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	00140191
Start Date	01-May-2023
End Date	31-Dec-2024

Applicants	Status	Contact Type	Name	e-mail	Position	Telephone
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	Active: 13-Feb-2024 11:17:00 AM		Martin Waelisch	waehlisch@un.org		

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	Digital	Signatory	UNDPPA: Department of Political and Peacebuilding Affairs		Min Song	min.song@un.org

Contacts	Contact Type	Name	e-mail	Position	Additional e-mail	Telephone
	Project Manager	Samantha Murphy	samantha.murphy@un.org	Prog Mgmt Consultant		

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 to forecast future risks. Crowdsourced data in addition to indigenous and local knowledge – collected in partnership with civil society, authorities, and commercial third parties – will be ingested into the model for a more robust understanding of the situation on the ground. Outputs from these models will be visualized on Geoguard's dashboard interface using the Innovation Cell's proprietary data architecture. Notably, the project team - in partnership with relevant UN Country Teams and Missions - will use the dashboard to spur policy discussions at major capstone events, such as the upcoming COP28.

Universal Markers	Gender Equality Marker	Risk
	• GEM1 - The Key Activity contributes to GEWE in a limited way	• Low Risk

Optional Markers	Fragile Context		• No

Fund Specific Markers	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)

Geographical Scope	Geographical Scope	Name of the Region		Region(s)	Country
	• Global/Interregional	• Middle East, Central Africa, West Africa		• Africa • Asia	

Participating Organizations and their Implementing Partners	Participating Organizations	Government/ Multilateral/ NGO/ Other	New Entities	Implementing Partners
	• UNDPPA - Department of Political and Peacebuilding Affairs			Element 84, Armillary Services, Northwestern University

Programme and Project Cost	Participating Organization	Amount (in USD)		Comments
	Budget Requested			
	UNDPPA	$700,000.00		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	**$700,000.00**		
	Tranches			
	Tranche 1		Tranche 2	
	UNDPPA (80%) **Total:**	$560,000.00 **$560,000.00**	UNDPPA (20%) **Total:**	$140,000.00 **$140,000.00**
	Other Sources (Parallel Funding)			
	Institutional Funding	$200,000.00		Committed funding by UNAMI, UNOCA, and CSM/MYA.
	Total	**$900,000.00**		
Thematic Keywords				
Programme Duration	**Anticipated Start Date**	01-Jul-2023		
	Duration (In months)	18		
	Anticipated End Date	31-Dec-2024		

Narratives

Title	Text
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 early warnings and operationalize data, and (3.3) providing guardrails to ensure the effective use of Geoguard, including the establishment of a steering committee to oversee data usage
	THEN the intermediate outcome will be strengthened early warning mechanisms for anticipatory action across the Middle East, Central Africa, and West Africa
Methodology	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 universities and the development of a regional network of scholars and youth organizations, 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 best practices 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.

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 civil 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.
	Geoguard will rely on an established tradecraft of geospatial engineering and scientific methodology while employing expert User Experience (UX) engineers to design (in tandem with stakeholders through a robust series of user testing) a user interface that can be understood by practitioners across the UN system regardless of technical aptitude. Resources and training materials will be provided. Geoguard as a whole will follow the guidelines provided by the UN to ensure compliance with standards, and adhere to best practices in data security and ethics guardrails.
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.
Cost Effectiveness	

SDG Targets

Target	Description
Main Goals	
Goal 17. Strengthen the means 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 sustainable 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 action 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 peaceful 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
C060601	6.6.1 Change in the extent of water-related ecosystems over time

Contribution to SDGs

Participating Organization	% TARGET_6.5	% TARGET_13.1	% TARGET_17.17	% TARGET_13.2	% TARGET_12.2	% TARGET_17.16	% TARGET_13.3	% TARGET_17.7	% TARGET_6.4	% TARGET_16.1	% 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
ProDoc_DPPA_signed_Redacted.pdf	Pro Doc	Project		13-Jun-2023	External	Yes	Published	varqa.abayneh@undp.org	13-Jun-2023 4:35:22 PM
Geoguard_Geospatial Dashboards for Climate Assessment and Early Warning_signed.pdf	Pro Doc	Project		25-May-2023	Internal	No	Finalized	lehmann@un.org	25-May-2023 5:56:24 PM
Transhumance Mapping - UNOCA Expansion.pdf	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
UNOCA Geospatial Dashboard .pdf	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
Copy of 2022 Geospatial Portfolio (1).pdf	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 using global, open-source geospatial data to automatically ingest, compute, and map geospatial and geolocated 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 visualise spatio-temporal environmental and conflict data	

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. Explore Sentinel-3 thermal and optical data on dust storms		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 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	

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		
	2.1. Create entry points for dialogue through formal and sideline events guiding the development and operational use of Geoguard	

Outcome	Output	Description

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 consultants to liaise between member countries and dashboard development team and build institutional capacity for 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 exchange between representatives and leadership from Geogaurd-covered countries to discuss design choices of the map (i.e. aggregation to different spatial and geopolitical boundaries)	

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 Member States, SPMs, and CTs at capstone events like COP28	

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		

Outcome	Output	Description
	2.5. Creation and distribution of a risk-mitigation report to relevant stakeholders	

Activities

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		
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		

Outcome	Output	Description
3. Strengthened early warning 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
3.1.3 Explore via academic collaboration advanced computational methods drawing on Geoguard data to enhance data-driven practices and research		UNDPPA - Department of Political and Peacebuilding Affairs		Element 84
3.1.4 Produce colorized maps displaying conflict trends using open source data		UNDPPA - Department of Political and Peacebuilding Affairs		Element 84
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
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

3.2 Sufficient capacity for interpreting early warning maps and operationalising data	

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 ensure the effective use of Geogaurd	

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 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 resource allocation.	Surveys, interviews, analysis of public policy documents/emergency response plans/reports, other documents.	Capacity	Yearly	Global	Number	0	2023	195	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
	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 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. Strengthened multilateral and multistakeholder cooperation over transboundary resources and issues related to climate security throughout the Middle East, Central Africa, and West Africa **Output:** 2.3. Institutionalized exchange between representatives and leadership from Geogaurd-covered countries to discuss design choices of the map (i.e. aggregation to different spatial and geopolitical boundaries)
	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.** 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
	No components available.											

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 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	UNDPPA Innovation Cell
Low level of adoption among stakeholders and end-users.	• Organizational • Operational	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		$114,500.00	$114,500.00
2. Supplies, Commodities, Materials			$0.00
3. Equipment, Vehicles, and Furniture, incl. Depreciation			$0.00
4. Contractual services		$370,000.00	$370,000.00
5. Travel		$35,000.00	$35,000.00
6. Transfers and Grants to Counterparts		$97,530.00	$97,530.00
7. General Operating and other Direct Costs		$37,176.00	$37,176.00
Project Costs Sub Total		**$654,206.00**	**$654,206.00**
8. Indirect Support Costs		$45,794.42	$45,794.42
Total		**$700,000.42**	**$700,000.42**

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)	$114,500.00	$114,500.00
2. Supplies, Commodities, Materials	2023			$0.00

Budget Lines	Fiscal Year *	Description	UNDPPA (7%) *	Total
3. Equipment, Vehicles, and Furniture, incl. Depreciation	2023			$0.00
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)	$340,000.00	$340,000.00
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)	$20,000.00	$20,000.00
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)	$97,530.00	$97,530.00
7. General Operating and other Direct Costs	2023	Additional UN Secretariat indirect support costs	$20,000.00	$20,000.00
Project Costs Sub Total			**$592,030.00**	**$592,030.00**
8. Indirect Support Costs			$41,442.10	$41,442.10
Total			**$633,472.10**	**$633,472.10**

Budget by UNSDG Categories: 2024

Budget Lines	Fiscal Year *	Description	UNDPPA (7%) *	Total
1. Staff and other personnel	2024			$0.00
2. Supplies, Commodities, Materials	2024			$0.00
3. Equipment, Vehicles, and Furniture, incl. Depreciation	2024			$0.00
4. Contractual services	2024	Integrating conflict modeling, maintenance, and end-user engagement (Outputs 1.1, 1.2, 1.3, 3.1, 3.2)	$30,000.00	$30,000.00
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)	$15,000.00	$15,000.00
6. Transfers and Grants to Counterparts	2024		$0.00	$0.00
7. General Operating and other Direct Costs	2024	Additional UN Secretariat indirect support costs	$17,176.00	$17,176.00
Project Costs Sub Total			**$62,176.00**	**$62,176.00**
8. Indirect Support Costs			$4,352.32	$4,352.32
Total			**$66,528.32**	**$66,528.32**

Performance-based Tranches Breakdown

Tranche			Total
Tranche 1	UNDPPA (80%)	$560,000.00	$560,000.00
Tranche 2	UNDPPA (20%)	$140,000.00	$140,000.00
			$700,000.00

Programme Outcome Costs

Outcome	Output	Activity	Implementing Agent	Time Frame						
				2023			2024			
				2	3	4	1	2	3	4
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 using global, open-source geospatial data to automatically ingest, compute, and map geospatial and geolocated data									
		Continue to improve automation of back-end data ingestion pipeline with Element 84 (geospatial engineering sub-contractor)								
			UNDPPA	☐	☑	☐	☐	☐	☐	☐
	1.2. Download and visualise spatio-temporal environmental and conflict data									
		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	☐	☐	☐	☑	☑	☑	☐
		1.2.2. Compute conflict variances from historical average to create dataset on conflict anomalies								
			UNDPPA	☐	☐	☐	☑	☑	☑	☐
		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								

Outcome	Output	Activity	Implementing Agent	Time Frame						
				2023			2024			
				2	3	4	1	2	3	4
			UNDPPA	☐	☑	☑	☐	☐	☐	☐
		1.2.4. Explore Sentinel-3 thermal and optical data on dust storms								
			UNDPPA	☐	☐	☐	☑	☑	☑	☐
		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	☐	☑	☑	☑	☑	☑	☐
	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									
		1.3.1. Distribute an open call for consultants throughout UN network								
			UNDPPA	☐	☐	☐	☑	☑	☐	☐
		1.3.2. Engage directly with leadership from line ministries and UN SPMs, CTs, programmes, and agencies to designate respective representatives								
			UNDPPA	☐	☑	☑	☑	☑	☑	☐
2. Strengthened multilateral and multistakeholder cooperation over transboundary resources and issues related to climate security throughout the Middle East, Central Africa, and West Africa										
	2.1. Create entry points for dialogue through formal and sideline events guiding the development and operational use of Geoguard									
		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	☐	☑	☑	☑	☑	☑	☑
	2.2. Cohort of technical consultants to liaise between member countries and dashboard development team and build institutional capacity for its regular use									
		2.2.1. Distribute open call for consultancy and engage with Geoguard-covered countries to assign representatives								
			UNDPPA	☐	☑	☑	☑	☑	☐	☐
		2.2.2. Create an operational and regulatory framework for cohort to establish lines of communication, participation expectations, and protocols for engagement								
			UNDPPA	☐	☑	☑	☑	☑	☐	☐
	2.3. Institutionalized exchange between representatives and leadership from Geogaurd-covered countries to discuss design choices of the map (i.e. aggregation to different spatial and geopolitical boundaries)									
		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	☐	☑	☑	☑	☑	☐	☐
		2.3.2. Solicit official administrative boundary maps from state leadership and UN CTs to ensure consistency and minimize political insensitivities								
			UNDPPA	☐	☑	☑	☑	☑	☐	☐
	2.4 Outreach to relevant Member States, SPMs, and CTs at capstone events like COP28									
		2.4.1 Showcase Geoguard developments and use-cases at multistakeholder-facing events								
			UNDPPA	☐	☐	☐	☑	☑	☑	☑
		2.4.2. Align milestones in development and deliverables with capstone events like COP28								
			UNDPPA	☐	☐	☑	☐	☐	☑	☑
	2.5. Creation and distribution of a risk-mitigation report to relevant stakeholders									
		2.5.1. Collaborate with policy analysts and representatives from different member states to catalog anticipated reservations and political sensitivities/security insecurities								
			UNDPPA	☐	☐	☐	☑	☑	☑	☐
		2.5.2. Outline a solutions-based framework around anticipated political sensitivities/security insecurities								
			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 surveys to wider stakeholder network to field broad responses to Geogaurd's design, development, and use								
			UNDPPA	☐	☐	☐	☑	☑	☑	☐
3. Strengthened early warning mechanisms for anticipatory action across the Middle East, Central Africa, and West Africa										
	3.1 Forecast conflict using Machine Learning 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 Explore via academic collaboration advanced computational methods drawing on Geoguard data to enhance data-driven practices and research								
			UNDPPA	☐	☐	☐	☑	☑	☑	☐
		3.1.4 Produce colorized maps displaying conflict trends using open source data								

Outcome	Output	Activity	Implementing Agent	Time Frame						
				2023			**2024**			
				2	3	4	1	2	3	4
			UNDPPA	☐	☐	☐	☑	☑	☑	☐
		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	☐	☐	☐	☑	☑	☑	☐
	3.2 Sufficient capacity for interpreting early warning maps and operationalising data									
		3.2.1. Provide on-demand and live trainings on the dashboard and available case-studies for guidance								
			UNDPPA	☐	☑	☑	☑	☑	☐	☐
	3.3 Data guardrails to ensure the effective 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	☐	☑	☑	☑	☑	☑	☐
		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	☐	☐	☑	☑	☑	☑	☐

Signatures

UNDPPA: Department of Political and Peacebuilding Affairs (Digital) Min Song min.song@un.org	**SIGNATURE:** ███████ **DATE:** 30 June 2024