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On-the-Ground Information Management Tools in Northeast Syria

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ON-THE-GROUND INFORMATION MANAGEMENT TOOLS IN NORTHEAST SYRIA

Backgroung photo of Al-Raqqa, Syria courtesy of TetraTech.

By Suleiman Nyamwaya and Joel Ndegwa [iMMAP]

Mine action activities in northeast Syria (NES) started in early 2017. At the time, there was a clear need for coordination, and members of the NES nongovernmental organizations (NGOs) forum's implementing programs—including Water, Sanitation, and Hygiene (WASH)[1] promotion, as well as programs representing Shelter, Cash, Health, and Food—experienced tremendous challenges working in a region heavily contaminated by ordnance with no information available on their locations and types. By the end of 2017, iMMAP filled this gap by providing a coordination support platform for humanitarian mine action (HMA) actors through the use of the Information Management System for Mine Action (IMSMA). To date, a geographic information system (GIS) portal, a Power BI dashboard, and an offline mobile data collection tool (MoDAC) are some of the tools used by iMMAP to support HMA actors working in NES.

MINE ACTION INFORMATION MANAGEMENT IN NORTHEAST SYRIA

Through the HMA project, iMMAP provides information management (IM) support to its partners for the collection, analysis, and reporting on mine action data as well as capacity building. The project aims to increase the effectiveness and availability of an overarching picture of HMA activities in the region through continued coordination and technical support to stakeholders including NGOs and national authorities. Over the past three years, the online database recorded over 100,732 explosive devices that were destroyed in the Ar-Raqqa, Al-Hassakeh, and Deir-Ez-Zor provinces of NES.[2]

Back to report | DEVICES FOUND/DESTROYED

Category	Quantity
Unknown	4,595
smallArms	55,189
Scatterable Munitions	11
Rockets	1,039
Pyrotechnics and Flares	07
Projectiles	16,443
Naval Mines	02
Misc Nonexplosive Devices	94
Misc Explosive Devices	239
Landmines	15,468
IED	5,128
Guided Missiles	38
Grenades	1,918
Clusters and Dispensers	361
Bombs	202
Total	**100,734**

Figure 1. Explosive devices destroyed in Al-Raqqa, Al-Hassakeh, and Deir-Ez-Zor provinces in NES (October 2017–October 2020).
All graphics courtesy of iMMAP.

These devices, which claim the lives of civilians and undermine efforts toward recovery, include anti-personnel and anti-vehicle landmines, land-based and air-dropped unexploded ordnance (UXO), and improvised explosive devices (IEDs). They continue to be reported in significant numbers across the region.

The NES HMA activities continue to see significant challenges due to limited demining capacity, a hostile security environment, and the absence of a national mine action authority (NMAA) to provide oversight and support to humanitarian actors.

Prior to the October 2019 Turkish Operation Peace Spring,[3] there were six active partners in the Mine Action Sub-Cluster (MASC)[4] conducting contamination surveys, risk education (RE), clearance, and survivor assistance. The 2019 Turkish Operation Peace Spring and the onset of COVID-19 pandemic restrictions have reduced the number of international (30) and national (120) NGOs operating in NES in 2020. In NES, iMMAP operations provide

- contaminated and cleared area maps
- RE activities and beneficiary mapping
- records of devices encountered (numbers, description and geographical distribution)
- explosive hazard-related incident records/maps.

INFORMATION MANAGEMENT SYSTEMS USED IN NES

The Mobile Data Collection Tool (MoDAC). MoDAC simplifies data collection in the most demanding settings by ensuring better quality data is gathered quickly and more efficiently than using pen and paper, thereby reducing errors.

MoDAC collects survey data, both online and offline and is compatible with Android, iOS, and many other devices. iMMAP developed the tool to enable mine action partners in Ar-Raqqa to record hazardous areas that require clearance services before the return of civilians to their homes, schools, and agricultural lands. The tool plays an essential role in the identification and effective clearing of several homesteads and schools in NES, where most mobile telephone towers have been destroyed and internet connectivity is limited or non-existent. MoDAC lets users collect data offline to be uploaded at a

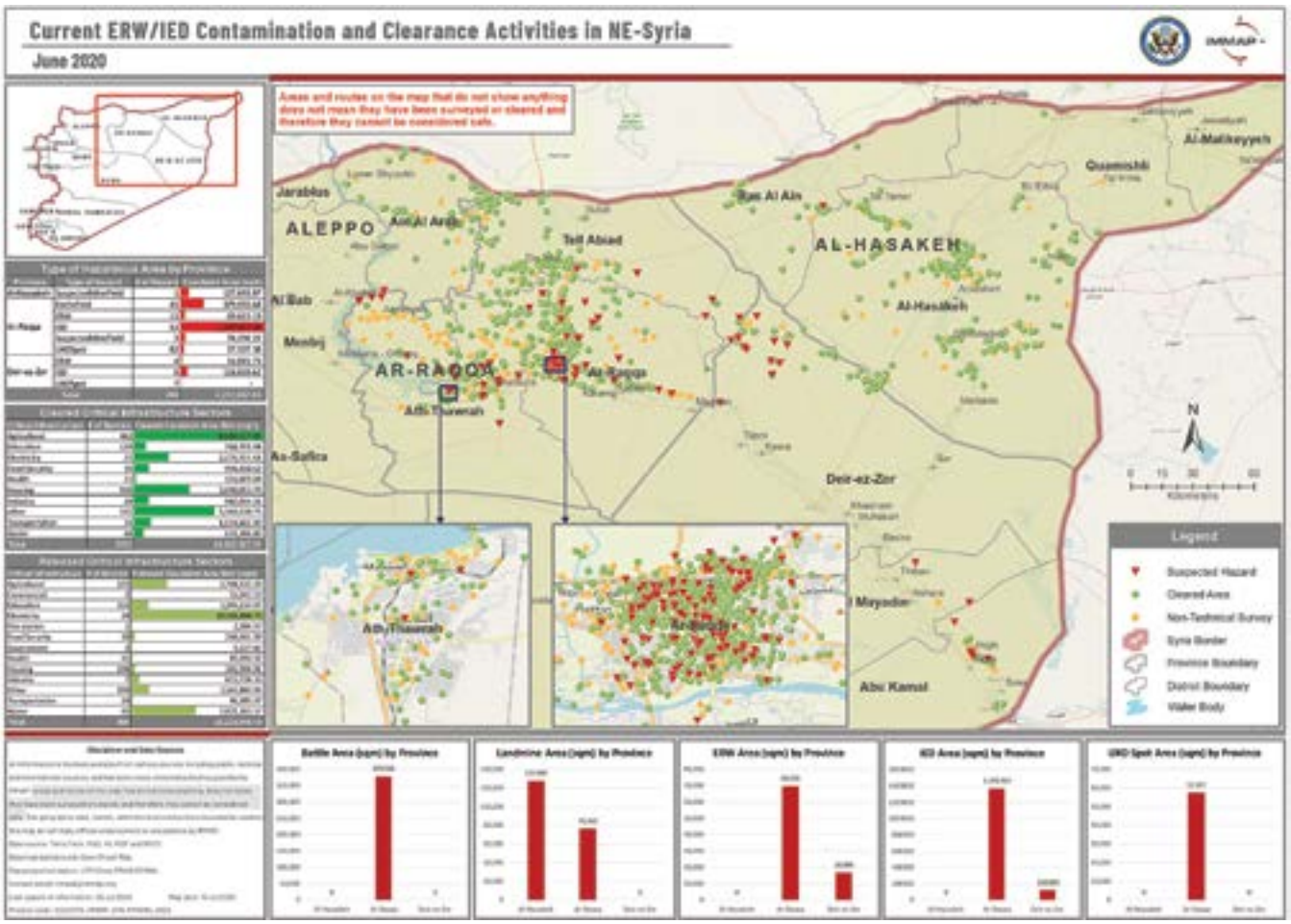

Figure 2. Current UXO and IED contamination and clearance activities in NES.

later time once an internet connection becomes available.

Centralized Database for Humanitarian Mine Action (IMSMA) is used by HMA stakeholders in NES to map areas that have been cleared and those that are still contaminated. The tool is highly customizable to suit the constantly changing IM needs (definition of data types, customization of data collection forms, workflow). After data processing and quality control, the information is used to generate information management products shared with all HMA partners.

Figure 3. Sample message from MoDAC.

GIS PORTAL AS A WEB PLATFORM FOR DATA SHARING

The NES GIS Portal is a full-featured mapping and analytics platform initiated in late 2017 to improve communication and knowledge among MASC members, as well as between the MASC and NES NGO Forum Working Groups. The portal enables the sharing of interactive maps with partners via a web interface. It features

- secure storage and fast access to maps and data,
- optional GIS capabilities for real-time imagery and large data processing,
- increased capabilities with GIS server extensions, and
- enterprise geodatabase (for geodata storage and management).

Figure 4. Example of an attribute pop-up window.

The platform is user-restricted due to the sensitive nature of information it contains and in accordance with the provisions of the memoranda of understanding between iMMAP and MASC members. However, the Map Gallery is open to the public. In summary, the GIS portal is a one-stop shop for a comprehensive understanding of suspected hazardous, cleared, and released areas as well as explosive ordnance RE activities. By clicking on a given point of the map, users open up a window (see Figure 4) containing useful information about that specific area such as province, district, sub-district, city, cleared area, organizations working in the area, number of devices destroyed,

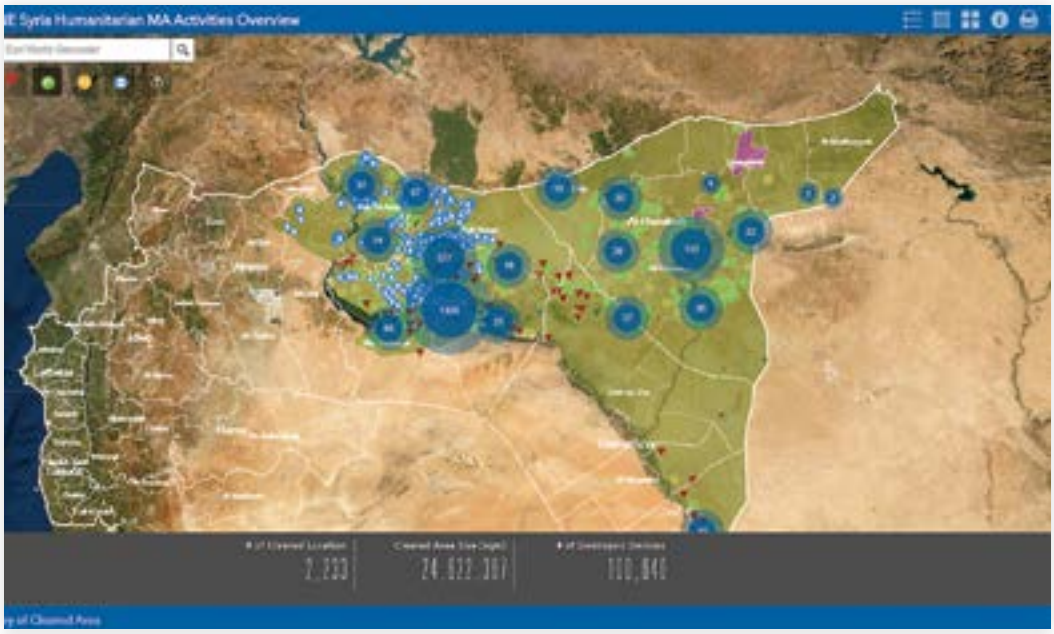

Figure 5. Overview of HMA activities in NES.

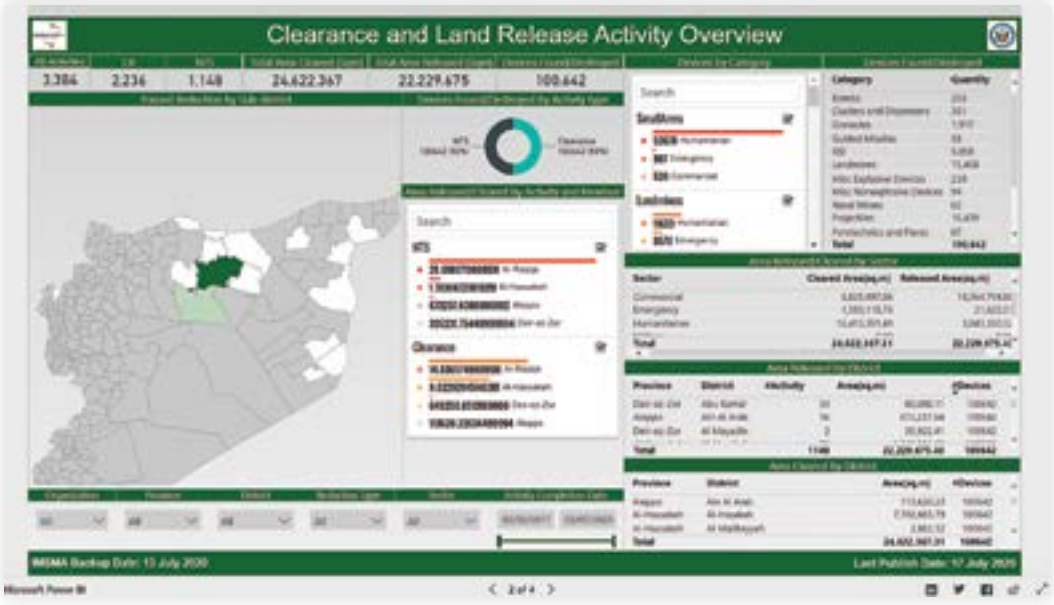

Figure 6. Overview of clearance and land release activities in NES.

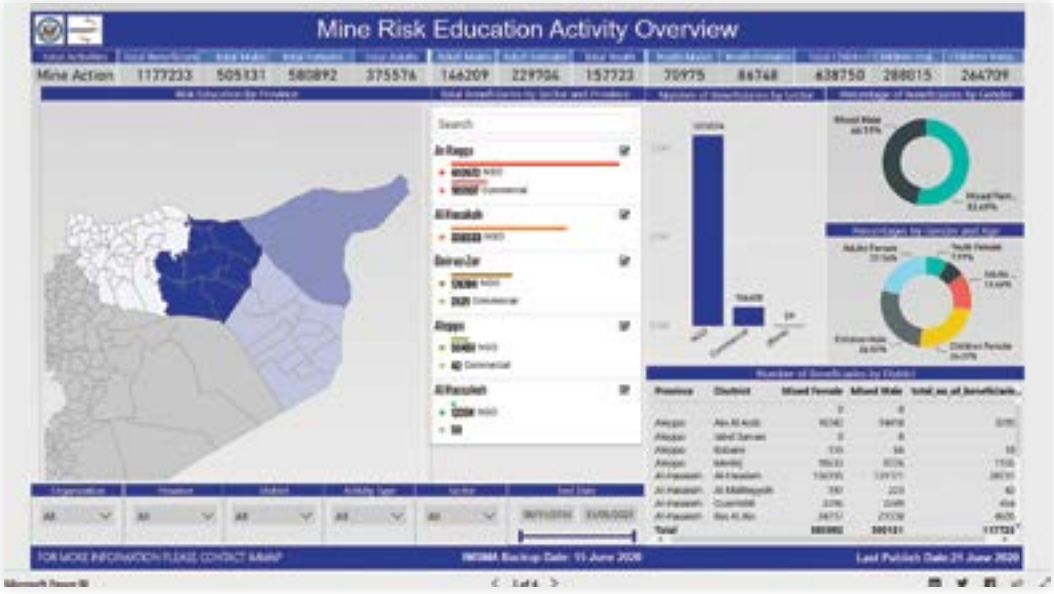

Figure 7. Overview of MRE activities in NES.

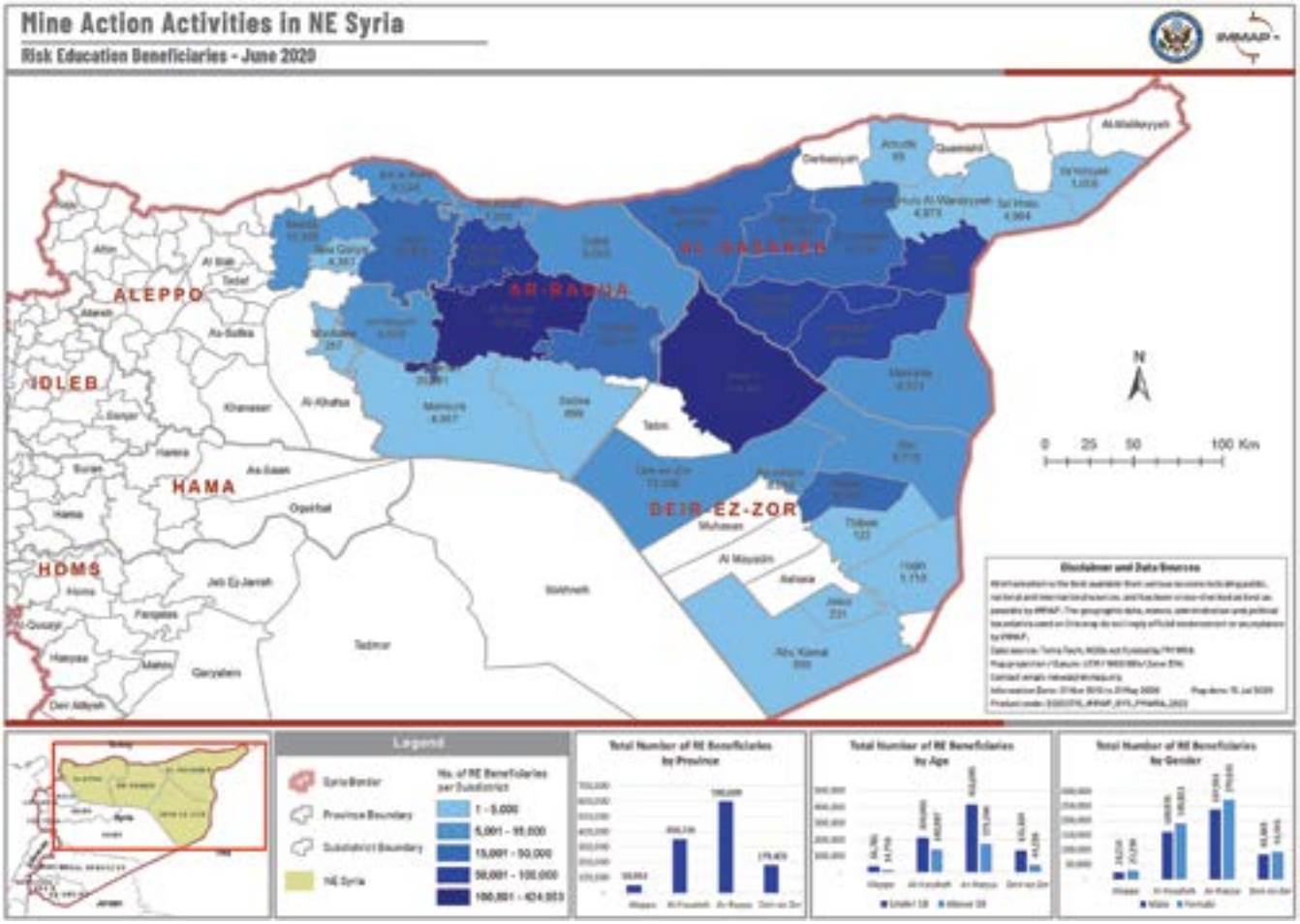

Figure 8. Risk education beneficiaries in NES.

number of risk education beneficiaries, etc. Furthermore, a long list of operational layers is available on the platform that users can display or hide.

POWER BI DASHBOARD

iMMAP uses a Power BI dashboard to generate reports, share data with the organizations working in NES, and integrate seamlessly with existing applications. Power BI is a Microsoft cloud-based tool that simplifies data processing, analysis, and reporting for end-users.

In the context of NES where no NMAA is present, this dashboard enables clearance organizations to view areas of partner activity, thus avoiding duplication of efforts and promoting the efficient use of the limited available resources.

iMMAP is an international not-for-profit organization that provides information management services to humanitarian and development organizations, enabling partners to make informed decisions that ultimately provide high-quality targeted assistance to the world's most vulnerable populations.

See endnotes page 65

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Suleiman Nyamwaya is iMMAP's Humanitarian Mine Action Coordinator for northeast Syria. In this role, he supports a coordinated approach to mine action operations by managing needs assessment, gap analysis, and prioritization of response requirements. He holds a Bachelor of Science in civil engineering from the Military College of Engineering in Pakistan, and a Master of Arts in disaster management from the University of Nairobi.

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Joel Ndegwa is the Information Manager at iMMAP for the mine action project in northeast Syria. He has ten years' experience with information management systems, both in the private and humanitarian sectors. He has worked in Kenyan telecommunications infrastructure in the field of SMS and USSD and also worked with UNDP Somalia with implementing a contractor information management system for the Somalia program. Ndegwa holds a Bachelor of Science in computer science from Moi University, Kenya.