

EXPLOSIVE ORDNANCE VICTIMS AND RISK EDUCATION: LESSONS LEARNED FROM COLOMBIA 2012–2019

Background photo: During 2019 and 2020, more than 197 thousand people have benefited from awareness-raising and training processes in Explosive Ordnance Education (EORE).
Image courtesy of OACP-DC.

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In Colombia, the use of anti-personnel mines is the result of more than sixty years of armed conflict. The Office of the High Commissioner for Peace¹ - Descontamina Colombia (OACP-DC by its Spanish acronym), the current national mine action authority (NMAA) in Colombia, recorded 11,828 explosive ordnance (EO) victims between 1985 (when victim data recording started) and 2019.² Furthermore, Colombia is one of nine countries where new anti-personnel mines are still being emplaced by non-state armed groups,³ which presents a challenge for the mine action sector.

The aim of explosive ordnance risk education (EORE) is to reduce the risk of accidents by raising awareness and promoting safe behavior among EO-affected communities,⁴ which also helps to strengthen

communities' relationships with mine action operators and facilitates information gathering during non-technical survey.⁵ The Information Management System for Mine Action (IMSMA) database has been used to officially record EORE in Colombia since 2010, although there is evidence of some previous EORE activities.⁶ The development of EORE has been progressive and one of the major achievements is the implementation of three different operational models in various regions of the country that respond to specific needs. These models are (a) EORE in the educational field, which was the first model to be implemented; (b) EORE during emergency situations, including rapid response EORE;⁷ and (c) EORE within the humanitarian demining and land release framework.⁸ Currently, the information management (IM) department of OACP-DC has advanced toward a more systematic and strategic use of the information provided by EORE organizations.

This study, funded by The Office of Weapons Removal and Abatement in the U.S. State Department's Bureau of Political-Military Affairs (PM/WRA), aims to provide a characterization of EO victims and EORE activities between 2012 and 2019 in Colombia, and to identify the lessons learned and challenges faced.

METHODS

The Swiss Foundation for Mine Action (FSD) carried out data analysis from 2012-2019 using the organization's statistics repository and the EORE activities and EO-victims' databases.⁹ Only direct beneficiaries were included in this analysis and included the number of people receiving EORE safety messages through interpersonal EORE, mass

Characteristics	Category	Number	Percentage
Gender	Women	114	5.8%
	Men	1,844	94.2%
Age	Below the age of 18	268	13.7%
	Above the age of 18	1,690	86.3%
Activity	Public Force	964	49.2%
	Proximity	225	11.5%
	Eradication of illicit crops*	173	8.8%
	No information	123	6.3%
	Collecting food, water, or wood	85	4.3%
	Walking on a usual road	85	4.3%
	Playing	70	3.6%
	Agriculture	63	3.2%
	Public Force activities	42	2.1%
	Handling	41	2.1%
	Looking after animals	35	1.8%
	Cleared area	18	0.9%
	Walking on dirt roads (shortcuts)	10	0.5%
	Hunting and fishing	9	0.5%
	Maintenance of infrastructure	7	0.4%
	Demining work	4	0.2%
	Working at home	4	0.2%
Impact	Killed	1,706	87.1%
	Injured	252	12.9%
Total		1,958	

Table 1. Sociodemographic characteristics of explosive ordnance (EO) victims in Colombia, between 2012 and 2019.

Table courtesy of Office of the High Commissioner for Peace-Descontamina Colombia (OACP-DC).

Characteristics of EORE beneficiaries			
Beneficiaries	Total	491,955	
		Number	Percentage
	Men	285,239	58%
	Women	206,716	42%
Age	Below the age of 18	191,149	38%
	Above the age of 18	300,806	62%
Ethnicity	Indigenous	51,313	10%
	Afro-descendent	46,648	10%
	Mestizo	395,086	80%
EORE Model	Educational	53,156	10.8%
	Emergency situations	171,674	34.9%

Table 2. Characteristics of EORE beneficiaries in Colombia between 2012 and 2019. Table courtesy of (OACP-DC).

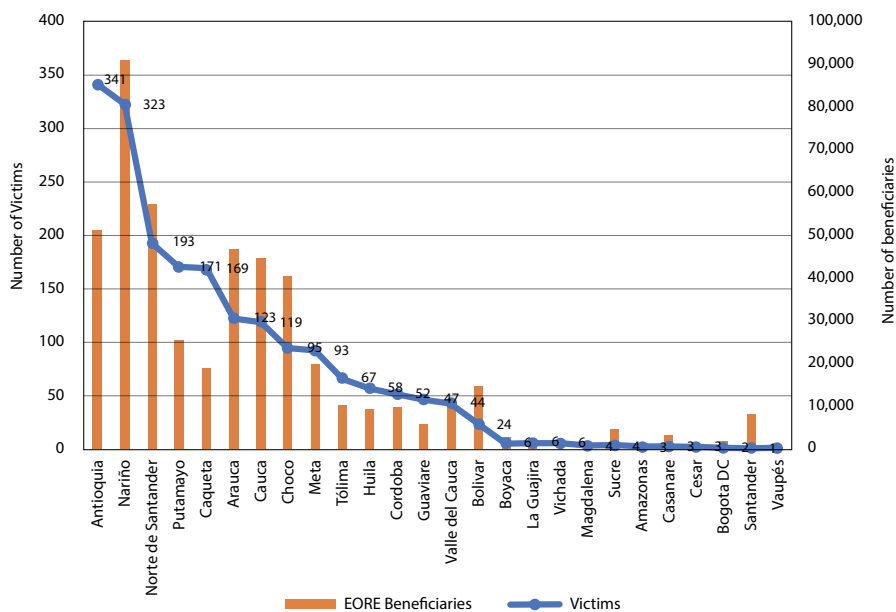


Figure 1. Number of victims and number of beneficiaries by department. All figures courtesy of the authors.

and digital media EORE, and training of trainers in EORE delivery. The analysis included descriptions of the main characteristics of victims, the density of EO victims, and EORE beneficiaries by departments in the ten most strongly affected municipalities. Additionally, FSD carried out a correlation analysis between EORE activities and the annual number of victims. Challenges encountered and lessons learned were identified by secondary research through a documentary review and analysis in collaboration with the OACP-DC EORE team.

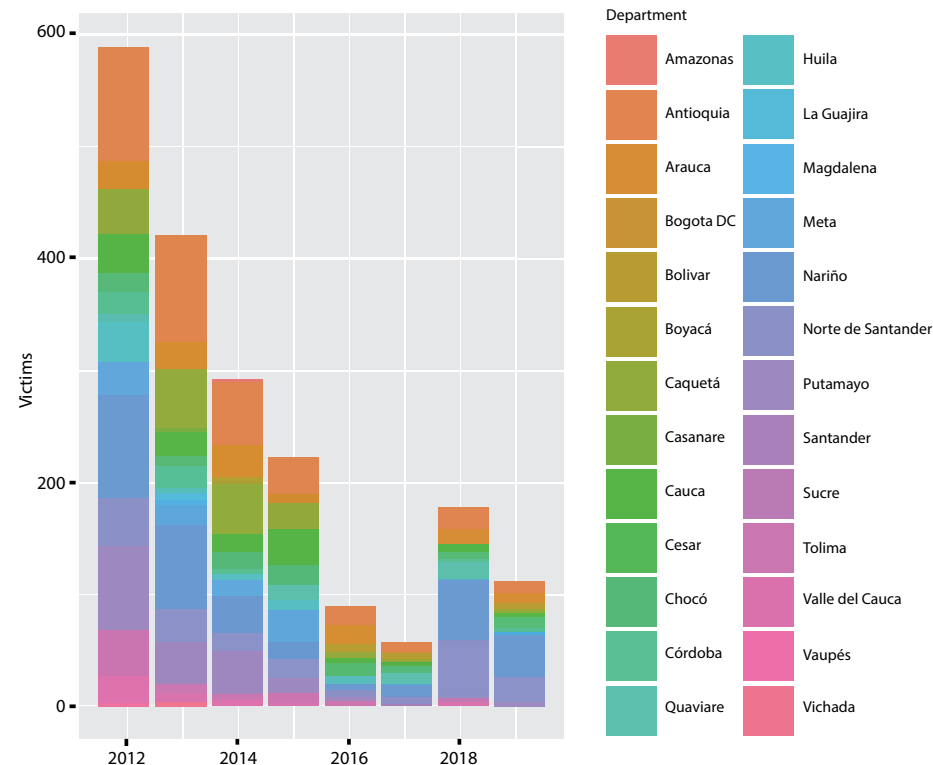


Figure 2. Number of victims per year by department

RESULTS: EO VICTIMS AND EORE STATISTICS

From 2012 to 2019, 1,958 victims were recorded, corresponding to 16.5 percent of the total 11,828 victims registered in Colombia since 1985. According to the sociodemographic characteristics of the victims (see Table 1), the majority were male and generally over eighteen years of age, and 87 percent were injured during the course of the accident (13 percent were killed). Accidents most commonly occurred during public force¹⁰ activities (51.4 percent), walking near mined zones (11.5 percent), and during the manual eradication of illicit crops (8.8 percent).

In the period under analysis, the highest number of victims (295) was recorded in 2012, followed by a progressive decrease until 2017 (Figure 2). Six out of the twenty-six EO-contaminated departments in Colombia

presented 70 percent of the total number of victims (Antioquia, Nariño, Norte de Santander, Putumayo, Caquetá, Cauca, Arauca). At the municipality level, victims were recorded in 187 out of 1,222 municipalities of Colombia, with the following distribution: two to nine victims in 55 percent of the municipalities, ten to twenty-nine victims in 18 percent, and one victim in 17 percent of the municipalities. The municipality of Tumaco, in the Nariño department, ranked first with 11 percent of the total victims.

With regards to EORE activities, the reporting process to OACP-DC by EORE organizations, and the subsequent record in the IMSMA database, has improved and led to more reliable data in recent years compared to the beginning of the study period. According to IMSMA, 15,797 activities were reported by forty different organizations, with a total of 491,955 beneficiaries during the study period (Figure 3). Eighty percent of EORE activities were carried out within the last three years of the period, with 2019 being the year with the highest number of activities (7,496 activities and 191,916 direct beneficiaries): more than double compared with the previous two years. According to the EORE model applied (Table 2), 1,639 activities (53,156 beneficiaries) correspond to EORE in the educational field; 5,436 (171,674 beneficiaries) to EORE in emergency situations; 5,308 (92,106 beneficiaries) to humanitarian demining EORE; and 3,414 (175,019 beneficiaries) to rapid response EORE.

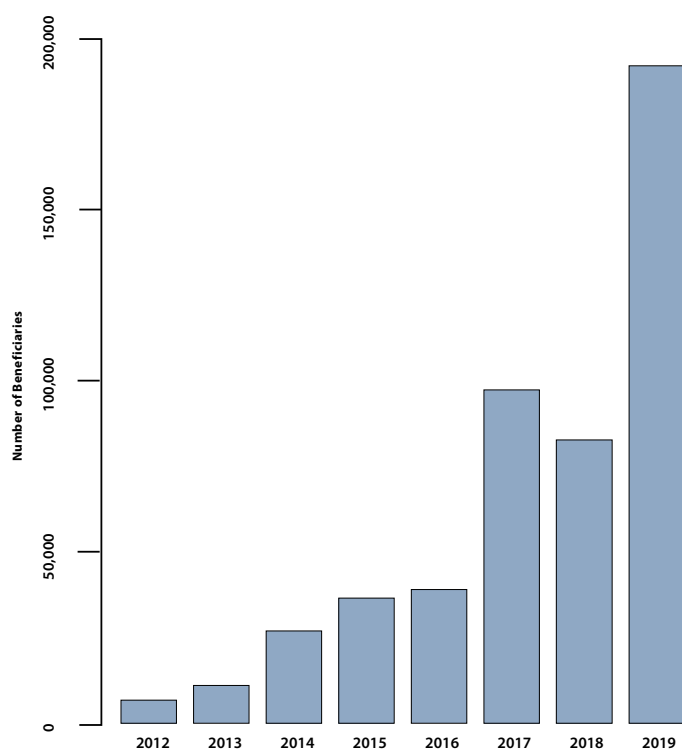


Figure 3. EORE beneficiaries per year (2012–2019).

The geographical distribution of EORE activities was consistent with the official categorization of the municipalities in accordance with their EO impact level, from type I (highest impact) to type IV (lowest impact), based on the number of victims in the last five years, the state of land restitution, the presence of illegal armed groups, and the presence of illicit crops. In fact, 93.6 percent of the EORE activities targeted type I and II municipalities, which are the most heavily affected. Figure 1 shows number of beneficiaries and victims by department.

Figure 4 shows the superposition of the beneficiaries (shades of blue) and the victims (red dots) for two periods (2012–2015 and 2016–2019). This information was desegregated by departments to show comparisons between the two periods (Table 3). The distribution of victims is similar in both periods, although in the first period there is a higher density of victims in departments such as Antioquia (north) and in the southern Pacific region (Nariño and Cauca), Putumayo and Caquetá—all regions highly-affected by the armed conflict. In the second period, there is a decrease in the number of victims and an increase in EORE activities, illustrated by areas highlighted in dark blue (higher number of beneficiaries). Both the proportion of activities in type I and II municipalities, as well as the increase in activities in recent years in the department of Nariño, show that activities in the most affected areas have been prioritized.

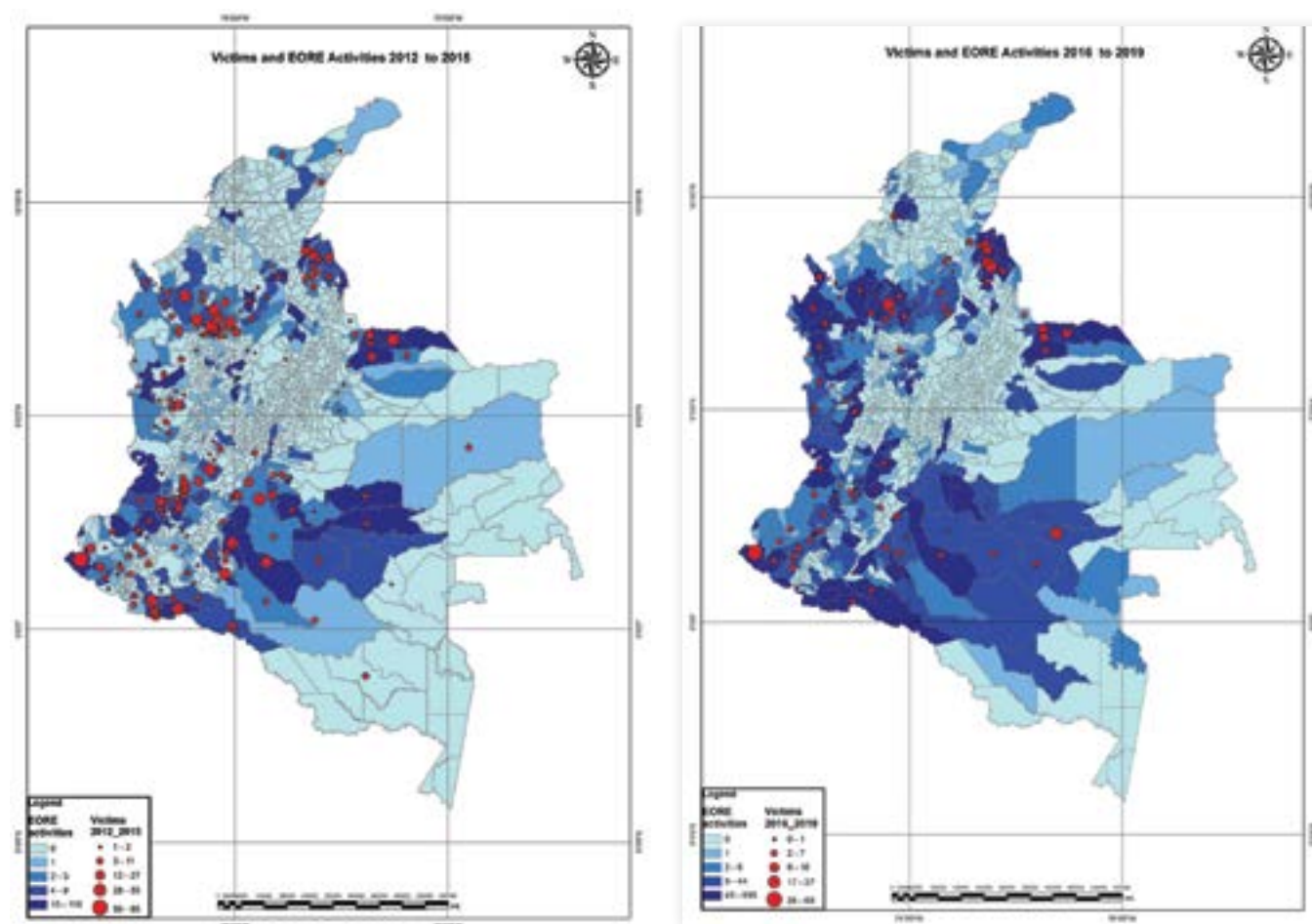


Figure 4. Number of victims and EORE activities geographical distribution during two periods: 2012 to 2015 (left) and 2016 to 2019 (right).

Department	2012-2015				2016-2019				Total			
	Victims	%	Beneficiaries	%	Victims	%	Beneficiaries	%	Victims	%	Beneficiaries	%
Antioquia	286	19	14,064	17	55	13	37,279	9	341	17	51,343	10
Nariño	217	14	3,754	5	106	24	87,217	21	323	16	90,971	18
Putumayo	164	11	4,797	6	7	2	20,871	5	171	9	25,668	5
Caquetá	156	10	4,267	5	13	3	14,678	4	169	9	18,945	4
Cauca	105	7	9,754	12	14	3	35,075	9	119	6	44,829	9
Norte de Santander	105	7	5,689	7	88	20	51,898	13	193	10	57,587	12
Meta	90	6	5,483	7	3	1	14,546	4	93	5	20,029	4
Auaucá	82	5	4,889	6	41	9	42,178	10	123	6	47,067	10
Tolima	63	4	1,527	2	4	1	8,993	2	67	3	10,520	2
Chocó	59	4	3,488	4	36	8	37,082	9	95	5	40,570	8
Huila	54	4	1,023	1	4	1	8,517	2	58	3	9,540	2
Córdoba	45	3	1,633	2	7	2	8,287	2	52	3	9,920	2
Valle del Cauca	39	3	3,427	4	5	1	8,374	2	44	2	11,801	2
Guaviare	19	1	2,627	3	28	6	3,422	1	47	2	6,049	1
Bolívar	8	1	3,625	4	16	4	11,057	3	24	1	14,682	3
La Guajira	6	0	550	1	0	0	295	0	6	0	845	1
Vichada	6	0	34	0	0	0	140	0	6	0	174	0
Boyacá	5	0	658	1	1	0	2,066	1	6	0	2,724	1
Magdalena	4	0	36	0	0	0	142	0	4	0	178	0
Amazonas	3	0	0	0	0	0	414	0	3	0	414	0
Casanare	3	0	783	1	0	0	2,674	1	3	0	3,457	1
Bogotá DC	2	0	375	0	0	0	1,679	0	2	0	2,054	0
Santander	1	0	3,234	4	0	0	5,193	1	1	0	8,427	2
Vaupés	1	0	0	0	0	0	769	0	1	0	769	0
Atlántico	0	0	12	0	0	0	1	0	0	0	13	0
Caldas	0	0	3,072	4	0	0	2,956	1	0	0	6,028	1
Cesar	0	0	299	0	3	1	946	0	3	0	1,245	0
Cundinamarca	0	0	518	1	0	0	375	0	0	0	893	0
Guainía	0	0	0	0	0	0	68	0	0	0	68	0
Quindío	0	0	67	0	0	0	0	0	0	0	67	0
Risaralda	0	0	466	1	0	0	0	0	0	0	466	0
Sucre	0	0	573	1	4	1	4,039	1	4	0	4,612	1

Table 3. Comparison indicating number of victims and beneficiaries between departments over two periods.
Table courtesy of OACP-DC.

Finally, Figure 5 shows the relationship between the number of EORE activities and victims, highlighting a change since 2016, where the curve flattened and maintained a flat trend. This indicates a decrease of the number of victims and an increase of EORE activities. Unfortunately, it is challenging to confirm a cause-effect relationship between the increase of EORE and the decrease of victims due to a lack of systematic monitoring of behavioral changes following EORE training. As Durham et al. (2005) pointed out, there are several factors (socio-environmental and political)¹¹ that influence human behaviors. In Colombia, factors related to socioeconomic disparities at the regional level may contribute to civilians engaging in unsafe behaviors. Some examples include the lack of equality in accessing education (mostly between rural and urban areas), which leads to a higher proportion of children not attending school nor receiving education on safe behaviors. Indigenous communities (widely affected by the conflict and extreme poverty) are often permanently displaced and may be difficult to access. Economic activities (rural) can also lead to unsafe behaviors as civilians must use the land or move around in dangerous areas.

CHALLENGES: EORE SCOPE AND PRIORITIZATION

The implementation of EORE actions in all contaminated areas is unfeasible in a country like Colombia due to the topography, accessibility, security issues, and distribution of contamination. Therefore, it is necessary to focus EORE efforts on the most heavily-affected and vulnerable zones. In this scenario, one option is to increase the number of participants per EORE activity according to specific criteria, such as belonging to high-risk categories (i.e., farmers and manual eradicators).¹² According to OACP-DC, municipalities are selected for EORE according to one of the following three reasons: (1) type I and II municipalities not open to humanitarian demining operations, (2) high-vulnerable municipalities due to history of significant armed conflict, and (3) municipalities where humanitarian demining is taking place.

However, in the case of the department of Nariño, a high number of victims correlates with critical socioeconomic issues. Therefore, this must be approached not only from a “number of victims” per-

spective, but also by taking into account aspects such as security issues, geographical characteristics that may affect mobilization, access to health services, cultural specificities, etc. This enables more context-specific interventions, acknowledging why current unsafe behaviors exist and what limitations can affect the expected behavioral change in the communities.

CHALLENGES: MONITORING AND EVALUATION

The NMAA has established EORE internal and external quality monitoring procedures. According to the current EORE national mine action standard (NMAA), a two-step accreditation process for EORE organizations is defined as (1) a preliminary accreditation called “authorization,” which enables operations to start and (2) a full accreditation after having acquired a pre-defined minimum experience. In order to comply with the EORE NMAA, EORE organizations need to carry out an initial evaluation of their capacity, define an improvement plan, and then monitor the progress against that plan. The external quality assurance (QA) is carried out periodically by the NMAA.

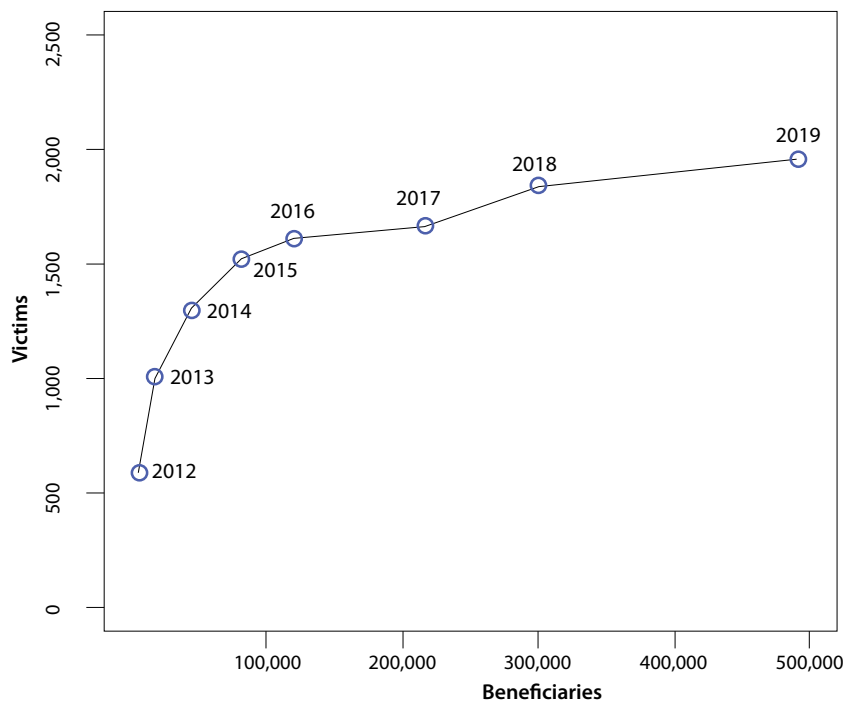


Figure 5. Correlation between accumulative number of victims and EORE activities.

One of the issues identified in the current QA process relates to the variety of organizations providing EORE (humanitarian NGOs, demining organizations, private foundations, and citizen organizations), resulting in very different capacities. Therefore, the standardized evaluation is currently applied with some flexibility according to each organization type, especially pertaining to community-based organizations (survivors, indigenous, and afro-descendant). As soon as all organizations are authorized to conduct EORE, monitoring shall take place to ensure the standardization of minimum practices in accordance with the implemented EORE model.

Finally, a clearly defined monitoring and evaluation strategy must be identified. Currently, this task is not being performed in a systematic manner. Therefore, standardized indicators at both strategic and operational levels should be defined, in addition to the construction of the baseline, and all data should be consistently gathered and reported to the National Authority. This data should help clarify how local populations are affected by EO and inform programs about trends or changes impacting the vulnerability of communities. Finally, the implementation of an evaluation system should be established in order to measure the real impact of activities, including an effective ethnical and gender-sensitive approach.

EORE MESSAGES AND DISSEMINATION METHODS

In addition to standard face-to-face EORE meetings, OACP-DC implemented alternative dissemination methods during the study period. Specifically, radio advertisement broadcasts were released in thirty-four municipalities of thirteen departments in 2015. In addition, a strategy named “Safe Steps” was implemented by the Fundación Antonio Restrepo Barco in collaboration with Discovery Channel, resulting in a mini-series with video-informative capsules and virtual strategies that were used to promote safe behaviors in

EO-affected regions. Moreover, in order to overcome the challenge of defining standardized messages, a national technical board was arranged in February 2020 to review the pedagogical roadmap with adjusted and updated EORE messages, where inputs made by the involved organizations were discussed. Finally, the NMAA is currently working on the inclusion of a multicultural approach for EORE. This last aspect is necessary, considering that one of the objectives for 2020 is the construction of a guideline document for the implementation of EORE with an ethnically sensitive approach, which will be translated or adapted to native languages to facilitate its implementation in the field.¹³

LESSONS LEARNED

EORE activities in Colombia are performed in a coordinated manner between OACP-DC and EORE partners, technically supported by UNICEF. Technical support includes updating messages of the EORE pedagogical route and designing guidelines and other materials; updating the EORE standard and EORE models (educational field, humanitarian demining, and emergencies); and construction and implementation of the EORE Quality Management System (accreditation, certification, and quality control). Under this coordination, an EORE National Standard was constructed and updated, and EORE models were standardized. This understanding permitted experienced organizations, in accordance with the Colombian context, to use and implement proven experiences from other countries.

Since 2006, the NMAA conducted periodic technical meetings with all stakeholders performing, advising, monitoring, funding, or investigating EORE activities and educational institutions. This activity allowed all stakeholders to share best practices and innovative approaches, identify shortcomings, and reach agreements in order to standardize and continuously improve EORE in Colombia.

In Colombia, several areas highly affected by the conflict do not have stable security conditions necessary for the implementation of humanitarian demining operations. In these areas, EORE represents the first approach to reduce the risk of EO accidents, enable liaison with the community, and help to create the conditions for future humanitarian demining. Additionally, the presence of illicit crops, which is usually related to critical security issues, highlights the importance of delivering EORE sessions to manual crop eradicators and identifying the numerous risks they face, including a higher risk of accidents.

CONCLUSION

In the last few years, there has been a significant increase in EORE activities in Colombia, supported by an important standardization effort on all EORE models implemented in the country. Although information management of EORE data has improved, there is still

room for more systematic and consistent data gathering, recording, and analysis at both an operational and strategic level. Similarly, the lack of a monitoring and evaluation system prevents the quantification of the impact of the different EORE programs.

Evaluation of the correlation between EORE activities and the number of victims cannot be a quantitative task alone. Qualitative studies are also required to ascertain whether the expected change of behaviors has been achieved through methodologies previously implemented in countries like Afghanistan and Somalia.¹⁴ Finally, the definition of a context-specific prioritization methodology for targeting specific areas and beneficiary groups is one of the main remaining challenges, strongly affected by the continually changing security conditions. ©

See endnotes page 67

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Angela De Santis has over fifteen years of professional experience, including in the fields of crisis management and humanitarian aid. She has extensive experience working with mine action programs in Africa and Latin America, with a special focus on Colombia. She holds a Ph.D. in Remote Sensing, GIS, and Cartography; an International Master's on Management of NGOs, International Cooperation, and Humanitarian Aid; and a Project Management Professional (PMP) certification. She has experience in mine action, victim assistance, post-natural disaster environments, gender, conflicts in Latin America, and capacity-building.

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Matt Wilson has served as Head of Operations for FSD in Geneva for eight years and was formerly a Major and Ammunition Technical Officer (ATO) in the British Army. As Head of Operations he is responsible for successful delivery of donor and program objectives, new operations, program development, safety and operational procedures, quality assurance and compliance to donor procedures, and support to donor relations. Wilson has an MSc in Risk, Crisis, and Disaster Management from Leicester University and his thesis covered risk perception and cultural theory in mine action and explosive ordnance disposal (EOD).

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Sebastián Tovar Jaramillo is a modern language professional specializing in commercial translation. He has worked in the mine action sector in Colombia for more than four years as a supporting member of the team of Technical Advisers at FSD and has experience with mine detection dogs, as well as manual and mechanical assets in demining; EOD activities; and environmental management in mine action. In November 2019, Jaramillo was involved in an initial mine risk education (MRE) training coordinated by the Danish Demining Group and led by OACP. Among other activities, he has been involved in the construction of NMAS since 2017. Jaramillo has a Master's in Political Science and International Relationships.

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