intuitive, evidence-based decision-making. Thus far, it has proven useful for evaluating the nexus between climate fragility and conflict with our partners in Iraq and Central Africa (the 11 countries under purview of UNOCA and especially around the Lake Chad Basin), and separately, on food security and broader political engagement with the DPRK. The project has largely focused on countries in the Middle East and Africa because many of them represent the global frontline where climate security impacts are already being felt most acutely. Additionally, a large number of these countries are covered by ongoing Security Council mandates and represent matters that the Council remains seized of.
	With CRAF'd support, we want to advance our current dashboard by implementing early warning of climate risk and potential for conflict throughout the Middle East and Central and West Africa. This includes the expansion of predictive modeling efforts to encompass billions of additional earth observation data points, to elicit and incorporate indigenous and crowdsourced data pertaining to patterns and trends in pastoral migration, and to add datasets from new NASA Missions. Initial modeling experiments have found promising correlations between climate and potential for pastoral conflict within 5 countries in Central Africa. Our anticipated result is a better understanding of trends between climate security and not only pastoral conflict, but a range of other sub-state conflict types.
	While we have a foundation of proven data aggregation and visualization, we seek a significant expansion of our dashboard including automatically populating sensor-to-dashboard earth observation data, further development of our predictive modeling capability, and a suitable data pipeline between the two. Moreover, further research and experimentation is critically necessary to connect space-based data with ground truth and indigenously-sourced data (such as curated or crowd-sourced pastoral information and biocultural indicators) as a component of regional monitoring, predictive analytics, and risk mitigation. Building a diversified database from a broader range of data sources offers a holistic, 360 degree vantage point from which situations on the ground can be observed. This will enhance global conflict analyses across Geoguard.
	Critically, CRAF'd support will also enable us to invest more resources in engaging even more thoroughly and routinely with Geoguard end-users at the level of UN Missions and Country Teams, Regional Organizations, national and local authorities, and civil society actors. This will help make the tool more intuitive and better suited to the monitoring, analytical, and decision making needs of these actors.
	Upon completion, the dashboard will advance the UN's, and regional, national, and local authorities' ability to understand climate fragility, and its role in security relating to transhumance, water, and food security; translating data-driven insights into better decision-making. This in turn will generate positive impacts for transboundary cooperation, women, youth, and inclusion of local and indigenous communities. By incorporating data on a variety of indicators, this tool addresses universal security interlinkages.
Theory of Change	IF the UN DPPA Innovation Cell builds a robust, adaptable and fit-for-purpose data architecture for the Geoguard dashboard.
	THROUGH (1.1) developing and continually improving an open source and automated data infrastructure that utilizes industry-standard datasets, (1.2) downloading and visualizing this data (environmental and conflict), and (1.3) ensuring that there is sufficient capacity to provide on-demand and ongoing support to users
	THEN the intermediate outcome will be the enhancement of data-driven decision making in the context of climate resilience and environment security across the Middle East, Central Africa, and West Africa.
	IF the UNDPPA Innovation Cell engages effectively with key stakeholders, including those working in climate risk mitigation and member states
	THROUGH (2.1) creating entry points for dialogue by using Geoguard as a engagement tool, (2.2) developing a cohort of technical consultants to liaise between member countries and the project team, (2.4) undertaking outreach to stakeholders at capstone events such as COP28, and (2.5) creating and distributing a risk-mitigation report to relevant stakeholders
	THEN the intermediate outcome will be the a strengthening of multilateral and multistakeholder cooperation over transboundary resources and issues related to climate security throughout the Middle East, Central Africa, and West Africa
	IF the UNDPPA Innovation Cell continues to improve the Geoguard dashboard by adding predictive modeling capabilities
	THROUGH (3.1) the use of machine learning methods to forecast conflict, (3.2) building sufficient capacity among users

and stakeholders to interpret use of Geoguard, including th	early warnings and operationali e establishment of a steering cc	ze data, and (3.3) provio ommittee to oversee da	ding guardra ta usage	ails to ensure	the effective
THEN the intermediate outco East, Central Africa, and West	me will be strengthened early w Africa	varning mechanisms for	anticipatory	/ action acros	ss the Middle

The primary output of this project will be a newly generated conflict prediction dashboard, with the inclusion of several additional countries, that displays reams of environmental and conflict (ACLED) data on an intuitive interface. Our collaborators at Northwestern University (please see the attached PCORE document for details) will produce predictive conflict analysis via AI-enabled algorithms (including using Gaussian process regression), which will require refinement over the lifespan of this project to ensure accuracy and compatibility between differing regional and environmental conditions. In general, model validation is conducted through testing the model against existing data to see its accuracy. In other words, if the model is built on data from 2015-2020, we test the results it produces for the subsequent 3 years against actual data from 2020-2023 (on ACLED). As the attached document shows, we are currently at 85% accuracy.

This data will be displayed as a dynamic, exportable digital map within the dashboard interface, aiding rapid data analytics and reporting. The resulting capability will empower end-users with innumerable geo-analytic possibilities. By adding the dimension of crowdsourcing local and regional information, the analyst will be able to disaggregate information by age, gender, ethnicity, and education level. This data will be collected in various ways: 1) Direct engagement with local univer itie and the development of a regional network of cholar and youth organization 2) Guidance from local consultants, 3) Data acquired from private-sector mobile crowdsourcing platforms (i.e. Premise), 4) On-the-ground interviews with local communities, 5) Local news and social media, potentially including Whatsapp channels. The fusion of locally-collected knowledge, crowd-sourced data, and broad-spectrum geospatial data within a multivariate risk model yields novel possibilities when it comes to comprehensive analysis. At every step, the methodologies developed within this project will be tested and validated by a broad network of local researchers, international academic, and technical partners. This in turn will produce a framework from which other UN entities, modeling experts, and global academics can extrapolate to advance the field of risk modeling. Methods will be developed based on globally tested and validated practices, consolidated within a comprehensive literature review and macroanalysis. Research and findings on bestpractices will be published in formal academic journals and presented at global scientific conferences and forums for additional scrutiny. Validation will also rely on disparate teams (Element 84 and Northwestern University), working separately and in tandem, providing greater robustness and mutual scrutiny.

It's near impossible to eliminate all bias from research, but concentrating on designing high-quality studies and data collection methodologies is one way to limit bias in the research process. Our crowdsourcing partners (Premise) use multiple data collection methods, including surveys. These data collection methods are carefully designed to avoid and limit biases such as acquiescence bias, confirmation bias, social desirability, sampling, and question order.

Geoguard streamlines actionable analysis and decision making to a variety of stakeholders, including entities across the UN system and their in-situ partners. Because it is tailored to be useful for high-level and technical actors alike, Geoguard also democratizes situational analysis and decision making. This not only aligns with the UN priorities of supporting inclusivity and digital literacy, but builds collaborative bridges across the UN ecosystem. The Innovation Cell will regularly engage relevant country teams and SPMs throughout the design process to tailor the product to their needs, modus operandi, and deliverables. Finally, the crowdsourced data is disaggregated by gender, age, educational level, and other classifiers that provide a window into the demographic dimension of spatiotemporal climate fragility. Many of these outputs will be immediately useful for briefings and reportage to stakeholders who require regular risk assessments at local and regional levels.

Principle 1: Prioritizing the interests of populations in vulnerable situations and with an emphasis on broad stakeholder engagement, local capacity building, data/model validation, and expert analysis in the field.

Geoguard equips decision makers with actionable insight necessary to affect change in populations who disproportionately absorb the impacts of conflict, climate change, and environmental insecurity. The Geoguard project will particularly strengthen the resilience of indigenous, pastoral, youth populations, and women and girls. Regular engagement with communities on the ground, facilitated by a network of regional consultants, will bridge access gaps and streamline local use of critical data. This bottom-up approach will engender data ownership and command of security challenges they directly face. The dashboard democratizes data to minimize uncertainty for all when it comes to crisis monitoring, strengthening response and prevention strategies. Additionally, we seek to fund local participants in our crowd-sourced mapping and localized insight gathering, which will strengthen the economic outcomes for the very people we seek to address.

Principle 2: Promoting sustainability by sharing the risks, burdens, and benefits of the CRAF'd ecosystem

The DPPA Innovation Cell, and by extension this project, is committed to supporting and sustaining the CRAF'd ecosystem. Specifically, we commit to data governance, cross-ecosystem engagement with other CRAF'd partners such as ACLED, and burden-sharing. We are also committed to the responsible use of data and to open access. We will continue our engagement with CRAF'd ecosystem partners to this end.

Our goal is to mitigate conflict risk as a result of environmental (including water and food) insecurity, and conflict associated with water diminishment, transhumance, and broader climate security impacts. As we apply lessons learned from one region to another, Geoguard will positively impact risk mitigation at a global scale.

Principle 3: Committing to the responsible use of data, including the principles of fairness, transparency, and privacy

The Innovation Cell will ensure that there is an open public facing version of Geoguard that will be available to the global public. The Innovation Cell acknowledges data misinterpretation and subjectivity as a widespread problem in analysis. We attempt to mitigate this risk by drawing on standards for calculation and interpolation, continuously soliciting feedback and peer review from experts within and beyond the UN, subjecting our projects to critique in global conferences, and implementing co-design and user testing in our processes.

Human misinterpretation of earth observation data is regrettably common. We best mitigate this risk through training and equipping users with resources to fully understand what data is provided and what it indicates. We recognize the deleterious effects of misrepresentation of data in the scientific mapping community and maintain best practices of avoidance; including incorporation of data derived from long-established earth observation organizations like the European Space Agency and the US National Oceanic and Atmospheric Administration, "ground-truthing" by comparing space data with co-temporally sourced ground information, and accuracy calibration by combining multiple earth observation missions measuring the same or similar environmental phenomena with identical or within a standardized close range of results.

We believe data gathering is inherently biased and seek partnerships with people and institutions with reputable-butdiverse experiences. Through these partnerships and our core commitment to transparently gathering reputable data with broad oversight-by-peers, we seek to build processes that may be extensible globally but customized to reflect and provide value on a local level.

Principle 4: Providing open access to CRAF'd outputs

All data on the dashboard will be available for export in a variety of non-proprietary file formats, including .CSV, geotiff, and shapefile or like formats. They will be accessible to stakeholders beyond the UN system, including local INGOs, ministries, scholars, and tribal leadership.

We are working to ensure that there is an open public facing version of Geoguard that will be available to the global public. We are going to work with CTs, SPMs, and desks to ensure that any sensitive datasets (e.g. geocoded conflict events that co-relate to environmental factors in sensitive contexts) are not included in the public offering. However, all environmental data will be available.

Principle 5: Reliance on financial support beyond CRAF'd

We are committed to ensuring that this project is sustainable beyond CRAF'd funding. In that regard, the Innovation Cell presented the project in March 2023 to 4 major donor Member States. Additionally, the team is presenting the project to regional Member States in the Middle East in parallel to seek further support. In the current round of financing, the Innovation Cell is adding \$200,000 (~28%) to CRAF'd support (to a total budget of \$~900,000) for this area of work. In future years, the Innovation Cell will continue its support to this core area of activity through the DPPA Multiyear Appeal among other mechanisms.

CRAF'd Data Ecosystem Impact & Use Cases	Geoguard will be accessible to entities across the UN and their in-situ partners. Contingent on stakeholder permission, the dashboards, or regional components thereof, can be made openly accessible. The body of decision makers (UN internal and local multilateral authorities) whose work will be supported by these tools is already vast. If the dashboards are made public, this number will multiply by orders of magnitude, including for example, for academic actors and organizations like ACLED to consider how multidimensional climate security may be implicated in conflict and social unrest. Already, Geoguard is being used by UNAMI (Iraq) and UNOCA (Central Africa sub-region) to analyze climate security impacts. It has also been presented to numerous governmental, academic, and aci vii society partners in North America, Europe, Africa, and Asia. This has helped in refining the tool in a way that serves their analytical needs. Direct presentations to Member State governments (at the ministerial level as is planned for COP28) will also be helpful in drawing attention to our approach on studying climate security. This is in addition to the added value of the resource when it comes to engagement with and among Member States at a regional level. Moving forward, as we develop conflict models - using data from ecosystem partners such as ACLED among others - we will engage a broader community of actors around the study of climate security impacts, in a way that will advance this broader field. The same models will also be instrumental as a form of early warning and planning for potential crisis action on the part of the UN system and partner CSOs. Additionally, we are committed to ensuring that a version of the dashboard - with due political sensitivities taken into regard - is made fully publicly available to serve as part of global open data and digital commons.
Sustainability	Our goal is to develop Geoguard into a product our end-users will fully implement and own. The Innovation Cell team will maintain, train, empower, and facilitate (especially during each 6-10 month regional implementation); but our end-users and their regional and local partners are intended as the full owners. The Innovation Cell has and will continue to focus on early end-user adoption through "train-the-trainer" cycles of knowledge transfer to optimize the conditions for successful handover. The team will dedicate resources to identifying focal points within different departments, organizations, and agencies that will be trained on Geoguard so that they can build capacity within their respective teams. This will include individuals in UN SPMs and Country Teams, Regional Organizations, governmental line ministries (e.g. Ministries of Water and Natural Resources), and civil society. These trainers will support the further adoption and institutionalization of the tool, which in turn will increase reliance on its outputs for day-to-day operations. As this will lead to greater interest in the continued development of Geoguard, this method guarantees long-term sustainability. We involve our stakeholders and end-users from design inception throughout the development process to address project sustainability and buy-in. Additionally, we have begun a process of hiring consultants with geospatial and data visualization backgrounds in the countries and regions served by our dashboards. CRAF'd support will ensure that these local teams of scientists and trainers grow in each country and region. Our team members expand our depth and breadth of technical skill and bring a wellspring of regional knowledge into the project, critically affecting the outcome of the effort and the long-term sustainability of the project.
Scalability	The Innovation Cell has begun automating the satellite-to-dashboard pipeline, expediting updates and condensing the cost of expanding Geoguard to a regional and global scale. We are also engaging directly with NASA and its scientists to ensure that we continue a strong partnership (given so much of our data comes from open NASA sources) and so we are aware and engaged on new datasets that are coming online (e.g. NASA SWOT in Fall 2023). Geoguard's data architecture was specifically designed to be adaptable to broader security challenges, such as food security (e.g. through crop modeling), Women's Peace and Security (e.g. leveraging gender disaggregated crowdsource data), and climate security more broadly (e.g. modeling relationships between natural disasters and environmental degradation and climate vulnerability). Once these capabilities are refined, they may be transferable to other regions facing severe resource-related insecurity. Geoguard involves a historical tradition of space-enabled environmental data gathering that began in the 1970s, and cartographic principles honed over centuries. The satellite data we use is freely available and has been under the auspices of Cooperative Use of Space for over 50 years. This data is freely available and will be consistent so long as environmental space missions exist.
Innovation	By leveraging innovative approaches to uniquely disparate datasets, the Geoguard will provide scalable strategies for

monitoring the climate-conflict nexus on a multi-continental scale: including the residents of Central and West Africa and the inhabitants of the Middle East. Our work with predictive capabilities will assist with the identification of influential drivers of climate-related conflict and climate-related environmental insecurity and hotspots of increased likelihood of "flashpoint". This enables rapid, targetted, and preventative intervention strategies in high-risk areas and seasons. Engaging local stakeholders in the design process of Geoguard will equip a wider set of decision-makers with knowledge tailored to their respective needs so that they can better respond to challenges they directly face. This enables precise, self-led, and dignified adaptation strategies. Geoguard's design upholds the UN's principles of partnership and innovation and the tenet of nearly every one of the UN's Sustainable Development Goals, not just SDG 13. The Geoguard dashboard expansion will impact populations most vulnerable to environmental insecurity and assist in the mitigation of their risk. Moreover, our expansion to the Middle East will also produce meaningful impacts for transboundary cooperation, resource sharing, and global climate action. Geogaurd will generate impact at various scales, from hyperlocal to global. In itself, it is a tool for cooperation and elevating the outlooks and needs of diverse stakeholders.

The cost-effectiveness of Geoguard increased in 2020 and 2021 as we streamlined data processing and visualization in our first dashboard project. Though many geospatial projects require extremely expensive high-resolution imagery, Geoguard's database relies upon lower-resolution-but-reliable environmental satellites that form the backbone of the field of environmental analytical science. The dashboard provides a baseline for analytics and reporting, saving costs for UN projects that require environmental analysis. Furthermore, the Innovation Cell works closely with academics and experts around the world who often provide "in-kind" services because of the highly relevant nature of our work, and the increased potential for yielding academic grants and funding for our partners therein.

SDG Targets

Target	Description
Main Goals	
Goal 17. Strengthen the n	neans of implementation and revitalize the Global Partnership for Sustainable Development
TARGET_17.16	17.16 Enhance the Global Partnership for Sustainable Development, complemented by multi-stakeholder partnerships that mobilize and share knowledge, expertise, technology and financial resources, to support the achievement of the Sustainable Development Goals in all countries, in particular developing countries
TARGET_17.17	17.17 Encourage and promote effective public, public-private and civil society partnerships, building on the experience and resourcing strategies of partnerships
TARGET_17.7	17.7 Promote the development, transfer, dissemination and diffusion of environmentally sound technologies to developing countries on favourable terms, including on concessional and preferential terms, as mutually agreed
Secondary Goals	
Goal 6. Ensure availability	and sustainable management of water and sanitation for all
TARGET_6.4	6.4 By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity
TARGET_6.5	6.5 By 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate
Goal 12. Ensure sustainab	le consumption and production patterns
TARGET_12.2	12.2 By 2030, achieve the sustainable management and efficient use of natural resources
Goal 13. Take urgent actio	on to combat climate change and its impacts2
TARGET_13.1	13.1 Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries
TARGET_13.2	13.2 Integrate climate change measures into national policies, strategies and planning
TARGET_13.3	13.3 Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning
Goal 16. Promote peacefu	Il and inclusive societies for sustainable development, provide access to justice for all and build ef
TARGET_16.1	16.1 Significantly reduce all forms of violence and related death rates everywhere

SDG Indicators

Indicator Code	Description
C060401	6.4.1 Change in water-use efficiency over time
C060402	6.4.2 Level of water stress: freshwater withdrawal as a proportion of available freshwater resources
C060502	6.5.2 Proportion of transboundary basin area with an operational arrangement for water cooperation

Contribution to SDGs

Participating Organization	% TARGET_6 .5	% TARGET_13 .1	% TARGET_17. 17	% TARGET_13 .2	% TARGET_1 2.2	% TARGET_17. 16	% TARGET_1 3.3	% TARGET_1 7.7	% TARGET_6 .4	% TARGET_1 6.1	% Total
UNDPPA	20	20	20	15	5	5	5	5	5	0	100
Total contribution by target	20	20	20	15	5	5	5	5	5	0	
Project contribution to SDG by target	20	20	20	15	5	5	5	5	5	0	100

List of documents

Document	Document Type	Document Source	Document Abstract	Document Date	Classification	Featured	Status	Modified By	Modified On
<u>Transhumance Mapping</u> <u> - UNOCA Expansion.pdf</u>	Other Docs	Project Narrative	Deck showing transhumance mapping efforts and conflict modeling in the context of UNOCA	01-Jan- 2023	Internal	No	Draft	masoodd@un.org	05-Apr- 2023 1:39:43 PM
<u>UNOCA Geospatial</u> <u>Dashboard .pdf</u>	Other Docs	Project Narrative	Deck highlighting UNOCA dashboard	01-Jan- 2023	Internal	No	Draft	masoodd@un.org	05-Apr- 2023 1:38:56 PM
Iraq Water Security Presentation 1.14.21.pdf	Other Docs	Project Narrative	Deck from 2021 showing early studies in co-relation between water diminishment and social unrest and conflict in the context of Iraq	06-Apr- 2021	Internal	No	Draft	masoodd@un.org	05-Apr- 2023 1:38:04 PM
<u>Copy of 2022 Geospatial</u> <u>Portfolio (1).pdf</u>	Other Docs	Project Narrative	Deck from 2022 showing expansion of Geoguard	11-Oct- 2022	Internal	No	Draft	masoodd@un.org	05-Apr- 2023 1:37:39 PM
PCORE-Feb20-2023-to- UN.pptx.pdf	Other Docs	Project Narrative	Here is a deck showing the methodology on the conflict modeling side as applied to the UNOCA (11 countries in the Central Africa sub-region) context.	05-Apr- 2023	Internal	No	Draft	masoodd@un.org	05-Apr- 2023 11:51:04 AM
PCORE.pdf	Other Docs	Project Narrative	PCORE details our ongoing work on conflict modeling with Northwestern University,	04-Apr- 2023	Internal	No	Draft	masoodd@un.org	05-Apr- 2023 8:14:37 AM

Project Results

Outcome	Output		Description						
1. Enhanced data-driven decision making in the context of climate resilience and environment security across the Middle East, Central Africa, and West Africa									
	1.1. Data infrastructure us open-source geospatial d automatically ingest, com geospatial and geolocate	ing global, lata to npute, and map d data							
	Activities								
	Title	Description		Lead Participating Organization	Participating Organization	Other Organizations			
	Continue to improve automation of back-end data ingestion pipeline with Element 84 (geospatial engineering sub-contractor)			UNDPPA - Department of Political and Peacebuilding Affairs		Element 84			
	1.2. Download and visuali temporal environmental a	se spatio- and conflict data		1					

Outcome	Output		Description						
	Activities								
	Title	Description		Lead Participating Organization	Participating Organization	Other Organizations			
	1.2.1. Join multiple industry-standard conflict datasets (i.e. ACLED, UCDP, GTD) to create a standardised master-dataset of raw conflict data			UNDPPA - Department of Political and Peacebuilding Affairs		Element 84			
	1.2.2. Compute conflict variances from historical average to create dataset on conflict anomalies			UNDPPA - Department of Political and Peacebuilding Affairs		Element 84			
	1.2.3. Normalise and compute variances of environmental data to provide a common denominator from which disparate data can be compared and cross-analysed			UNDPPA - Department of Political and Peacebuilding Affairs		Element 84			
	1.2.4. Ingest Sentinel-3 thermal and optical data on dust storms and collaborate with UI/UX designers and geospatial engineers to create a visual template for the data to be visualised and regularly updated on Geoguard			UNDPPA - Department of Political and Peacebuilding Affairs		Element 84			
	1.2.5. Comprehensive technical review of emerging sensors and datasets relevant to climate security and conflict to ensure high quality data and programmatically implement			UNDPPA - Department of Political and Peacebuilding Affairs		Element 84			
	1.3. Sufficient capacity to demand support and dem engage with regular and users, catalogue data gap be fixed, create case-stud field user feedback for co dashboard improvement	provide on- nonstrations, prospective os and bugs to y analyses, and ntinued							
	Activities								
	Title	Description		Lead Participating Organization	Participating Organization	Other Organizations			
	1.3.1. Distribute an open call for consultants throughout UN network			UNDPPA - Department of Political and Peacebuilding Affairs					
	1.3.2. Engage directly with leadership from line ministries and UN SPMs, CTs, programmes, and agencies to designate respective representatives			UNDPPA - Department of Political and Peacebuilding Affairs					
2. Strengthened multilateral and multistakeholder cooperation over transboundary resources and issues related to climate security throughout the Middle East, Central Africa, and West Africa									

Outcome	Output		Description						
	2.1. Create entry points for through formal and sidel guiding the development operational use of Geogu	or dialogue ine events : and ard							
	Activities								
	Title	Description		Lead Participating Organization	Participating Organization	Other Organizations			
	2.1.1 Engage with Geoguard -covered countries and entities individually to assess appetite for in-person and virtual events on transboundary management strategies supported by Geoguard data			UNDPPA - Department of Political and Peacebuilding Affairs					
	2.2. Cohort of technical co liaise between member co dashboard development institutional capacity for i	onsultants to ountries and team and build its regular use							
	Activities								
	Title	Description		Lead Participating Organization	Participating Organization	Other Organizations			
	2.2.1. Distribute open call for consultancy and engage with Geoguard- covered countries to assign representatives			UNDPPA - Department of Political and Peacebuilding Affairs					
	2.2.2. Create an operational and regulatory framework for cohort to establish lines of communication, participation expectations, and protocols for engagement			UNDPPA - Department of Political and Peacebuilding Affairs					
	2.3. Institutionalized exch representatives and leade Geogaurd-covered count de ign choice of the ma aggregation to different s geopolitical boundaries)	ange between ership from ries to discuss p (i e spatial and							
	Activities								
	Title	Description		Lead Participating Organization	Participating Organization	Other Organizations			
	2.3.1. Conduct series of individual and group interviews to understand perspectives towards mapping design choices and identify value- maximizing strategies for stakeholders			UNDPPA - Department of Political and Peacebuilding Affairs					
	2.3.2. Solicit official administrative boundary maps from state leadership and UN CTs to ensure consistency and minimize political insensitivities			UNDPPA - Department of Political and Peacebuilding Affairs					
	2.4 Outreach to relevant SPMs, and CTs at capston COP28	Member States, e events like							

Outcome	Output		Description					
	Activities							
	Title	Description		Lead Participating Organization	Participating Organization	Other Organizations		
	2.4.1 Showcase Geoguard developments and use- cases at multistakeholder-facing events			UNDPPA - Department of Political and Peacebuilding Affairs				
	2.4.2. Align milestones in development and deliverables with capstone events like COP28			UNDPPA - Department of Political and Peacebuilding Affairs				
	2.5. Creation and distribut mitigation report to releve stakeholders	tion of a risk- vant						
	Activities	ctivities						
	Title	Description		Lead Participating Organization	Participating Organization	Other Organizations		
	2.5.1. Collaborate with policy analysts and representatives from different member states to catalog anticipated reservations and political sensitivities/security insecurities			UNDPPA - Department of Political and Peacebuilding Affairs				
	2.5.2. Outline a solutions-based framework around anticipated political sensitivities/security insecurities			UNDPPA - Department of Political and Peacebuilding Affairs				
	2.5.3. Create public- facing risk mitigation dossier and an internal strategy guide to reference for individual, closed-door conversations on Geoguard			UNDPPA - Department of Political and Peacebuilding Affairs				
	Conversations on Geoguard 2.5.4 Distribute feedback surveys to wider stakeholder network to field broad responses to Geogaurd's design, development, and use			UNDPPA - Department of Political and Peacebuilding Affairs				

mechanisms for anticipatory action across the Middle East, Central Africa, and West Africa		
	3.1 Forecast conflict using Machine Learning models	

Outcome	Output		Description						
	Activities								
	Title	Description		Lead Participating Organization	Participating Organization	Other Organizations			
	3.1.1. Identify primary environmental risk factors of conflict through literature review of scientific studies			UNDPPA - Department of Political and Peacebuilding Affairs					
	3.1.2 Create ingestion pipeline of historical and near-time data on environmental risk factors and conflict into modeling software			UNDPPA - Department of Political and Peacebuilding Affairs		Element 84, Northwestern University			
	3.1.3 Ingest data into models and generate future spatio-temporal probability and risk of conflict for every cell (approximately 100km x 100km swaths) within Geoguard			UNDPPA - Department of Political and Peacebuilding Affairs		Element 84, Northwestern University			
	3.1.4 Produce colorized maps displaying conflict risk based on environmental conditions and supplementary graphs indicating anomalies in conflict trends			UNDPPA - Department of Political and Peacebuilding Affairs		Element 84, Northwestern University			
	3.1.5 Create wireframes for integrating this data into Geoguard as a feature layer overlay (collaborating with data visualisation experts and UI/UX designers)			UNDPPA - Department of Political and Peacebuilding Affairs		Element 84, Northwestern University			
	3.1.6 Collaborate with modeling experts to calibrate and refine model through series of rigorous review, sanity checking, and back- testing data					Element 84, Northwestern University			
	3.2 Sufficient capacity for early warning maps and c data	interpreting operationalising							
	Activities								
	Title	Description		Lead Participating Organization	Participating Organization	Other Organizations			
	3.2.1. Provide on- demand and live trainings on the dashboard and available case-studies for guidance			UNDPPA - Department of Political and Peacebuilding Affairs		Element 84			
	3.3 Data guardrails to ens effective use of Geogaurd	ure the							

Outcome	Output		Description			
	Activities					
	Title	Description		Lead Participating Organization	Participating Organization	Other Organizations
	3.3.1. Establish a steering committee to oversee the use of early warning data, particularly as it related to transboundary severity and calls for coordination			UNDPPA - Department of Political and Peacebuilding Affairs		
	3.3.2. Conduct quantified impact analysis of Geoguard's early warning features on tangible security outcomes (including socioeconomic and sociopolitical impacts) through assessing programmes, policies, and strategies informed by Geogaurd.			UNDPPA - Department of Political and Peacebuilding Affairs		

Signature Indicators

Indicator Title	Component Title	Description	Means of Verification	Category	Cycle	Scope	Value Type	Baseline Value	Baseline Year	Target Value	Target Year	Linked Outcome / Output
No signature indicators available.												

Imported Fund Outcome / Output Indicators

Indicator Title	Component Title	Description	Means of Verification	Category	Cycle	Scope	Value Type	Baseline Value	Baseline Year	Target Value	Target Year	Linked Outcome / Output
Datasets provided in total		Total number of datasets supported by CRAF'd		Capacity	Yearly	Global	Number	10	2023	16	2024	Outcome: 1. Enhanced data- driven decision making in the context of climate resilience and environment security across the Middle East, Central Africa, and West Africa Output: 1.2. Download and visualise spatio- temporal environmental and conflict data
	Datasets provided with granularity at the sub- national level or below (spatial resolution)			Policy	Yearly	Global	Number	10	2023	16	2024	

Indicator Title	Component Title	Description	Means of Verification	Category	Cycle	Scope	Value Type	Baseline Value	Baseline Year	Target Value	Target Year	Linked Outcome / Output
	Datasets provided with at least monthly granularity (temporal resolution)			Policy	Yearly	Global	Number	9	2023	15	2024	
	Datasets provided that are disaggregated by sex, age, disability, etc. (at least one)			Policy	Yearly	Global	Number	1	2023	2	2024	
	Datasets provided with open access			Policy	Yearly	Global	Number	0	2023	16	2024	
	Datasets provided in non- proprietary formats	E.g., csv, json, xml, txt, sql (not dta, spss or similar proprietary file formats).		Policy	Yearly	Global	Number	10	2023	16	2024	
Analytics products provided in total		Total number of analytics products supported by CRAF'd		Capacity	Yearly	Global	Number	4	2023	78	2024	Outcome: 3. Strengthened early warning mechanisms for anticipatory action across the Middle East, Central Africa, and West Africa Output: 3.2 Sufficient capacity for interpreting early warning maps and operationalising data
	Analytics products provided for action frameworks, incl. for anticipatory action	analytics products that qualify as action frameworks (linking analysis to recommended action)		Policy	Yearly	Global	Number	0	2023	39	2024	
	Analytics products provided that allow comparison by sex, age, disability, etc. (at least one)			Policy	Yearly	Global	Number	1	2023	3	2024	
	Analytics products provided with open access			Policy	Yearly	Global	Number	0	2023	39	2024	

Indicator Title	Component Title	Description	Means of Verification	Category	Cycle	Scope	Value Type	Baseline Value	Baseline Year	Target Value	Target Year	Linked Outcome / Output
Participants in total		People trained through initiatives funded by CRAF'd		Beneficiaries	Yearly	Global	Number	40	2023	300	2024	Outcome: 1. Enhanced data- driven decision making in the context of climate resilience and environment security across the Middle East, Central Africa, and West Africa Output: 1.3. Sufficient capacity to provide on- demand support and demonstrations, engage with regular and prospective users, catalogue data gaps and bugs to be fixed, create case- study analyses, and field user feedback for continued dashboard improvement
Number of project partners		project partners include participating organizatioins and implementing partners		Capacity	Yearly	Global	Number	3	2023	5	2024	Outcome: 2. Strengthened multilateral and multistakeholder cooperation over transboundary resources and issues related to climate security throughout the Middle East, Central Africa, and West Africa Output: 2.2. Cohort of technical consultants to liaise between member countries and dashboard development team and build institutional capacity for its regular use
Stakeholders that use project outputs to support crisis action.		This indicator aims to measure the extent to which entities use project outputs for crisis action, including for programming, decision- making, and resource allocation.	Surveys, interviews, analysis of public policy documents/emergency response plans/reports, other documents.	Capacity	Yearly	Global	Number	2	2023	195	2025	Outcome: 3. Strengthened early warning mechanisms for anticipatory action across the Middle East, Central Africa, and West Africa Output: 3.1 Forecast conflict using Machine Learning models

Indicator Title	Component Title	Description	Means of Verification	Category	Cycle	Scope	Value Type	Baseline Value	Baseline Year	Target Value	Target Year	Linked Outcome / Output
Downloads and/or users of project outputs.		This indicator aims to measure the use and dissemination of project outputs by tracking the number of downloads and/or users of the project outputs.	Surveys, interviews, internal statistics.	Capacity	Yearly	Global	Number	20	2023	390	2025	Outcome: 1. Enhanced data- driven decision making in the context of climate resilience and environment security across the Middle East, Central Africa, and West Africa Output: 1.2. Download and visualise spatio- temporal environmental and conflict data
Knowledge and capacity building Initiatives conducted as part of the project.		This indicator aims to measure the provision of knowledge and capacity building initiatives by the project to stakeholders. The indicator reflects the extent to which the project has supported the development of skills, knowledge, and expertise related to the project's goals and objectives.	Internal tracking.	Beneficiaries	Yearly	Global	Number	10	2023	30	2024	Outcome: 1. Enhanced data- driven decision making in the context of climate resilience and environment security across the Middle East, Central Africa, and West Africa Output: 1.3. Sufficient capacity to provide on- demand support demand support and demonstrations, engage with regular and prospective users, catalogue data gaps and bugs to be fixed, create case- study analyses, and field user feedback for continued dashboard improvement

Indicator Title	Component Title	Description	Means of Verification	Category	Cycle	Scope	Value Type	Baseline Value	Baseline Year	Target Value	Target Year	Linked Outcome / Output
Publications produced as part of this project.		This indicator aims to measure the number and quality of publications produced by the project, which may include scientific reports, best practices, guidelines, and other types of knowledge products. The indicator reflects the extent to which the project has generated new knowledge, shared best practices, and disseminated findings related to the project's goals and objectives.	Internal tracking.	Capacity	Yearly	Global	Number	0	2023	2	2024	Outcome: 3. Strengthened early warning mechanisms for anticipatory action across the Middle East, Central Africa, and West Africa Output: 3.1 Forecast conflict using Machine Learning models
Understanding of the datasets / analytical tools by the key stakeholders.		This indicator aims to measure the level of comfortability and technical understanding of the datasets or analytical tool provided as part of the project.	Surveys, interviews, internal statistics.	Capacity	Yearly	Global	Percentage	10	2023	80	2024	Outcome: 3. Strengthened early warning mechanisms for anticipatory action across the Middle East, Central Africa, and West Africa Output: 3.3 Data guardrails to ensure the effective use of Geogaurd
External reports and other tangible products that feature data or analytics from the project.		This indicator aims to measure external reports and other tangible products that feature data or analytics from the project.	Internal tracking.	Other	Yearly	Global	Number	2	2023	15	2024	Outcome: 1. Enhanced data- driven decision making in the context of climate resilience and environment security across the Middle East, Central Africa, and West Africa Output: 1.2. Download and visualise spatio- temporal environmental and conflict data

Indicator Title	Component Title	Description	Means of Verification	Category	Cycle	Scope	Value Type	Baseline Value	Baseline Year	Target Value	Target Year	Linked Outcome / Output
People in fragile and crisis-affected settings benefitting from earlier, faster, more targeted and dignified assistance as a result of project outputs.		This indicator aims to measure the extent to which the project outputs have contributed to supporting people in fragile and crisis-affected settings earlier, faster, and in a more targeted and dignified way.	Surveys, reports, other documents, assessments, statistics etc.	Beneficiaries	Yearly	Global	Number	NA	2023	NA	2024	Outcome: 3. Strengthened early warning mechanisms for anticipatory action across the Middle East, Central Africa, and West Africa Output: 3.1 Forecast conflict using Machine Learning models
Stakeholders that use project outputs to support crisis action.		This indicator aims to measure the extent to which entities use project outputs for crisis action, including for programming, decision- making, and resource allocation.	Surveys, interviews, analysis of public policy documents/emergency response plans/reports, other documents.	Capacity	Yearly	Global	Number	4	2023	20	2024	Outcome: 2. Strengthened multilateral and multistakeholder cooperation over transboundary resources and issues related to climate security throughout the Middle East, Central Africa, and West Africa Output: 2.4 Outreach to relevant Member States, SPMs, and CTs at capstone events like COP28
	Stakeholders that use project outputs for crisis anticipation,	This indicator aims to measure the extent to which the project outputs are used by entities specifically for crisis anticipation, including for programming, decision- making, and	Surveys, interviews, analysis of public policy documents/emergency response plans/reports, other documents.	Capacity	Yearly	Global	Number	0	2023	195	2024	

resource		
allocation.		

Indicator Title	Component Title	Description	Means of Verification	Category	Cycle	Scope	Value Type	Baseline Value	Baseline Year	Target Value	Target Year	Linked Outcome / Output
	Stakeholders that use project outputs for crisis prevention.	This indicator aims to measure the extent to which the project outputs are used by entities specifically for crisis prevention, including for programming, decision- making, and resource allocation.	Surveys, interviews, analysis of public policy documents/emergency response plans/reports, other documents.	Capacity	Yearly	Global	Number	0	2023	195	2024	
	Stakeholders that use project outputs for crisis response.	This indicator aims to measure the extent to which the project outputs are used by entities specifically for crisis response, including for programming, decision- making, and resource allocation.	Surveys, interviews, analysis of public policy documents/emergency response plans/reports, other documents.	Capacity	Yearly	Global	Number	0	2023	195	2024	
Multilateral funding instruments and other entities that use project outputs to facilitate funding decisions.		This indicator aims to measure the extent to which the project results are used by multilateral funding instruments and other entities to inform funding decisions. The indicator focuses on the use of project outputs, such as data, evidence, and analysis, to support the decision- making processes of funding instruments and other entities involved in crisis action.	Surveys, interviews, analysis of public policy documents/emergency response plans/reports, other documents.	Investment	Yearly	Global	Number	3	2023	5	2024	Outcome: 2. Strengthened multilateral and multistakeholder cooperation over transboundary resources and issues related to climate security throughout the Middle East, Central Africa, and West Africa Output: 2.1. Create entry points for dialogue through formal and sideline events guiding the development and operational use of Geoguard

Indicator Title	Component Title	Description	Means of Verification	Category	Cycle	Scope	Value Type	Baseline Value	Baseline Year	Target Value	Target Year	Linked Outcome / Output
Funding allocated for crisis action with the support of project outputs.		This indicator aims to measure the extent to which the project outputs are used to facilitate funding decisions related to crisis action. The indicator focuses on the amount of funding allocated to crisis action that can be directly / indirectly attributed to the use of project outputs, such as data, evidence, and analysis, in decision- making processes.	Surveys, interviews, analysis of public policy documents/emergency response plans/reports, other documents.	Investment	Yearly	Global	Number	3	2023	63	2024	Outcome: 2. Strengthened multilateral and multilateral and multistakeholder cooperation over transboundary resources and issues related to climate security throughout the Middle East, Central Africa, and West Africa Output: 2.1. Create entry points for dialogue through formal and sideline events guiding the development and operational use of Geoguard
Participants in knowledge and capacity initiatives as part of this project.		This indicator aims to measure the number of individuals who have participated in knowledge and capacity building initiatives provided by the project. The indicator reflects the extent to which the project has engaged stakeholders in the development of skills, knowledge, and expertise related to the project's goals and objectives.	Surveys, registration statistics.	Beneficiaries	Yearly	Global	Number	40	2023	220	2024	Outcome: 2. Strengthened multilateral and multistakeholder cooperation over transboundary resources and issues related to climate security throughout the Middle East, Central Africa, and West Africa Output: 2.2. Cohort of technical consultants to liaise between member countries and dashboard development team and build institutional capacity for its regular use

Project Indicators

Indicator Title	Component Title	Description	Means of Verification	Category	Cycle	Scope	Value Type	Baseline Value	Baseline Year	Target Value	Target Year	Linked Outcome / Output
Stakeholder ideation and technical Exchanges		Convening cohorts of technical and subject-area experts to brainstorm and validate strategies in addition to engagement with stakeholders to properly assess needs	Summaries and reportage from exchanges about best- practices, key- takeaways, and action- items	Capacity	Twice a year	Global	Number	10	2023	30	2024	Outcome : 2. Strengthe ned multilater al and multistak eholder cooperati on over transbou ndary resources and issues related to climate security througho ut the Middle East, Central Africa Africa Africa 2.3. Institutio nalized exchange between represent atives and leadershi p from Geogaur d- covered countries to discuss design choices of the map (i.e. aggregati on to different spatial and geopoliti cal boundari es)

No components available.

Indicator Title	Component Title	Description	Means of Verification	Category	Cycle	Scope	Value Type	Baseline Value	Baseline Year	Target Value	Target Year	Linked Outcome / Output
Transboundary Dialogue and Collaboration		Events, papers, meetings centered around transboundary data from Geoguard involving representatives from neighbor states			Yearly	Global	Number	0	2023	4	2024	Outcome : 2. Strengthe ned multilater al and multistak eholder cooperati on over transbou ndary resources and issues related to climate security througho ut the Middle East, Central Africa, and West Africa and West Africa Central Africa output: 2.1. Create entry points for dialogue through formal and sideline events guiding the develop ment and operation al use of Geoguar d
	No components a	vailable.										

Risks

Event	Category	Level	Likelihood	Impact	Mitigating Measures	Risk Owner
Political disputes regarding the design, use, and management of the tool.	Political	Medium	Possible	Minor	The Innovation Cell will: 1) Engage technical consultants, political representatives, and other end-users from each country featured on the dashboard to co-develop a product that suits their operational needs while	UNDPPA Innovation Cell

					remaining aware of political sensitivities and standards. 2) Assemble a cohort to guide the design, use, and management of Geoguard, potentially creating an entry point for cooperation, dialogue, and science diplomacy. 3) Seek guidance and input from relevant UN missions and country offices. 4) Outline a solutions-based framework around anticipated political sensitivities/security insecurities	
Low level of adoption among stakeholders and end-users.	OrganizationalOperational	Low	Possible	Insignificant	The Innovation Cell will: 1) Host in-person and virtual tutorials on how to use the tool. 2) Engage directly with a range of end-users to demonstrate the efficacy of Geogaurd in day-to-day operations and strategic long-term planning. 3) Co-design and pilot test the tool with a cohort of end-users. 4) Hire locally-based technical consultants to liaise directly with stakeholders and institutionalize the tool. 5) Seek user feedback through the use of surveys to continually improve Geoguard.	UNDPPA Innovation Cell

Misinterpretation or misunderstanding of data by stakeholders and end-users.	• Operational	Medium	Possible	Moderate	The Innovation Cell will: 1) Provide users with trainings, webinars, manuals, and other documentation. 2) Offer personal consultations with the project team at UNHQ in addition to the hiring of local consultants. 3) Seek user feedback through the use of surveys to continually improve Geoguard. 4) Mandate regular evaluations of trainers and check-ins quantifying their demonstrations provided/resulting adoption levels to ensure the "train the trainer" strategy is effective	UNDPPA Innovation Cell
Cultural misunderstandings or conflicts.	• Social and Environmental	Medium	Possible	Moderate	The Innovation Cell will: 1) Seek advice and input from relevant Country Teams, Missions, and other interested parties. 2) Ensure that the resources and training materials are made available to Member States in appropriate languages. 3) Outline a solutions-based framework around anticipated political sensitivities/security insecurities 4) Conduct series of individual and group interviews to understand perspectives towards mapping design choices and identify value-maximizing strategies for stakeholders 5) Solicit official administrative boundary maps from state leadership and UN CTOs to ensure consistency and minimize political insensitivities	UNDPPA Innovation Cell
Legal challenges related to data privacy and intellectual property.	Regulatory	Low	Unlikely	Major	The Innovation Cell will: 1) Ensure that (consistent with previous practice) wherever possible the data used is open source or open access. 2) Make certain that any new forms of data, for instance ground truthing, will be the owned by the project and collected in appropriate and respectful ways.	UNDPPA Innovation Cell
Reduced data quality and accuracy.	• Operational	Medium	Unlikely	Moderate	The Innovation Cell will: 1) Ensure that all data is of the highest quality. This will be achieved by establishing a standards committee among our partners, including Element84, Stanford, Northwestern University and others to scrutinize data and processing choices. 2) Comprehensive technical review of emerging sensors and datasets relevant to climate security and conflict to ensure high quality data and programmatically implement 3) Performing routine checks prior to the incorporation of any data to the platform. 4) Seek user feedback through the use of surveys to continually improve Geoguard.	UNDPPA Innovation Cell

Budget by UNSDG Categories: Over all

Budget Lines	UNDPPA (7%) *	Total
1. Staff and other personnel	\$114,500	\$114,500
2. Supplies, Commodities, Materials		\$0
3. Equipment, Vehicles, and Furniture, incl. Depreciation		\$0
4. Contractual services	\$370,000	\$370,000
5. Travel	\$35,000	\$35,000
6. Transfers and Grants to Counterparts	\$97,530	\$97,530
7. General Operating and other Direct Costs	\$37,176	\$37,176
Project Costs Sub Total	\$654,206	\$654,206
8. Indirect Support Costs	\$45,794	\$45,794
Total	\$700,000	\$700,000

Budget by UNSDG Categories: 2023

Budget Lines	Fiscal Year *	Description	UNDPPA (7%) *	Total
1. Staff and other personnel	2023	2 Regional technical consultants/ dashboard liaison for Africa and Middle East, and 1 Program Management + Liaison with donor Member States (Outputs 1.1, 1.2, 1.3, 2.2, 2.3, 2.4, 3.2)	\$114,500	\$114,500
2. Supplies, Commodities, Materials	2023			\$0

Budget Lines	Fiscal Year *	Description	UNDPPA (7%) *	Total
3. Equipment, Vehicles, and Furniture, incl. Depreciation	2023			\$0
4. Contractual services	2023	Addition of geospatial datasets for Middle East and Africa countries, Duststorm detection methodology, Integrating conflict modeling, maintenance, and end-user engagement (Outputs 1.1, 1.2, 1.3, 3.1, 3.2)	\$340,000	\$340,000
5. Travel	2023	Training, Stakeholder Engagement, Capstone Events (COP28), Liaising with Donor States (Outputs 1.3, 2.1, 2.2, 2.3, 2.4, 2.5, 3.2)	\$20,000	\$20,000
6. Transfers and Grants to Counterparts	2023	Modeling support from Northwestern University and additional support from Rhode Island School of Design for Visualization (Outputs 1.1, 3.1, 3.2)	\$97,530	\$97,530
7. General Operating and other Direct Costs	2023	Additional UN Secretariat indirect support costs	\$20,000	\$20,000
Project Costs Sub Total			\$592,030	\$592,030
8. Indirect Support Costs			\$41,442	\$41,442
Total			\$633,472	\$633,472

Budget by UNSDG Categories: 2024

Budget Lines	Fiscal Year *	Description	UNDPPA (7%) *	Total
1. Staff and other personnel	2024			\$0
2. Supplies, Commodities, Materials	2024			\$0
3. Equipment, Vehicles, and Furniture, incl. Depreciation	2024			\$0
4. Contractual services	2024	Integrating conflict modeling, maintenance, and end-user engagement (Outputs 1.1, 1.2, 1.3, 3.1, 3.2)	\$30,000	\$30,000
5. Travel	2024	Training, Stakeholder Engagement, Capstone Events, Liaising with Donor States (Outputs 2.1, 2.2, 2.3, 2.4, 2.5, 3.2, 3.3)	\$15,000	\$15,000
6. Transfers and Grants to Counterparts	2024		\$0	\$0
7. General Operating and other Direct Costs	2024	Additional UN Secretariat indirect support costs	\$17,176	\$17,176
Project Costs Sub Total			\$62,176	\$62,176
8. Indirect Support Costs			\$4,352	\$4,352
Total			\$66,528	\$66,528

Performance-based Tranches Breakdown

Tranche	Tranche %	UNDPPA	Total
Tranche 1	80%	\$560,000	\$560,000
Tranche 2	20%	\$140,000	\$140,000
Total		\$700,000	\$700,000

Programme Outcome Costs

Outcome	Output	Activity	Implementing Agent	Time Frame						
				2023 2				2024	2024	
				2	3	4	1	2	3	
1. Enhanced	d data-drive	n decision making in the context	of climate resilience and environment security across the Mide	dle East, C	entral Afr	ica, and W	/est Africa			
	1.1. Data i	nfrastructure using global, open-s	source geospatial data to automatically ingest, compute, and	map geos	patial and	geolocate	ed data			
		Continue to improve automatio	n of back-end data ingestion pipeline with Element 84 (geosp	atial engir	neering su	b-contrac	tor)			
			UNDPPA	V	~					
	1.2. Down	load and visualise spatio-tempora	al environmental and conflict data							
		1.2.1. Join multiple industry-stan	dard conflict datasets (i.e. ACLED, UCDP, GTD) to create a star	dardised	master-da	taset of ra	w conflict	data		
			UNDPPA		~	1				
		1.2.2. Compute conflict variance	s from historical average to create dataset on conflict anomali	es						
			UNDPPA							
		1.2.3. Normalise and compute va cross-analysed	ariances of environmental data to provide a common denomin	nator from	n which di	sparate da	ta can be	compared	l and	

Outcome	Output	Activity	Implementing Agent	Time Frame					
				2023 2024					
				2	3	4	1	2	3
			UNDPPA		~				
		1.2.4. Ingest Sentinel-3 thermal a template for the data to be visua	and optical data on dust storms and collaborate with UI/UX de alised and regularly updated on Geoguard	esigners a	nd geospa	atial engin	eers to cr	eate a visu	ıal
			UNDPPA			V	~		
		1.2.5. Comprehensive technical r programmatically implement	eview of emerging sensors and datasets relevant to climate se	ecurity and	d conflict f	to ensure l	nigh quali	ty data an	d
			UNDPPA	~					
	1.3. Suffici create cas	ent capacity to provide on-dema e-study analyses, and field user fe	nd support and demonstrations, engage with regular and pros eedback for continued dashboard improvement	spective u	sers, catal	ogue data	gaps and	l bugs to l	oe fixed,
		1.3.1. Distribute an open call for	consultants throughout UN network						
			UNDPPA				V		
		1.3.2. Engage directly with leade	rship from line ministries and UN SPMs, CTs, programmes, and	d agencie	s to desig	nate respe	ctive repr	esentative	s
			UNDPPA				V		
2. Strengthe and West A	ened multila frica	teral and multistakeholder coope	eration over transboundary resources and issues related to clir	mate secu	rity throug	ghout the	Middle Ea	st, Centra	l Africa,
	2.1. Create	entry points for dialogue throug	h formal and sideline events guiding the development and op	perational	use of Ge	oguard			
		2.1.1 Engage with Geoguard -cov management strategies support	vered countries and entities individually to assess appetite for red by Geoguard data	in-person	and virtu	al events o	on transb	oundary	
			UNDPPA				V		
	2.2. Coho	t of technical consultants to liaise	e between member countries and dashboard development tea	m and bu	ild institu	tional capa	acity for it	s regular	use
		2.2.1. Distribute open call for con	nsultancy and engage with Geoguard-covered countries to as	sign repre	sentatives				
			UNDPPA				V		
		2.2.2. Create an operational and engagement	regulatory framework for cohort to establish lines of commu	nication, p	oarticipatio	on expecta	ations, and	d protocol	s for
			UNDPPA				1		
	2.3. Institu different s	itionalized exchange between rep spatial and geopolitical boundarie	presentatives and leadership from Geogaurd-covered countrie es)	s to discu	ss design	choices of	the map	(i.e. aggre	gation to
		2.3.1. Conduct series of individua strategies for stakeholders	al and group interviews to understand perspectives towards m	napping d	esign cho	ices and id	lentify val	ue-maxim	izing
			UNDPPA						
		2.3.2. Solicit official administrati	ve boundary maps from state leadership and UN CTs to ensur	e consiste	ncy and n	ninimize p	olitical ins	ensitivitie	s
			UNDPPA						
	2.4 Outrea	ach to relevant Member States, SP	PMs, and CTs at capstone events like COP28						
		2.4.1 Showcase Geoguard develo	opments and use-cases at multistakeholder-facing events						
			UNDPPA						V
		2.4.2. Align milestones in develo	opment and deliverables with capstone events like COP28						
			UNDPPA			V			
	2.5. Creati	on and distribution of a risk-mitig	gation report to relevant stakeholders						
		2.5.1. Collaborate with policy and sensitivities/security insecurities	alysts and representatives from different member states to cat	talog antio	cipated re	servations	and polit	ical	
			UNDPPA						V
		2.5.2. Outline a solutions-based	framework around anticipated political sensitivities/security in	nsecurities	5				

		UNDPPA						
2.5.3. Create public-facing risk mitigation dossier and an internal strategy guide to reference for individual, closed-door conversations on Geoguard								
		UNDPPA						
	2.5.4 Distribute feedback sur	reys to wider stakeholder network to field broad responses to G	Geogaurd's	design, de	evelopme	nt, and us	е	
		UNDPPA	V			V		V
3. Strengthened ea	rly warning mechanisms for antici	atory action across the Middle East, Central Africa, and West A	frica					
3.1 Fo	recast conflict using Machine Lear	ing models						
	3.1.1. Identify primary environmental risk factors of conflict through literature review of scientific studies							
		UNDPPA						
3.1.2 Create ingestion pipeline of historical and near-time data on environmental risk factors and conflict into modeling software								
		UNDPPA						
3.1.3 Ingest data into models and generate future spatio-temporal probability and risk of conflict for every cell (approximately 100km x 100km swaths) within Geoguard								

Outcome	Output	Activity	Implementing Agent	Time Frame					
	2023				2024				
				2	3	4	1	2	3
UNDPPA			1		V				
3.1.4 Produce colorized maps displaying conflict risk based on environmental conditions and supplementary graphs indicating anomalies in conflict trends					nflict				
			UNDPPA		V	2			
		3.1.5 Create wireframes for integ designers)	rating this data into Geoguard as a feature layer overlay (colla	aborating	with data	visualisati	ion expert	s and UI/	JX
			UNDPPA		V				
	3.2 Suffici	ent capacity for interpreting early	warning maps and operationalising data						
		3.2.1. Provide on-demand and liv	ve trainings on the dashboard and available case-studies for g	uidance					
			UNDPPA	1		2	V	V	V
	3.3 Data g	juardrails to ensure the effective u	use of Geogaurd						
3.3.1. Establish a steering committee to oversee the use of early warning data, particularly as it related to transboundary severity and calls for coordination									
			UNDPPA					V	V
		3.3.2. Conduct quantified impact sociopolitical impacts) through a	t analysis of Geoguard's early warning features on tangible sea assessing programmes, policies, and strategies informed by G	curity out eogaurd.	comes (ind	cluding so	cioeconor	nic and	
			UNDPPA						V

Signatures

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