

**The United Nations Department of Political and
Peacebuilding Affairs**

**“Geoguard - Geospatial Dashboards for Climate
Assessment and Early Warning”**

FINAL NARRATIVE PROJECT REPORT

1 May 2023 – 31 December 2024





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1. KEY PROJECT FEATURES

Project Title	Geoguard - Geospatial Dashboards for Climate Assessment and Early Warning
Organization Name	The United Nations, Department of Political and Peacebuilding Affairs (DPPA), Policy and Mediation Division, Innovation Cell
Organization Website	Link: Innovation Department of Political and Peacebuilding Affairs
Project Duration	1 May 2023 – 31 December 2024
Grant Size	USD \$700,000
Implementing Partners	UNOPS, Element 84
Report Submission Date	07-March-2025
Geographic Scope of the Project	Central Africa, West Africa, Middle East
MPTF Office Project Reference Number	00140191

2. SURVEY

A. Project implementation

#	Question	Scale [Please select one]	Comment [Max. 30 words each]
1	<p>Did your project achieve the proposed objectives in a timely manner?</p> <p><i>1 = Not at all; 5 = To a very great extent</i></p>	4	The project required a 6-month no-cost extension due to longer than anticipated procurement processes.
2	<p>Did your project deliver the planned outputs?</p> <p><i>1 = Not at all; 5 = To a very great extent</i></p>	4	The project required the revision of 3 activities following the receipt of technical advice, particularly regarding the use of predictive modelling. The project otherwise delivered fully on its planned outputs.
3	<p>Did the preidentified risks impact the project delivery?</p> <p><i>1 = Not at all; 5 = To a very great extent</i></p>	3	Operational risks (administrative and procurement related) that were unaccounted for in the project plan caused delays, without derailing progress.
4	<p>If relevant, did your risk mitigation strategies effectively help manage and address risks?</p> <p><i>1 = Not at all; 5 = To a very great extent</i></p>	4	Our risk mitigation strategies were effective in helping to manage risks, especially related to political sensitivities. Following feedback gained during design workshops as well as from the DPPA hierarchy and relevant country desks, the decision was made to add thorough disclaimer to address sensitivities about the appearance of UN endorsement of data which may be disputed, especially in sensitive regions.

B. Impact on better crisis action

#	Question	Scale [Please select one]	Comment [Max. 30 words each]
5	<p>Did the data/insights from this project enable ecosystem partners to allocate resources in a faster, more targeted, and more dignified way?</p> <p><i>1 = Not at all; 5 = To a very great extent</i></p>	3	<p>Feedback from ecosystem partners indicates that Geoguard helps to identify vulnerability and subsequently guides allocation of catalytic resources.</p>
6	<p>To what extent did data/insights from this project help ecosystem partners reach people earlier, faster, and in a more targeted and dignified way?</p> <p><i>1 = Not at all; 5 = To a very great extent</i></p>	4	<p>As Geoguard is available to UN ecosystem partners, its insights can reach people earlier and faster. Geoguard plays an important role as a data refinery, distilling vast amounts of raw data that would otherwise go unused. Because of the Geoguard processing method, the data is easily comparable across indicators and geographies allowing the identification of at-risk communities down to Admin level 2. An example of this is Lake Chad - a case study that was presented to the Security Council Informal Group of Experts as part of early-warning analyses.</p>
7	<p>To what extent did the data/insights from this project help partners analyze and address the gendered impacts of crises?</p> <p><i>1 = Not at all; 5 = Very great extend</i></p>	4	<p>Geoguard added a new function that allows users to export and download disaggregated conflict datasets provided externally by ACLED and UCDP. These include indicators on gender-based violence. This data is added as an overlay providing contextual information.</p>
8	<p>To what extent did data/insights from this project enable or strengthen anticipatory action and early warning/early action capabilities of ecosystem partners?</p> <p><i>1 = Not at all; 5 = To a very great extent</i></p>	4	<p>Data from Geoguard was used as the basis of modelling efforts to provide early warning of Sand and Dust Storms. Only gender-disaggregated dataset for this project is that of Conflict. This research was exploratory and has not yet been incorporated into workflows of relevant UN agencies, such as Global SDS Coalition. The Geoguard team has been working with technical partners and the Global SDS coalition to develop new methods for modelling storms and identifying source areas. These efforts remain in their infancy.</p>

C. Impact on your organization

#	Question	Scale [Please select one]	Comment [Max. 30 words each]
9	Did CRAF'd funding enable your organization to break into new areas of work? <i>1 = Not at all; 5 = To a very great extent</i>	5	CRAF'd funding supported the expansion of Geoguard into data-sparse regions, advancing modelling research for water-related conflicts and phenomena such as sandstorms.
10	Did CRAF'd funding help improve the quality of your organization's work? <i>1 = Not at all; 5 = To a very great extent</i>	5	CRAF'd enhanced political analysis, conflict prevention and peacebuilding work through reliable, user-friendly data on environment-related stressors.
11	Did CRAF'd funding contribute to improving your organization's data and analysis capabilities or systems? <i>1 = Not at all; 5 = To a very great extent</i>	5	CRAF'd enabled the discovery of new ways to refine and visualise data to improve DPPA's analysis and response capabilities.
12	Did CRAF'd funding help reduce transaction costs and enhance the efficiency of grant management? <i>1 = Not at all; 5 = To a very great extent</i>	NA	CRAF'd funding enabled the UNDPPIA Innovation Cell to scale its Geoguard platform in a way that would not have otherwise been possible. CRAF'd was an agile, effective and resilient source of funding, especially given the current climate of funding cuts.
13	Did CRAF'd funding support the development of a sustainable core funding model for your organization/project? <i>1 = Not at all; 5 = To a very great extent</i>	NA	CRAF'd funding has supported the development and expansion of Geoguard in a way that has enabled a developing partnership with UNCCD. This partnership will ensure the sustainment of the platform.

3. ACHIEVEMENTS

A. Summary of key achievements

Provide the **top 5 major milestones** achieved throughout the project. Explain why each was significant and how it contributed to the project's objective.

Milestone [Max. 30 words each]	Significance [Max. 30 words each]	Links/materials
Dashboard expanded to encompass 17 additional countries in the Middle East and Africa (bringing total of countries covered to 29).	Given growing climate impacts in conflict affected countries and regions, DPPA regional divisions and field missions were keen to expand Geoguard from Iraq and Central Africa to 17 additional countries in the Middle East, Central Africa and West Africa. Thanks to technical enhancements, including automated data ingestion funded by DPPA's extrabudgetary resources in 2023, we are able to efficiently scale up the database to these new regions.	The new dashboard can be accessed here: www.app.geoguard.org
Identifying correlation between Geoguard environmental data and the prevalence of sand and dust storms	Using Geoguard data and the latest machine learning techniques to understand and model sand and dust storms, with the aim of informing future transboundary dialogues on this growing environmental stressor.	See the following reports attached: Report by Element 84: <i>Geoguard: Sandstorm Modeling Technical Report</i> Report by University of Cambridge: <i>Sand and Dust Storm Prediction: Preliminary Report</i>
First-of-its-kind expert workshop on water and conflict modelling	Exchange on using advanced computational methods drawing on Geoguard data to enhance data-driven practices and research into modelling water-related conflicts.	Social media post from the event and a post-mission report attached.
DPPA Contribution to the Package of Solutions for COP28 Declaration on Climate, Relief, Recovery and Peace	Geoguard selected for inclusion in the "Package of Solutions" which accompanied the UAE COP28 Presidency's flagship Declaration on Climate, Relief, Recovery and Peace.	https://www.cop28.com/en/Contributions-to-the-Package-of-Solutions-DPPA
New partnership with UNCCD to expand Geoguard to the South Caucasus, Horn of Africa, ASEAN states and Central Asia.	Geoguard was showcased in UNCCD workshops across Central Asia, South Caucasus, and the Horn of Africa. Feedback from partners indicates that Geoguard is a potentially valuable tool in identifying and responding to land degradation under the UNCCD's "Peace Forrest Initiative."	Images from UNCCD COP attached.

B. Link to decision-making

Highlight at least four use cases, i.e., specific, compelling examples, of how ecosystem partners have leveraged the project's data and insights for decision-making to:

- Anticipate, prevent, and respond to fragile and crisis-affected settings.
- Facilitate the allocation of funding to fragile and crisis-affected settings within your organization, ecosystem partners, and other stakeholders.
- Reach people in fragile and crisis-affected settings earlier, faster, and in a more targeted and dignified way.

Organization [Max. 1 per line]	Use Case	Outcome	Links/materials
UNOCA (Climate Peace and Security Advisor)	Distinguishing drivers of internal displacement near Lake Chad.	Verifying data and informing differing views on the connections between non-state armed group activity, natural resource access, and climate-induced displacement. This connection was reported to the Security Council Informal Group of Experts.	Presentation by UNOCA to informal group of experts of member of the Security Council on Climate, Peace and Security attached.
UNAMI (Climate, Peace and Security Advisor) and Technical University of Munich (TUM)	Using Geoguard data as part of modelling efforts to identify priority areas for de-mining in Iraq due to flooding.	Produced a report which highlighted priority areas. This work will require political engagement with the relevant member states, but it is anticipated that it will lead to a prioritisation of de-mining efforts in Iraq.	UNAMI-TUM joint report attached.
UNCCD	Identified Geoguard as a tool for transboundary engagement on land degradation.	Enhanced transboundary cooperation through regional data sharing.	Mission reports from South Caucasus and Horn of Africa Peace Forest Initiative workshops attached.
University of Cambridge	Data science researchers used Geoguard data to model sand and dust storms.	A strong correlation between Geoguard environmental indicators and source areas for sand and dust storms was discovered. This work has been shared with the UN's Global SDS Coalition and will inform its own modelling efforts. The report will be used by the Global SDS Coalition to undertake further work and redirect funding.	See attached report by University of Cambridge: <i>Sand and Dust Storm Prediction: Preliminary Report</i> .

C. Ecosystem impact

#	Question	Scale [Please select one]	Comments [Max. 30 words]
14	<p>Did the project strengthen data/insights-sharing and collaboration among ecosystem partners?</p> <p><i>1 = Not at all; 5 = To a very great extent</i></p>	4	Geoguard helped the DPPA Innovation Cell as a springboard for developing data/insight collaboration with academic partners, other UN agencies and commercial providers. UNDPDA now has a central accessible repository for a range of processed environmental and conflict data. This allows DPPA users to access and visualise data that was previously disparate and not easily understood.
15	<p>Did the project build and maintain inclusive and accountable partnerships with organizations in fragile and crisis-affected settings?</p> <p><i>1 = Not at all; 5 = To a very great extent</i></p>	4	Geoguard uses exclusively open source and freely available datasets, ensuring inclusivity and accountability. This was achieved in partnership with relevant entities such as UNAMI, UNOCA and UNOWAS.
16	<p>Were local and national actors involved in the design, collection, and validation of the data/insights from this project?</p> <p><i>1 = Not at all; 5 = To a very great extent</i></p>	4	The project was designed as a tool for UN Climate, Peace and Security Advisers and others working in crisis-affected and climate vulnerable regions for providing advice to government actors. UNDPDA Innovation Cell undertook a mission to Central Africa to consult local knowledge on the design of Geoguard. Our mission ensured that the needs of indigenous and local communities remained front of mind.
17	<p>Did the project build and maintain partnerships with women-led and feminist organizations?</p> <p><i>1 = Not at all; 5 = To a very great extent</i></p>	2	The project contracted Ridgeway Information for expert geospatial and design consultancy. Ridgeway is a UK-based woman-led organization with a record of providing gender research and other services to the UN.

18	<p>Did the project enhance the ability of local and national actors in fragile and crisis-affected settings to access and use data/insights?</p> <p><i>1 = Not at all; 5 = To a very great extent</i></p>	3	<p>The platform is openly available to all. Local and national actors in fragile and conflict-affected settings can therefore access the environmental trends data on Geoguard.</p>
19	<p>Did the project's data/insights contribute to more gender-responsive decision-making?</p> <p><i>1 = Not at all; 5 = To a very great extent</i></p>	2	<p>Due to the nature of the data set, the question is not applicable for our project. However, a major achievement of the project was adding the ability to download raw conflict data, including gendered aspects.</p>

Please **provide up to three examples** of organizations in/from fragile and crisis-affected settings with which you have partnerships, the key outcomes achieved through these partnerships, and relevant supporting materials.

Organization [Max 1 per line]	Outcome / Difference we made [Max. 30 words]	Links/materials
UNOCA	Streamlining climate security and data tools within UNOCA and delivering training at UNOCA Climate, Peace and Security capacity building workshop.	UNOCA – CPS Workshop summary report attached.
UNCCD (Peace Forrest Initiative)	Geoguard as a source of data and indicators to assess progress towards land restoration, supporting sustainable development and cross-border collaboration under the RoK's "Peace Forest Initiative".	https://x.com/UNDPPA/status/1864174137842798756
UNAMI	Geoguard as a source of data and indicators in trial modeling effort to target de-mining efforts in Iraq.	TUM-UNAMI joint report attached.

D. Data quality

#	Question	Scale [Please select one]	Comment [Max. 30 words]
20	<p>Did the project ensure transparency and public accessibility of its data/insights and methodologies for public use?</p> <p><i>1 = Not at all; 5 = To a very great extent</i></p>	5	<p>Geoguard has, since its inception, used exclusively open-source datasets. The platform was launched publicly and fully open access. Following feedback gained during design workshops as well as from the DPPA hierarchy and relevant country desks, the decision was made to add through explanation to address sensitivities about the appearance of UN endorsement of data which may be disputed, especially in sensitive regions.</p>
21	<p>Did the project use open-standard, machine-readable formats, and facilitate data interoperability (e.g., API integration)?</p> <p><i>1 = Not at all; 5 = To a very great extent</i></p>	5	<p>Geoguard uses exclusively open-source data. To ensure interoperability, technical partners, Element 84 were tasked to provide a sustainability report detailing questions related to API, formats, tech stack and data processing methods.</p>
22	<p>Did the project ensure the accuracy, completeness, and reliability of the data/insights through validation and peer review processes?</p> <p><i>1 = Not at all; 5 = To a very great extent</i></p>	3	<p>The platform itself was validated through the hosting of design workshops with end users during the design phase.</p>
23	<p>Did the project implement measures to ensure data responsibility, including informed consent, privacy, confidentiality, fairness, and risk mitigation?</p> <p><i>1 = Not at all; 5 = To a very great extent</i></p>	4	<p>Where applicable, yes. No new data was collected during this project.</p>
24	<p>Was gender expertise incorporated into the design, collection, or validation of the data/insights?</p> <p><i>1 = Not at all; 5 = To a very great extent</i></p>	NA	<p>Due to the nature of the dataset used, the question is not applicable to the project.</p>

25	<p>Did the project take steps to prevent, mitigate, and address biases in the data/insights, ensuring neutrality and credibility?</p> <p><i>1 = Not at all; 5 = To a very great extent</i></p>	4	All datasets used are global scale, open access and verified through decades of use and ground truthing.
26	<p>Were mechanisms in place to gather and incorporate user feedback on data/insights usability and accessibility?</p> <p><i>1 = Not at all; 5 = To a very great extent</i></p>	5	A series of user design workshops and ad hoc user needs interviews were held throughout the design process.

Please **share up to three concerns from stakeholders** that were brought to your attention, including how they were addressed.

Concern Type	Concern [Max. 50 words]	Action [Max. 50 words]
Programmatic	Users identified a lack of training material available on the platform. This includes in all three Geoguard languages (English, French, Arabic).	The Innovation Cell developed training packages in all three languages.
Data and Information	Stakeholders in Central and West Africa were seeking data related to the growing prevalence of farmer-herder conflict. The conflict datasets used in the project (ACLED and UCDP) do not disaggregate their data for such conflict event types, making them less relevant for analysis.	Working with technical partners, the Innovation Cell added the ability for users to download raw conflict data, including the metadata describing individual conflict events. This enables stakeholders to search the dataset for instances of farmer-herder conflict.

E. Sustainability and scalability of the project

#	Question	Scale [Please select one]	Comment [Max. 30 words]
27	<p>Will data/insights provided through this project have sustainable impacts beyond the duration of this project?</p> <p><i>1 = Not at all; 5 = Extremely likely</i></p>	5	DPPA is building a partnership with UNCCD to sustain and further expand Geoguard. The dashboard also has an automated data ingestion pipeline allowing easy sustainment.
28	<p>To what extent can the project's output or activities be replicated or expanded to other geographic regions or contexts?</p> <p><i>1 = Not at all; 5 = To a very great extent</i></p>	5	The underlying methodology of Geoguard is easily transferable and replicable. The platform is expandable to the global scale. Geoguard data has been processed in a way that makes it readily usable in modelling efforts. For instance, the SDS modelling work undertaken by the University of Cambridge used Geoguard data downloaded as .csv files to identify source locations. Geoguard data is available at admin levels 0, 1 and 2.
29	<p>How well has the project developed the infrastructure and partnerships needed to support its scaling to a larger audience or scope?</p> <p><i>1 = Not at all; 5 = To a very great extent</i></p>	5	Based on user needs and consultation processes, Geoguard has expanded the countries covered from an initial 12 countries to 29. Geoguard has enabled the development of a data infrastructure and processing pipeline that now incorporates additional countries. Likewise, the platform has allowed for partnerships with UN agencies and academic institutions who can now more clearly visualize relevant data and make comparisons.

F. Lessons learned

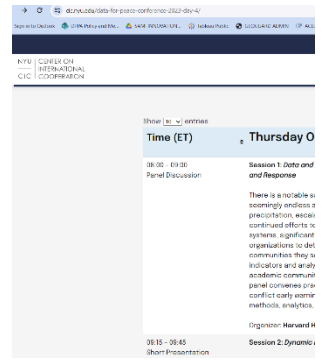
Reflect on the insights gained throughout the project's lifecycle.

Mention at least **five key takeaways** from this project that can inform future initiatives.

Category	Description [Max. 50 words]
Data and Information	Geoguard provides a comprehensive repository of historical climate and security data. This provides scope for future potential in predictive analytical capabilities.
Programmatic	The engineering aspects of the project were implemented to a high standard, but the design and user interface components could be further improved. UX/UI expertise could be further reinforced. A training package in three languages ensured a wider initial uptake of the platform.
Data and Information	User feedback helped the team to identify the benefit of providing raw data, which has been processed, for the purpose of modelling and disaggregation. This was achieved for conflict data, but it would be equally valuable for environmental data.
Procurement	The project required a 6-month no-cost extension due to longer than anticipated procurement processes. The lesson learned is to plan for more anticipatory time in the project development pipeline to hedge against possible procurement delays.

4. PROJECT VISIBILITY

Please **provide up to five major media mentions**, articles (including peer-reviewed), events, or other platforms where the project's work has been or will be featured, including reference links.

Type [Max 1 per line]	Title & description [Max. 30 words]	Indicator	Link
Workshop	Expert workshop on water and conflict, Berlin, 22 March 2024. A cohort of geospatial, data, and earth systems scientists convened to explore the potential modelling techniques using Geoguard data.	12 attendees	Agenda attached.
Conference	Data for peace conference, NYU, virtual, 19 October 2023 short presentation How to change the world from space: The game-changing use of geospatial technologies conflict prevention, peacemaking, and peacebuilding efforts.	5 panelists	https://cic.nyu.edu/data-for-peace-conference-2023-day-4/ 
Others	Geoguard featured in COP28's Package of Solutions	Global audience	https://www.cop28.com/en/Contributions-to-the-Package-of-Solutions-DPPA
Workshop	Presentation of Geoguard at Joint CPPF-CSM-UNOCA Third Workshop on Climate Change, Peace, and Security in Central Africa	2 high-level officials (UNOCA SRSR and ECCAS Commissioner) 100+ invitees spanning the UN regional offices across Central Africa, SPMs (UNOCA), UN funds, programmes, and special agencies	Closed-door meeting.
Workshop	UNOCA Climate Peace and Security Capacity Building Workshop. Co-hosted by UNSSC and the Climate Security Mechanism.	30+ attendees from UN missions, civil society and member states.	https://www.unssc.org/capacity-building-workshop-climate-peace-and-security-central-africa?parent=500686
Conference	Geoguard presented at UNCCD COP16 in Riyadh as part of two sessions related to the Peace Forest Initiative.	PFI High Level Dialogue 150+ attendees from member states and UN. agencies. Side event 25 attendees.	https://x.com/UNDP/PPA/status/1864174137842798756

A. Leadership testimonial

Please submit one quote (max. 20 words) from your organization's leadership that describes the project's achievements and CRAF'd support.

Full Name	Title	Quote	Photo credit & link to photo*
Ms. Alexandra Fong	Chief Policy and Mediation Division Department of Political and Peacebuilding Affairs	"Geoguard has enabled insightful analysis of climate, peace and security linkages, and exemplifies how innovation within DPPA aligns with UN priorities on technology and data-driven approaches."	n/a

B. Partner testimonials

Submit up to three quotes (max. 20 words) from partners and/or users of data/insights provided through this project. The quotes should describe who these organizations have contributed to the project and/or how they are using the data and insights for crisis anticipation, prevention, and response.

Full Name	Title	Quote	Photo/video credits & link to photo/video*
Mr. Utchang Kang	UNCCD Peace Forrest Initiative Programme Manager	"Geoguard is a great data platform which has the potential to serve the needs of UNCCD users,"	Photo of Mr Kang addressing a PFI side event at the UNCCD COP attached
Ms. Andrea Dekrout	UNAMI Climate, Peace and Security Advisor	"Geoguard's climate data enhanced flood risk mapping, exploring how to prioritize de-mining in Iraq and reduce climate-driven security threats"	n/a

* Please submit action photos in PNG format with a minimum resolution of 1600x1200 pixels via a file-sharing platform of your choice to maintain quality. Images should ideally show the quote in a speaking or action pose. **For example, refer to CRAF'd Annual Report.**

C^d

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