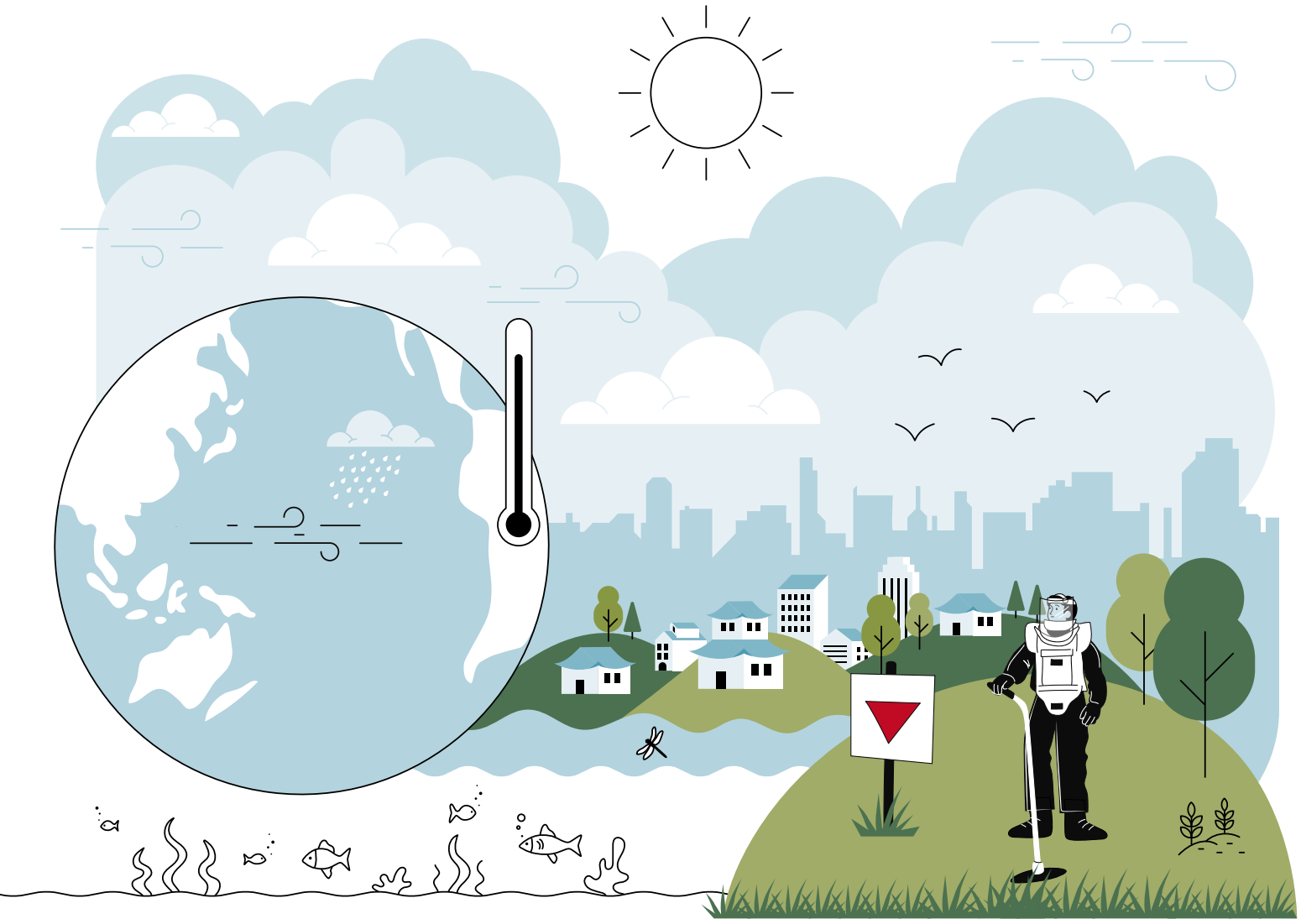
GICHD

CLIMATE RESILIENCE PRIORITY-SETTING IN MINE ACTION

METHODOLOGY GUIDE



ACKNOWLEDGEMENTS

The Geneva International Centre for Humanitarian Demining (GICHD) expresses its utmost gratitude to the people and institutions that so generously collaborated in support to develop this methodology guide. The GICHD would like to specifically extend sincere thanks to the following institutions:

The Directorate for Mine Action (DMA) in Iraq, the Vietnamese Mine Action Center (VNMAC), the Quang Tri Mine Action Center (QTMAC),the Provincial Mine Action Database and Coordination Unit (DBCU-QB) in Quang Binh, MILE Organization for Environmental Protection, and Norwegian People's Aid (NPA).

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Climate Resilience Priority-Setting in Mine Action – Methodology Guide
GICHD, Geneva, 2025

Cover: Illustration by Beatriz Tirado

CONTENTS

ABBREVIATIONS AND ACRONYMS

CHA	Confirmed Hazardous Area
CR	Climate Resilience
DBCU-QB	Provincial Mine Action Database and Coordination Unit (Quang Binh, Vietnam)
DMA	Directorate of Mine Action (Iraq)
GICHD	Geneva International Centre for Humanitarian Demining
IMAS	International Mine Action Standards
IMSMA	Information Management System for Mine Action
NDC	Nationally Determined Contribution
NMAA	National Mine Action Authority
NMAC	National Mine Action Centre
NPA	Norwegian People's Aid
NTS	Non-Technical Survey
PS	Priority-Setting
QTMAC	Quang Tri Mine Action Center
SEDP	Socio-Economic Development Plan
SHA	Suspected Hazardous Area
SOP	Standard Operating Procedures
TS	Technical Survey
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change
VNMAC	Vietnamese Mine Action Center
WWF	World Wildlife Fund

1. INTRODUCTION

The purpose of the Climate Resilience Priority-Setting in Mine Action – Methodology Guide is to support national mine action authorities and national mine action centres in incorporating climate resilience considerations within existing national mine action priority-setting and tasking processes, to improve the efficiency and effectiveness of mine action programmes, in areas vulnerable to climate-related events. It also provides relevant guidance for mine action organizations regarding the link between climate resilience and priority-setting.

The methodology consists of two main tools.

- **Tool I** supports the assessment of the level of integration of climate resilience considerations within existing national mine action priority-setting and tasking processes.
- **Tool II** provides an exhaustive list of climate resilience criteria and indicators that can be tailored to the national context and used to prioritize suspected and confirmed hazardous areas.

The guide provides step-by-step guidance on the application of the methodology used, including good practices observed during the piloting of the methodology in Vietnam and Iraq. The guide begins with an overview of the methodology process and its tools. Key aspects for applying the methodology are then presented, followed by detailed guidance of how to use each tool. Annex A contains the tools.

LINKING PRIORITY-SETTING IN MINE ACTION WITH CLIMATE RESILIENCE

Traditionally, prioritization of land release tasks has focused on reducing immediate risks such as addressing accident rates and proximity to hazardous areas. Additionally, the mine action sector has begun linking land release activities with global agendas, such as the United Nations Sustainable Development Goals, to further enhance the long-term outcomes of mine action interventions. Given the long-term consequences of climate change, together with the effort to enhance communities' climate resilience, the International Mine Action Standard (IMAS) 07.13 'Environmental management and climate change in mine action', states that mine action programmes shall consider climate change, resilience, and environmental aspects in their priority-setting, planning, and tasking processes as early as possible.[1]

This guide follows up on the recommendation of the 2023 GICHD study 'Mine Action and the Resilience of Communities to Climate Change'[2] to establish a methodology for mine action stakeholders to incorporate climate change-related data and climate resilience considerations into existing priority-setting and tasking processes.

According to IMAS 07.13, climate change is defined as "long-term shifts in temperatures and weather patterns".[3] Climate change-related events, such as extreme weather (e.g. flooding, droughts, extreme temperatures, and sandstorms), along with biodiversity loss, land degradation, and water scarcity negatively impact socio-economic development. Where present, explosive ordnance contamination exacerbates the damaging effects of climate change, negatively impacting the sustainable livelihoods of communities. This is particularly the case for countries and territories affected by explosive ordnance with greater vulnerability to climate change.

Addressing explosive ordnance contamination directly benefits the sustainable livelihoods of communities. There is reasonable evidence to indicate that mine action, and particularly good practice in land release, can indirectly benefit the climate resilience of communities[4] defined in IMAS 07.13 as the "capacity to cope with a climate event or trend in ways that essential function, identity and structure is maintained".[5] Therefore, climate resilience considerations in priority-setting have the potential to maximize the positive impact of mine action programmes towards the sustainable livelihoods of affected communities.

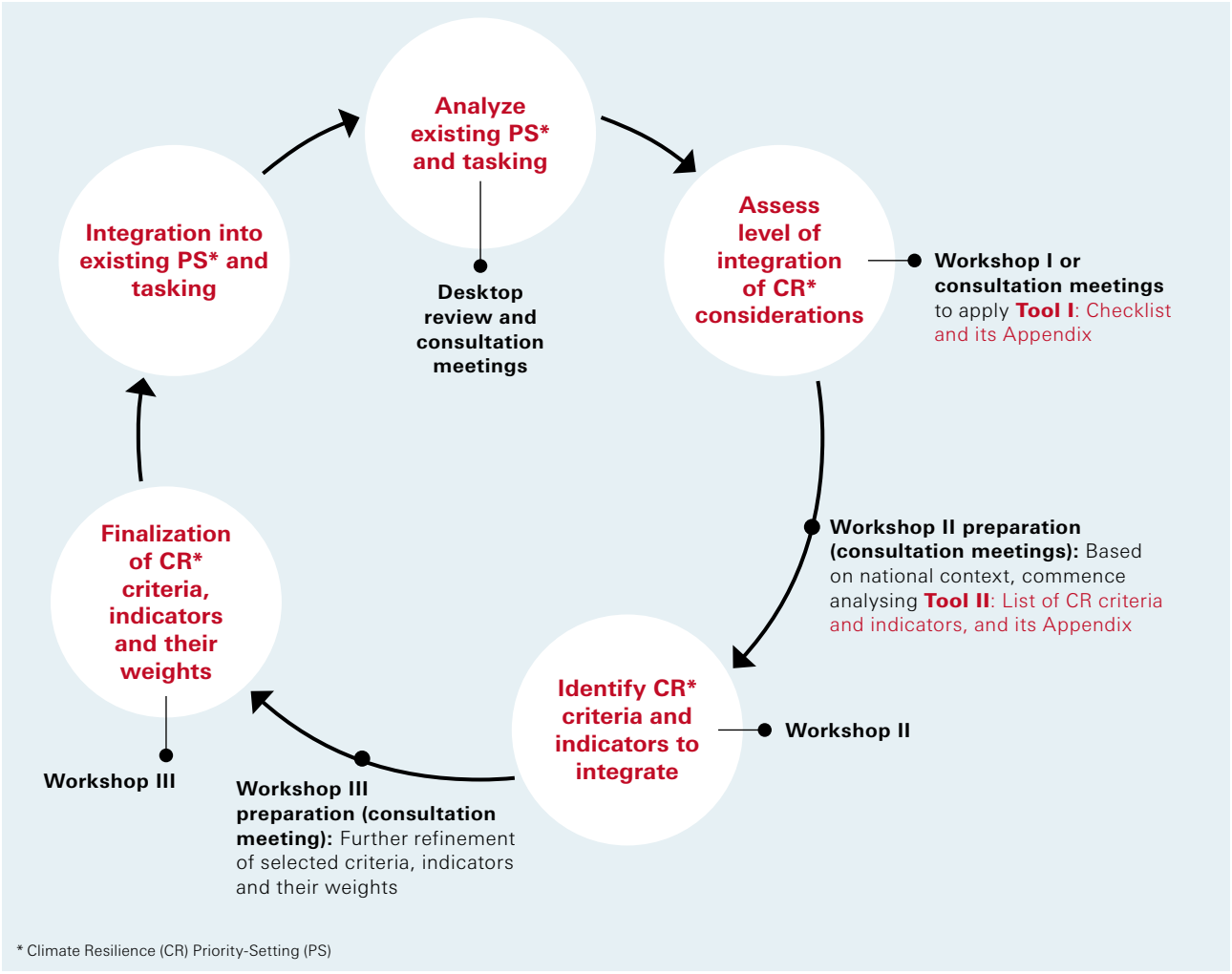
Other key recommendations from the GICHD study include promoting climate awareness and environmental protection in the mine action sector, integrating climate vulnerability data into priority-setting, conducting climate risk assessments, and enhancing coordination between mine action, environmental, and climate authorities. These practices form the foundation for embedding climate resilience considerations into priority-setting and tasking processes, and underscore the relevance of addressing this critical topic in mine action.

2. OVERVIEW OF THE METHODOLOGY

The methodology to address climate resilience priority-setting in mine action is defined by a cycle of activities in mine action. It starts with the analysis of the existing priority-setting and tasking processes, continues with the understanding of climate resilience and environmental considerations related to priority-setting in mine action (Tool I), and concludes with the definition of specific and tailored climate resilience criteria and indicators (Tool II). The cycle is completed with the continuous evaluation of the resulting priority-setting and tasking processes. Key prerequisites for applying the methodology are outlined in Section 3.

Figure 1 below illustrates how the application of the tools should be sequenced with consultation meetings and workshops. Detailed guidance concerning the application of the tools and consultation process is outlined in Section 4.

Figure 1: **Sequenced application of tools and consultation processes**

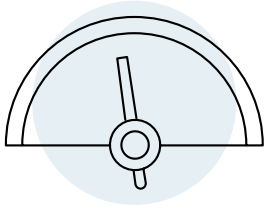


Tool I: Checklist for priority-setting to include climate resilience considerations

Tool I is a checklist of requirements to assess the level of integration of climate resilience considerations within existing national mine action priority-setting and tasking processes. It includes a list of questions covering plans, policies, standards, and data-gathering processes related to climate resilience. The collection of such information helps to understand and assess the national context in relation to climate resilience and priority-setting, and tasking processes in mine action. This information is required to apply Tool II and select climate resilience-related criteria and indicators relevant for the national context, capacities, and existing processes and methods.

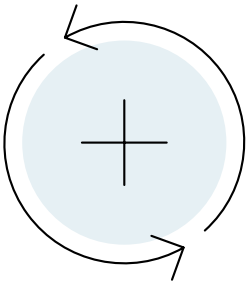
Appendix to Tool I: Environmental and climate change literacy – specific indicators

The Appendix to Tool I provides a list of specific criteria and respective indicators in support of identifying the mine action programme's capacity enhancement needs regarding environmental protection and climate change adaptation. While being part of Tool I, this Appendix can also be used as a standalone tool throughout the application of the methodology, as capacity enhancement needs might arise following the effective data gathering and analysis of environmental, climate change, and resilience data.



Tool II: Priority-setting values, criteria, and indicators for climate resilience in land release

Tool II provides a generic list of climate resilience criteria and indicators that can be integrated within existing priority-setting and tasking processes for mine action in determining which suspected hazardous area/confirmed hazardous area should be prioritized. Criteria and respective indicators can be individually chosen from the list and tailored according to the national context, available resources, and data.



Appendix to Tool II: Understanding environmental, climate change, and resilience trends – specific indicators

The Appendix to Tool II provides an additional list of specific indicators to better understand the national environmental, climate change, and resilience trends in support of priority-setting and tasking processes. Individual indicators can be chosen and tailored according to the national context, resources, and data availability. The list can be applied either in parallel to Tool II, or after criteria and indicators have been identified in Tool II.

3. PREPARATION FOR APPLICATION OF THE METHODOLOGY

The application of the methodology requires a consolidated understanding of existing priority-setting and tasking processes in mine action and how these relate to other processes and activities within mine action programmes. Understanding the following key interrelated components constitutes the following prerequisites:

- The conceptual framework of priority-setting in mine action.
- Environmental protection and climate change adaptation.
- Multi-stakeholder approach (key stakeholders and their roles and responsibilities).
- Guiding and measuring prioritization efforts: values, criteria, indicators, and weights.
- Information management: data collection and assessment.
- Existing prioritization and tasking processes.

THE CONCEPTUAL FRAMEWORK OF PRIORITY-SETTING IN MINE ACTION

In mine action, priority-setting is defined as "the process of deciding which tasks should be undertaken first, given limited resources and time. Priority-setting applies to all aspects of mine action".[6]

Typically, two interrelated levels of prioritization are defined:

The macro-level (big P):

- Refers to political and strategic priorities defining where most resources should be allocated. These priorities can be based on geographical considerations (e.g. provinces, districts, sub-districts) as well as on strategic thematic and programmatic (non-geographical) considerations, guiding resource allocation and overarching objectives for mine action programmes. Examples of such non-geographical considerations include the broader impact of mine action on safety, socio-economic development, or recovery of critical infrastructure.
- Macro-level prioritization, therefore, serves as a foundational framework for integrating both geographical and non-geographical elements in alignment with a country's national strategy and stakeholder interests. In doing so, it enables a holistic and coordinated approach to reducing the risks and consequences of explosive ordnance.
- It is established at the governance level of a national mine action programme (e.g. national mine action authority (NMAA)/national mine action centre (NMAC)), reflecting the interests of all stakeholders, including other government ministries. It should align with national legislation, development plans and policies, and obligations under international conventions.

The micro-level (small p):

- Refers to the operational-level decision-making that determines the prioritization of specific tasks within the broader framework established by macro-level priorities. Unlike macro-level prioritization, which sets strategic goals and allocates resources across broader categories (e.g. geographical areas or thematic objectives), the micro-level is concerned with identifying and scheduling individual tasks to be executed in a specific order.

- This level of prioritization is typically managed at the programme implementation level by stakeholders such as mine action organizations, local authorities, and community representatives. Decision-making at this level is influenced by operational needs, resource availability, and on-the-ground conditions.
- Tasks may include clearance of specific hazardous areas, conducting non-technical or technical survey, explosive ordnance disposal, or delivering risk education in high-risk communities. Priority is often assigned based on immediate risks, such as proximity to populated areas, schools, or essential infrastructure (e.g. water systems, roads).
- Local stakeholders, including community leaders and regional government officials, often provide input on which tasks are most critical for improving safety and livelihoods. Decisions are also made with practical constraints in mind, such as weather conditions, seasonal changes, security risks, and availability of demining teams or equipment.
- Micro-level prioritization must still align with macro-level objectives, ensuring that operational decisions contribute to the overarching national strategy.

ENVIRONMENTAL PROTECTION AND CLIMATE CHANGE ADAPTATION

Mine action stakeholders' consolidated understanding and experience in environmental protection and climate change adaptation practices contribute to the effective integration of climate resilience considerations in priority-setting and tasking processes. Therefore, it is important that stakeholders invest in continuous training and capacity enhancement initiatives that focus on environmental protection and climate change adaptation practices. This will enable a better understanding of environmental protection and climate resilience-related data collection and analysis in the decision-making process for prioritization.

MULTI-STAKEHOLDER APPROACH

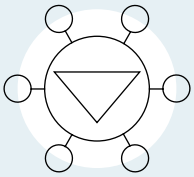
Coordinating national priority-setting for mine action is a national responsibility, typically assigned to NMAAs/NMACs. These governmental bodies oversee planning and coordination to ensure that different actors' priorities, whether they come from provincial mine action programmes or national and international mine action organizations, are aligned in a coherent national strategy and plan. This is the governance structure suggested by IMAS 02.10 'Guide for the establishment of a mine action programme',[7] and reflected in other IMAS chapters, namely IMAS 07.11 'Land release'.[8]

An effective priority-setting process requires an open and inclusive approach, facilitating communication among multiple stakeholders either with converging or diverging interests and perspectives, as well as diverse expertise as outlined in Figure 2. This includes national government agencies, mine action organizations, and affected communities. This is a process that should be ideally established through consensus building.

In practice, priorities can also be indirectly set by international, national, and local donors based on needs identified by mine action organizations and local authorities. Therefore, it is particularly important for NMAAs/NMACs to engage with the entities that provide resources to execute prioritized mine action tasks, to discuss and agree on clear priority-setting values, criteria, and indicators. This includes international donors, national government agencies, local authorities, mine action organizations, and national organizations.

Stakeholders who collect data to measure the indicators, including mine action organizations, communities, and expert organizations, should also be involved in defining the criteria and indicators, to consider the requirements, implications, and viability of collection and reporting such data.

Figure 2: **Example of a stakeholder landscape to coordinate the inclusion of climate resilience considerations into existing priority-setting and tasking processes**



Mine action stakeholders

- National mine action authority
- National mine action centre/s
- Provincial mine action centres
- National and international mine action organizations (humanitarian and commercial)

Government

- Ministries, provincial and district/municipal authorities responsible for mine action, the environment, and climate change
- The military

Local communities

- Community authorities
- Community residents, including marginalized groups[9]
- Local environmental/climate change-related NGOs and organizations
- Community-based organizations such as local environmental groups, women's rights groups, and indigenous rights groups

International community

- Mine action donors (private and public)
- UN agencies focusing on the environment and climate change
- Multilateral aid agencies
- International environmental/climate change-related NGOs and organizations
- Peacekeeping forces

GUIDING AND MEASURING PRIORITIZATION EFFORTS: VALUES, CRITERIA, INDICATORS, AND WEIGHTS

At a high level, priorities are shaped by values, which represent the beliefs and expectations of communities and are often tied to culture. These values, though subjective, influence what is considered important. To apply values more objectively, criteria are used. These are more specific guidelines or goals. Each criterion can be further detailed by a set of indicators, which provide specific measures or observations that allow the assessment of the criterion.

Values, criteria, and indicators can have differing relative importance. The importance can be defined by applying a specific weighting to each of them, indicating, for example, what is most valuable or what has the most impact. Consequently, clarifying which indicators and respective weights will be used to set mine action priorities at the various levels is a critical policy decision that must be tailored to the specific context of application.[10]

There are no universal or standardized criteria and corresponding indicators for priority-setting, although general examples could be adapted to specific contexts, as Tool II of the present methodology aims to do for climate resilience considerations. Each criterion and indicator will differ according to the national climate change and resilience context, nature of contamination, national capacities, legislation and policies, resources, and the stakeholders involved.

INFORMATION MANAGEMENT: DATA COLLECTION AND ASSESSMENT[11]

Effective information management, supported by the tailored use of the Information Management System for Mine Action (IMSMA), plays a crucial role in priority-setting and tasking processes. Information gathering and assessment, including monitoring and evaluation resources, are required to define values, criteria, and their respective indicators. Data collection requirements are needed to measure and quantify the defined indicators. These two complementary processes can either be conducted manually or through specific information management tools and systems.

For example, in Iraq, the Directorate of Mine Action's (DMA) priority-setting and tasking process is supported by IMSMA. Data collection requirements include fields for priority-setting criteria. These requirements are codified in national mine action standards defining non-technical survey (NTS) and hazard reporting requirements, which forms include an 'impact classification of contaminated areas' as shown in Figure 3.

Figure 3: **Example of a DMA hazard report outlining priority-setting criteria with their respective pre-defined weights[12]**

IMSMA

Ministry of Environment / Directorate of Mine Action

Hazard Report

[10] **Impact Classification of Contaminated Areas:**

No.	Impact Type	Choose the Answer
1	2 Points if Landmines found	☐ Yes ☐ No
2	2 Points if Cluster Munitions found	☐ Yes ☐ No
3	2 Points if IEDs found	☐ Yes ☐ No
4	1 Point if UXO Spots found	☐ Yes ☐ No
5	2 Points if it blocked Irrigated Agricultural Fields	☐ Yes ☐ No
6	1 Point if it blocked Rainfed Agricultural Fields	☐ Yes ☐ No
7	1 Point if it blocked Pasture Lands	☐ Yes ☐ No
8	1 Point if it blocked Water Access	☐ Yes ☐ No
9	1 Point if it blocked Non-Agricultural Areas	☐ Yes ☐ No
10	2 Points if it blocked Housing	☐ Yes ☐ No
11	1 Point if it's less than a 1000 m far from the residential area	☐ Yes ☐ No
12	1 Point if it blocked Roads	☐ Yes ☐ No
13	1 Point if it blocked Infrastructure	☐ Yes ☐ No
14	1 Point if it caused human accidents	☐ Yes ☐ No

Total Impact: ☐

☐ Person was injured by Landmines or UXO Spots during the past 24 months. **Multiply by2:** ☐

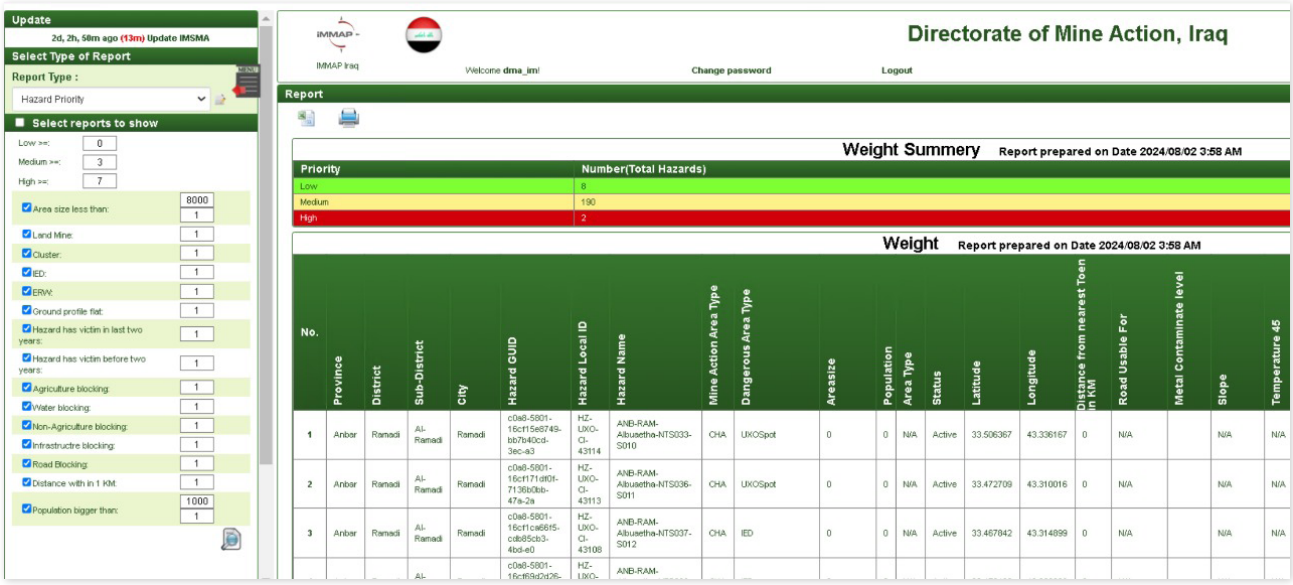
Total Impact: ☐

- If the total impact is 'Zero 'classify the area as it does not contain any landmine problems.
- If the total impact is between '1-5'then the impact is low.
- If the total impact is between '6-10 'then the impact is medium.
- If the total impact is '11 'or more then the impact is high.

Impact Classification: ☐

DMA in Iraq uses IMSMA to automatically organize the data collected through the NTS teams into categories of low, medium, and high priority, as shown in the weight summary bar, enabling systematic task planning, as Figure 4, below, depicts.

Figure 4: **DMA/IMSMA-generated hazard priority-setting matrix**[13]



IMSMA integrates a weighting mechanism that assigns specific points to each prioritization criterion. This ensures a structured and objective evaluation process, where higher-weighted criteria indicate greater priority. For example, areas closer to critical infrastructure or with a higher population density may receive higher priority due to their broader social or economic impact.

By automating data collection, classification, and analysis, and streamlining the decision-making process, the DMA ensures consistency across all operations. This integration demonstrates how technology and data management can improve priority-setting processes in mine action, enabling Iraq's DMA to align its operations with broader strategic goals and stakeholder needs.

Similarly in Vietnam, Quang Tri Mine Action Center (QTMAC) and the Provincial Mine Action Database and Coordination Unit (DBCU-QB) in Quang Binh, use IMSMA as the main tool in the priority-setting process for mine action, emphasizing the relevance of information management systems in support of the implementation of effective priority-setting.[14]

The information gathering and assessment process includes criteria for evaluating risks, understanding beneficiary issues, and analysing current land use. During both non-technical and technical survey activities, information gathered and data collected is documented by mine action organizations using a task priority assessment sheet (criteria, indicators and their weights) issued by QTMAC (see Figure 5). This process aims to establish an initial prioritization list, which is then used to update the IMSMA database with corresponding priority classifications of high, medium, or low priority for each confirmed hazardous area (CHA). This systematic approach ensures that priorities are based on accurate and relevant field information. Notably, the district prioritization within the province does not have a separate form on IMSMA. However, based on the information gathered and data collected for each CHA at the provincial level, QTMAC conducts district prioritization through a desktop assessment to also classify each district into high, medium, or low priority. QTMAC is responsible for updating the list of district priorities every six to twelve months, considering changing dynamics, particularly the number of accidents and developments in line with the Vietnamese socio-economic development plan (SEDP), indicated in the text box below. IMSMA is then adjusted to reflect these changes with district prioritization.

Figure 5: **Extract from QTMAC task priority assessment sheet**[15]

TASK PRIORITY ASSESSMENT SHEET

Mã số nhiệm vụ - Task ID:

Địa điểm - Location:

TT/ NO.	TIÊU CHÍ ĐÁNH GIÁ/ *ASSESSMENT CRITERIA*	Phản hồi/ Response	Điểm/Scores	Điểm được tính/Awarded Score	Chịu trách nhiệm/ In charge	Ghi chú/Remarks
A.	**SỬ DỤNG ĐẤT - HƯỞNG LỢI / *LAND USE - BENEFICIARY***	**Điểm - Score (1)**	**70**	**0**		Điểm tối đa / Maximum score = 70
1	Khoảng cách từ CHA đến khu vực quy hoạch phát triển kinh tế của địa phương sẽ thực hiện trong vòng 3 năm (cấp thôn, xã, huyện, tỉnh) là bao nhiêu mét? *What is the distance from the CHA to local SEDP areas which will be implemented within 3 years (village, commune, district, province)? (in meter)*	<500m 500m - 1500m >1500m	10/5/3			
6	Có bao nhiêu người được hưởng lợi trực tiếp từ CHA này? *How many people will directly benefit from this CHA?*	> 50 người/people 50 - 20 người/people < 20 người/people	10/5/3			
B.	**NGUY CƠ / HAZARD**	**Điểm - Score (2)**	**30**	**0**		Điểm tối đa / Maximum score = 30
1	Có tai nạn nào xảy ra trong vòng 5 năm, từ 5 - 10 năm, và trên 10 năm qua trên địa bàn thôn/bản có CHA không? *Have there been any accidents within the village with CHA in the past 5/5 to 10/over 10 years?*	5/5-10/>10	10/5/3			
C.	**KHÁC - OTHERS**					Điểm tối đa / Maximum = 0
1	Hiện trường CHA có được chủ đất/chính quyền địa phương chấp thuận rà phá? *Is there community / landowner's consent to clear the CHA?*	CÓ-YES / KHÔNG-NO				Mục này nếu **KHÔNG** thì không đưa vào danh sách ưu tiên If **NO** -> do not include in the clearance list. 6 months if NO
	TỔNG ĐIỂM/TOTAL SCORE (1+2)		**100**	**0**		Điểm tối đa / Maximum score = 100
	ĐÁNH GIÁ ƯU TIÊN TỔNG THỂ CHO NHIỆM VỤ **THE OVERALL PRIORITY ASSESSMENT FOR THIS TASK**	**CAO-HIGH / TRUNG BÌNH-MEDIUM / THẤP-LOW**	**Thấp/Low**			**- Điểm/score >= 70, Cao/High** **- Điểm/score = 40-69, Trung bình/Medium** **- Điểm/score <= 39, Thấp/Low**

Extract from QTMAC priority scoring form concerning SEDP projects

Assessment criteria:

What is the distance from the CHA to local SEDP areas in which projects will be implemented within 3 years (in metres)? (village, commune, district, province)

- Have meeting(s) with district and communal authorities been planned to collect information, planning maps, and SEDPs within 3 years.
- Measure the closest distance from the outermost boundary of CHA to the planning area and score according to the defined form (*conduct field visit and use Google Maps to measure distance*)

Other applications can be developed and tailored within the IMSMA platform, to cater to national contexts and requirements. Such tools have the potential to accelerate the analysis and evaluation of areas or tasks, particularly if combining artificial intelligence computational methods. Such digital tools can facilitate visualization approaches and support a more efficient allocation of NMAA/NMAC resources invested in priority-setting and tasking processes.

The application of such tools may also influence the definition of criteria and indicators, as data can be efficiently collected from existing digital sources (e.g. datasets collected and stored in information management systems from national health services, infrastructures services, land use registries).

EXISTING PRIORITIZATION AND TASKING PROCESSES

The application of the methodology focuses on climate resilience considerations and is based on the premise that national mine action priority-setting and tasking processes are clearly established before-hand. The existence of such formal processes is therefore a prerequisite. This was validated when attempting to pilot the application of the methodology in Angola (Angolan National Mine Action Agency) and Vietnam (Vietnam Mine Action Centre), where national priority-setting processes are less well defined and lack formalized processes. In such cases, climate resilience considerations should be integrated into the overall development of priority-setting processes. The present methodology can be adapted for that purpose.

Where national mine action priority-setting and tasking processes are already established, having a thorough and detailed understanding of how they are defined and applied is an essential prerequisite. The example that follows describes such a process at the regional level for QTMAC and DBCU-QB in Vietnam. It is a good example of a well-functioning priority-setting process at the regional level, in a context where the national level priority-setting process is not so well defined:

The process for clearance prioritization for QTMAC and DBCU-QB in Vietnam consists of several structured steps, as can be seen in Figure 6, outlining QTMAC's process map of clearance prioritization.

The first step, as briefly mentioned above, includes an initial priority assessment. This involves evaluating risks, beneficiary issues, and current land use to collect field information and complete a priority scoring form during NTS and technical survey activities. This is conducted by mine action organizations. This data forms an initial prioritization list that updates the IMSMA database with corresponding priority classifications (high, medium, low). Criteria include the fact that:

- land will be used in socio-economic development projects;
- land will be used for community development;
- target beneficiaries are clearly identified based on needs; and
- a development agency will assist beneficiaries in making productive use of released land.

In step 2, QTMAC analyses the initial priority assessment results. Using the priority scoring form, QTMAC conducts a more detailed evaluation of the CHA. This includes verifying information, analysing socio-economic development planning maps, calculating scope, and conducting field assessments. The updated lists and maps of prioritized tasks are then posted on the QTMAC website, highlighting high and medium priority CHAs.

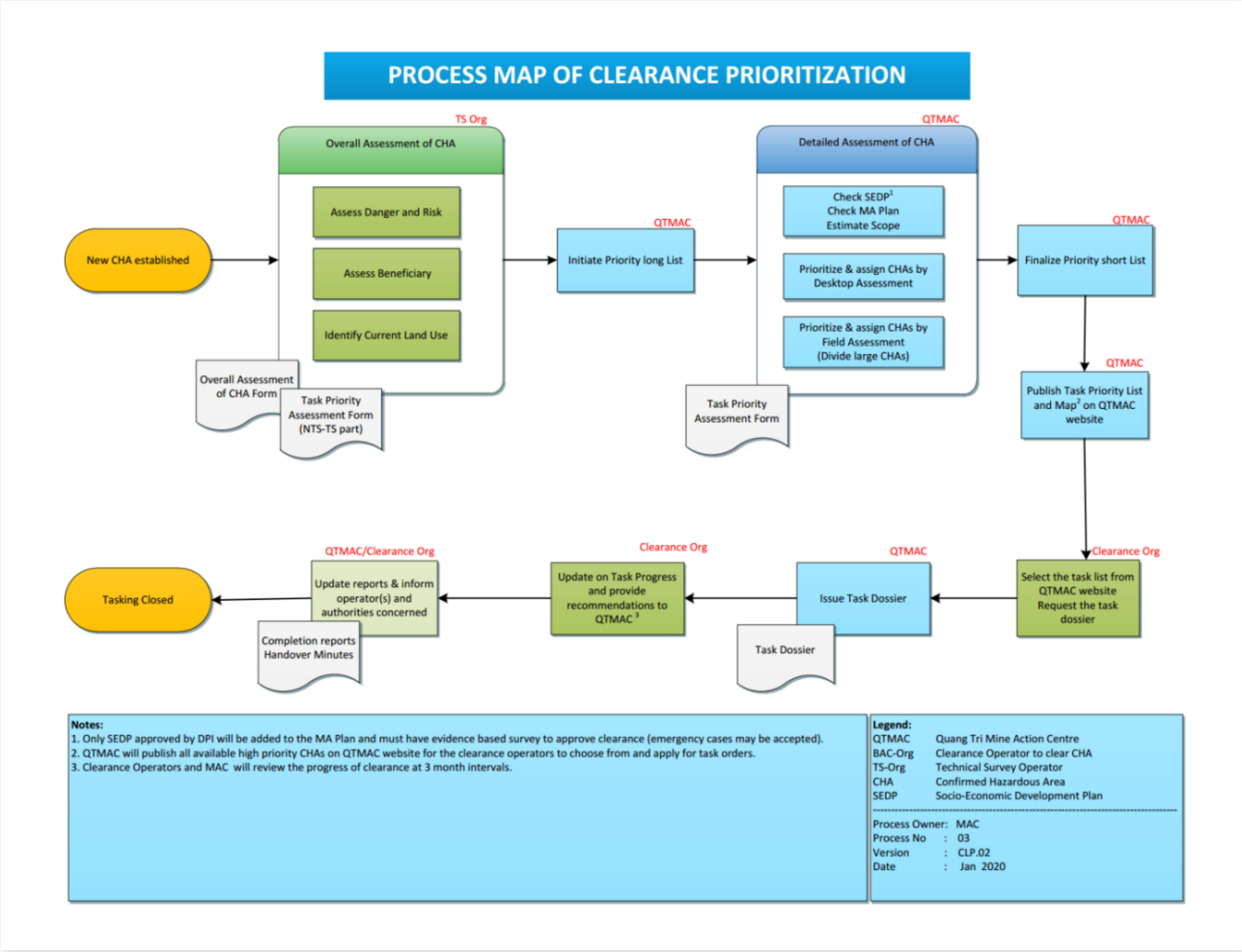
Step 3 involves mine action organizations who review the prioritized tasks on the QTMAC website. These organizations select tasks and submit their choices, after which QTMAC acknowledges receipt and informs them of the tasking timeline. Once mine action organizations start the clearance of a CHA, they must keep QTMAC updated on progress and any challenges faced, as well as collaborate on the handover of cleared land to communities and local authorities.

Step 4 emphasizes the collaboration between QTMAC and mine action organizations in updating results and facilitating the handover of cleared land to local communities and authorities.[16]

QTMAC – Task dossier preparation

More specifically on the task process: once QTMAC has posted the CHAs, according to high and medium priority, on their website, and mine action organizations have registered their choices, QTMAC prepares task dossiers for each CHA, based on mine action organizations' requirements. The task dossiers comprise two sections: the first is for mine action organizations conducting survey activities that include task orders, non-technical survey reports, technical survey task reports, and related documents. The second section is for mine action organizations conducting clearance. This section is left blank for mine action organizations to update with required content during task implementation and completion. After completing clearance and handing over the land, mine action organizations return the completed documents to QTMAC for record-keeping.

Figure 6: **QTMAC's process map of clearance prioritization**[17]



In brief, a national priority-setting process needs to take into consideration the following:

- Alignment with national strategic goals and objectives;
- Existing policies and legislation (national development plans, national laws, obligations under international conventions etc.);
- Governance structures and processes (who makes decisions, when, where, and how);
- Integration across macro- and micro-prioritization levels;
- Multi-stakeholder coordination and consensus building;
- Operational feasibility and resource allocation;
- Resources and information management processes required to ensure the collection, validation, storage, and analysis of high-quality data;
- Flexibility and adaptability to emerging needs and challenges;
- Inclusivity and community engagement;
- Continuous capacity-building for all stakeholders; and
- Continuous monitoring and evaluation, and impact measurement of the established processes.

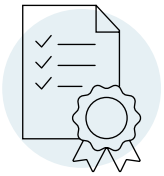
4. DETAILED GUIDANCE FOR TOOLS APPLICATION

4.1 STEP-BY-STEP METHODOLOGY AND CONSULTATION PROCESS

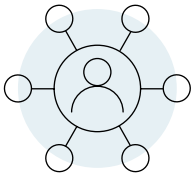
Step	Purpose	Outputs
1. Desktop review	Systematically revise existing priority-setting and tasking processes and analyse other relevant information. Establish a working team from relevant National Mine Action Authority (NMAA) departments and mine action centres, complemented by consultation meetings with stakeholders	▾ Multi-stakeholder register ▾ List of existing values, criteria, indicators, and weights ▾ Information management systems and data collection requirements
2. Workshop I – Application of Tool I	Assess the national context in terms of environmental and climate resilience to identify key dimensions and variables determining the initial set of values, criteria, and possible indicators. The workshop can be replaced by an internal consultation process with stakeholders, including relevant governmental entities, national and international expert organizations in the field of environment and climate resilience, and partners assisting in the application of the methodology	▾ Completed Tool I and appendix checklists ▾ Updated multi-stakeholder register
3. Preparation for Workshop II	NMAA-led team selects initial climate resilience criteria and indicators based on the desktop review and Workshop I findings. This preparatory work will already make use of Tool II. It should be complemented with consultation meetings as required with the stakeholders involved in the process	▾ List of preselected criteria and indicators from Tool II
4. Workshop II – Application of Tool II	Finalize the selection of climate resilience criteria and indicators with balanced inclusion of new and existing ones. Identify data sources and collection needs	▾ Agreed list of criteria and indicators with data sources and collection requirements
5. Preparation for Workshop III	Revise the agreed list and create an initial proposal for their respective and relative weight. Ensure alignment with existing processes and consider socio-economic impacts, risks, policies, and resources	▾ List of criteria and indicators with proposed weights
6. Workshop III – Weights and integration	Finalize the methodology with agreed criteria, indicators, and weights. Confirm data sources and collection requirements	▾ Final list of criteria, indicators, and weights with data sources and collection needs

4.2 TOOL I

Tool I is a checklist of requirements to assess the level of integration of climate resilience considerations within existing national mine action priority-setting and tasking processes. The checklist is divided into different themes. For each theme a list of questions is given, for which the NMAA/national mine action centre (NMAC) and mine action organizations should answer with 'no', 'yes', 'not applicable'. There is a field for comments which can be used for annotations (e.g. indicate the source of related information or reference). The following themes are covered:

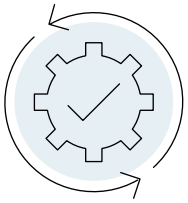


National and international plans, policies and standards



Multi-stakeholder approach

Environmental, climate change, and resilience trends



Task planning

The checklist is to be used primarily by the NMAA/NMAC as the lead coordinator of the application of the methodology. However, the checklist should be shared with mine action stakeholders for their input. Information gained from the checklist should be shared among the NMAA/NMAC and the relevant mine action stakeholders.

The collection of such information supports the understanding of the national context regarding climate resilience, leading to decisions regarding priority-setting. An example concerning national and international plans, policies, and standards can be drawn from the pilots in Iraq and Vietnam. Iraq is State Party to the United Nations Framework Convention on Climate Change (UNFCCC), a signatory to the Paris Agreement and has ratified the Kyoto Protocol. In 2021, Iraq revised its Nationally Determined Contribution (NDC) under the Paris Agreement which serves as the country's guiding policy framework to address the effects of climate change and reduce its carbon emissions.[18] The areas for adaptation and resilience according to the NDC are agriculture, health, water, land use/land use change and forestry, and tourism.[19] This information helps to scope the identification of climate resilience considerations according to the NDC thematic commitments, to include in the existing priority-setting and tasking processes.

Similarly, Vietnam is State Party to the UNFCCC and a signatory to the Kyoto Protocol and Paris Agreement. In 2022, it published its NDC[20] under the Paris Agreement. Focus through the NDC is given to energy, agriculture, land use/land use change and forestry, waste, and industrial processes.[21] In addition, in July 2022, the government issued a National Climate Change Strategy to 2050 to tackle climate change impacts and reduce the country`s greenhouse gas emissions. The Vietnamese Mine Action Center (VNMAC) intends to include climate change and resilience considerations in its next 5-year plan (2026–2030). Including climate resilience considerations in existing priority-setting and tasking processes is timely and in response to national policies in Vietnam.

The checklist is comprehensive, outlining several processes and methods. It is not expected that a mine action programme has all the outlined processes and methods in place or is in possession of all information. Therefore, the checklist also facilitates the identification of potential external stakeholders that can support the mine action programme in incorporating climate resilience considerations into the existing priority-setting and tasking processes.

4.3 APPENDIX TO TOOL I

The Appendix to Tool I provides a list of specific criteria and respective indicators to identify the mine action programme's capacity enhancement needs regarding environmental protection and climate change adaptation. It is in the form of a priority-setting criterion, with specific measurable indicators and is based on the premise that capacity enhancement of mine action staff increases the effective gathering and analysis of climate resilience-related data.

NMAAs/NMACs and mine action organizations tend to have low levels of environmental protection and climate change literacy which can hinder the effective integration of climate resilience considerations in priority-setting and tasking processes.[22] This was further confirmed by engaging with mine action stakeholders in piloting this methodology in Vietnam and Iraq, as well as by engaging in discussions to pilot the methodology in Angola. For example, Quang Tri Mine Action Center (QTMAC) advised that due to the limitations of environmental and climate change literacy of mine action staff and available capacities, the inclusion of climate resilience indicators would be preferable at an informal level. In Angola, the limited understanding of environmental and climate resilience subjects was one of the reasons the pilot was not carried out in the end.

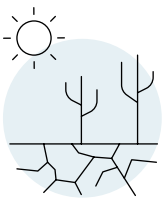
Acknowledging such limitations and establishing partnerships with international, national, or local expert organizations working in the field of environment or climate resilience as early as possible, proved essential to complement NMAA/NMAC expertise when environment or climate resilience literacy was absent or limited. During the Iraq pilot, MILE Organization for Environmental Protection, a national expert organization, provided support to the Directorate for Mine Action (DMA) as part of its long-standing cooperation with the DMA. In Vietnam, external expertise was provided by the World Wildlife Fund (WWF) and United Nations Development Programme (UNDP). Norwegian People's Aid (NPA) support to VNMAC, QTMAC, and Provincial Mine Action Database and Coordination Unit in Quang Binh (DBCU-QB) provided an example of a mine action organization with greater expertise in environmental aspects within mine action supporting NMAAs/NMACs.

While part of Tool I, this Appendix can also be used as a standalone tool throughout the application of the methodology, as there may be a need for capacity enhancement following effective data gathering and analysis of environmental, climate change, and resilience data.

4.4 TOOL II AND APPENDIX

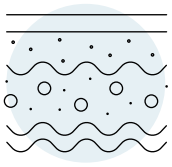
Tool II provides a generic list of climate resilience criteria and indicators that can be integrated in existing priority-setting and tasking processes for mine action, in determining which suspected hazardous area (SHA)/ confirmed hazardous area (CHA) should be prioritized. These can be individually chosen from the list and tailored to integrate within an existing national mine action priority-setting and tasking process, according to the national context, available resources, and data. Tool II is structured according to themes with values, their criteria, and corresponding indicators, measuring type, the level of prioritization (NMAA/NMAC or mine action organization), and the rationale supporting the inclusion of each criterion regarding climate resilience. The following themes are covered in the list:

Areas subject to extreme weather events/natural disasters



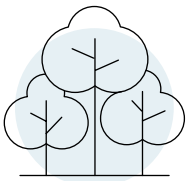
Desertification and land degradation

Community climate resilience projects

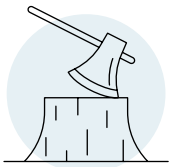


Quality of land/soil

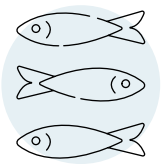
Agricultural productivity



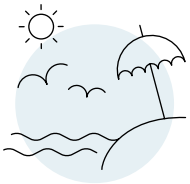
Forestry productivity



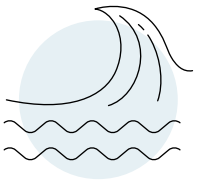
Deforestation



Fishery productivity



Coastal zones



Sea level rise

Water sources

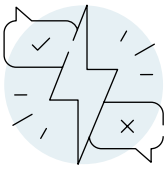
Biodiversity/
ecosystem preservation

Climate-related migration

Health and sanitation

Renewable energy
generation infrastructure

Critical infrastructure
protection essential for
climate resilience



Disputes over natural resources

This list is intended to be used as a catalogue from which values, criteria, and indicators could be selected based on specific requirements, and further tailored to the specific context. The climate resilience-related indicators outlined in Tool II are SMART (specific, measurable, achievable, relevant, time-bound) and gender, age, and disability sensitive (collecting sex, age, and disability disaggregated data). Therefore, once identified and integrated into the existing priority-setting and tasking procedures, these indicators can be used to measure the impact of mine action activities in creating climate resilience. However, the indicators should first be converted into assessment questions to gather information in support of the priority-setting process followed by monitoring and evaluation.

The information required to measure the indicators can be gathered through a multi-stakeholder approach (e.g. subject matter expert institutions, ministries, authorities), open source (availability depending on country or territory) and through existing data collection activities such as non-technical survey (NTS), technical survey (TS) and explosive ordnance risk education. For example, the indicators can be included in existing Information Management System for Mine Action forms, such as NTS or hazard forms, as envisioned in the case of Iraq and Vietnam.

While primarily focused in assisting NMAAs/NMACs, Tool II can also be used by mine action organizations to identify relevant criteria and indicators for operator-level priority-setting and environment policy monitoring and evaluation. During a consultation meeting in Vietnam, NPA Vietnam suggested that some of the indicators listed in Tool II could be included in their existing data collection activities, such as the NPA environmental profile survey, task risk assessment form, and NTS forms.

In Vietnam, Tool II was subject to numerous multi-stakeholder consultation meetings, primarily at national level with VNMAC and regional level with QTMAC and DBCU-QB. These included international mine action organizations (NPA and Mines Advisory Group), and thematic organizations like WWF and UNDP. A specific feature emerging from these consultations with regards Tool II was the suggestion that it can be used to select criteria and indicators to prioritize SHAs independently from CHAs. This reflects a specific context where the tasking authority for NTS/TS of SHAs is different from the tasking authority for clearance of CHAs. In such cases, the generic list comprised in Tool II can be used separately to identify two different sets of criteria and indicators.

The Appendix to Tool II provides an additional list of specific indicators to better understand the national environmental, climate change, and resilience trends in support of the priority-setting and tasking processes in mine action. Similarly to Tool II, the Appendix is structured according to themes with criteria and corresponding indicators, measuring type, source, and rationale. The Appendix includes two additional themes, namely poverty alleviation and environmental and climate change literacy. It can be applied after Tool II by identifying additional specific indicators related to the selected climate resilience criteria, and indicators in Tool II based on the national context, resources, and data availability.

4.5 EVALUATION AND CONTINUOUS IMPROVEMENT

Monitoring and evaluation are an important component in ensuring adaptation and flexibility of a national priority-setting and tasking process. Collecting data on the progress and outcomes of operations allows decision-makers to assess the efficiency and effectiveness of the allocated resources. This information helps to adjust and make improvements to the priority-setting process.[23] Thus, the cycle proposed can be closed, with new assessments of the existing priority-setting and tasking processes taking place at regular intervals.

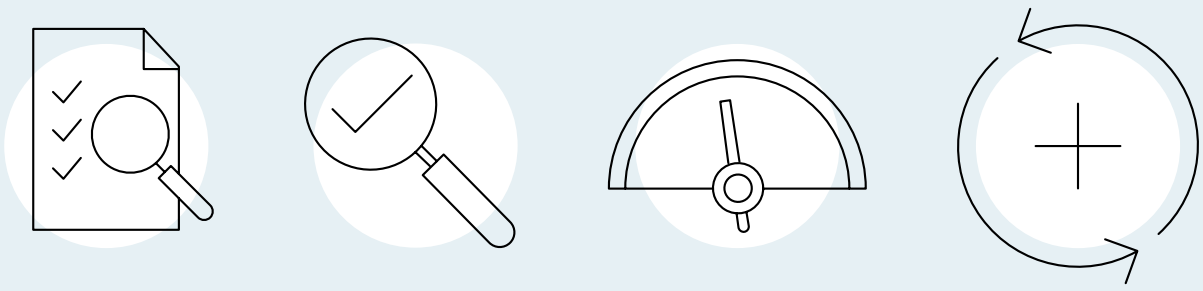
IMAS further provide guidance on monitoring and evaluation:

- IMAS 07.13 sets the minimum requirement for monitoring environment and climate considerations of mine action activities, such as complying with IMAS 07.40 'Monitoring of mine action organizations'[24] or addressing environmental nonconformities in accordance with IMAS 07.12 'Quality management in mine action',[25] and with IMAS 07.40. It also sets the requirement to include any impact assessments or survey post land release (IMAS 07.12 refers to post clearance impact assessments) to assess environmental aspects by examining the efficiency of any established environmental remediation measures and potential unintended repercussions or maladaptation.
- IMAS 14.10 'Guide for the evaluation of mine action interventions',[26] also refers to the outcome and impact evaluation of mine action activities by incorporating socio-economic, political, and cultural factors. For example, mine action intervention outputs can be assessed to identify how beneficiaries are using the outputs for socio-economic benefit in terms of the use of cleared land for growing crops.

As an example, in Vietnam, QTMAC revises the priority-setting and tasking processes every six to twelve months, considering changing dynamics by updating the list of district priorities. In Iraq, the DMA has assumed a progressive approach to the integration of climate resilience-related indicators in priority-setting processes, starting with those for which data collection is currently manageable based on national capacities, resources, and literacy. Through monitoring and evaluation and capacity enhancements of mine action programme staff, the DMA plans to further consider additional climate resilience indicators in the future.

ANNEX A

TOOL I & APPENDIX, TOOL II & APPENDIX



TOOL I

Checklist for priority-setting to include climate resilience considerations

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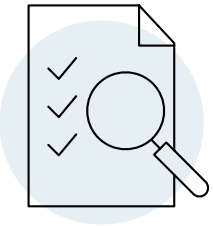

Theme	Yes	No	N/A	Comments/Source
National and international plans, policies and standards				
Do national environmental protection, climate change adaptation and resilience strategies and/or action plans or legislation exist?	☐	☐	☐	
Does a national interministerial coordination mechanism for environmental protection, climate change adaptation and resilience exist?	☐	☐	☐	
Does the NMAA have a climate change adaptation and environmental policy for mine action based on national, regional and/or local climate action, resilience, and environmental legislation?	☐	☐	☐	
Do the operators have a climate change adaptation and environmental policy?	☐	☐	☐	
Do the operators have a climate change adaptation and environmental policy adjusted to the NMAA policy?	☐	☐	☐	
Has the NMAA established a national mine action standard on environmental management and climate change based on IMAS 07.13?	☐	☐	☐	
Are all legal climate change adaptation and resilience, and environmental protection, requirements outlined in relevant national policies fully reflected in operators' relevant policies and SOPs?	☐	☐	☐	
Has a risk management approach specific to environmental protection and climate change adaptation and resilience been established? Or, does the existing risk register include environmental protection, climate change adaptation and resilience considerations?	☐	☐	☐	
Have any transboundary environmental protection, climate change adaptation, and resilience issues been considered and addressed by the NMAA/NMAC, for example, if close to international or regional borders?	☐	☐	☐	
Multi-stakeholder approach				
Have the government ministries that focus on environmental protection, climate change adaptation, and resilience been identified?	☐	☐	☐	
Have consultations with government ministries to confirm the requirements or expectations on national environmental protection, climate change adaptation, and resilience considerations taken place, to be included in the mine action programmes' priority-setting and tasking processes?	☐	☐	☐	
Have consultations with relevant local stakeholders (government authorities, marginalized groups, and civil society organizations) taken place on their priorities, needs, and expectations regarding environmental protection, climate change adaptation, and resilience considerations, to be included in the mine action programmes' priority-setting and tasking processes?	☐	☐	☐	
Have consultations with the mine action donor community taken place on their priorities, needs, and expectations regarding environmental protection, climate change adaptation, and resilience considerations, to be included in the mine action programmes' priority-setting and tasking processes?	☐	☐	☐	

 **Environmental, climate change and resilience trends**				
Are the existing environmental protection, climate change adaptation, and resilience conditions at national, regional, and/or local level known and understood?	☐	☐	☐	
Are there any existing environmental protection, climate change adaptation, and resilience assessment reports, studies, or surveys (mine action or non-mine action sectors) available in support of informed decision-making in priority-setting?	☐	☐	☐	
Are additional open data sources through consultations outside the mine action programme needed to establish an environmental, climate change, and resilience baseline?	☐	☐	☐	
Are environmental protection, climate change adaptation, and resilience strategies at national, regional, and/or local level in place and being considered for mine action priority-setting?	☐	☐	☐	
 **Task planning**				
Does the national government require that any environmental impact assessments be undertaken?	☐	☐	☐	
Are any climate risk management and community resilience assessments conducted (either by mine action or non-mine action stakeholders) at regional, local, or task level?	☐	☐	☐	
Are changes in land use patterns known and how they may affect prioritization of planned and future mine action tasks?	☐	☐	☐	
Are changes in weather patterns known and how they may affect local communities?	☐	☐	☐	
Are changes in weather patterns known and how they may affect prioritization of planned and future mine action tasks?	☐	☐	☐	
Has the local community been consulted in an inclusive manner on observed changes and impacts from weather, seasonal patterns, and extreme events (if no external or open-source data is available)?	☐	☐	☐	
Have seasonal changes (and their potential impact on the operations calendar) been considered when prioritizing tasks?	☐	☐	☐	
Have early warning systems been considered during the tasking process?	☐	☐	☐	
Are explosive ordnance hazardous areas in high climate-related-risk areas prioritized? (e.g. involving tasks that are affected by extreme weather events such as floods or wildfires, thus enhancing communities' safety)	☐	☐	☐	
When setting priorities, have potentially higher operational costs and time needed for using appropriate methods that support environmental protection and climate resilience been considered?	☐	☐	☐	
Are the measures in place to operate in national environmentally protected areas according to local needs and national requirements?	☐	☐	☐	
Have disputes over natural resources been considered when setting priorities?	☐	☐	☐	
Has land use (post land release), linked to the resilience of communities to climate change, been identified before setting priorities? These can be climate resilience projects such as climate smart agriculture, access to water sources, critical infrastructure development, recreational activities, reforestation, etc.	☐	☐	☐	
Are post clearance impact assessments carried out to assess sustainable development outcomes? Is there any other government ministry or authority that conducts general post impact assessments?	☐	☐	☐	
Have criteria and their respective indicators associated with climate resilience been considered and added to the existing priority-setting and tasking processes? Please see Tool II and its Appendix	☐	☐	☐	
Have non-technical survey teams included climate resilience considerations when engaging with communities (if no external or open-source data is available)?	☐	☐	☐	

Are climate resilience criteria and their respective indicators used to regularly analyse the data for informed decision-making in priority setting?	☐	☐	☐	
Has any data from priority assessments in relation to climate resilience been integrated into IMSMA?	☐	☐	☐	
Have members of mine action staff been trained in environmental protection, climate change adaptation and resilience aspects to effectively gather and analyse information relevant to the priority-setting process?	☐	☐	☐	
Have operators shared information on climate resilience with the NMAA/NMAC and vice versa in support of the priority-setting process?	☐	☐	☐	

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Appendix to Tool I

Environmental and climate change literacy – specific indicators

Mine action-related values	Criteria	Indicators (can be converted into assessment questions)	Measuring type	Level of prioritization*		Comments/Source	Rationale
				Big P	Small p		
Preventing pain/alleviating human suffering Do no harm	**Mine action staff are trained in environmental protection and climate adaptation practices**	Number or percentage of mine action staff that has been trained in environmental protection and climate adaptation practices	Number or percentage disaggregated by sex	X	X		**Capacity enhancement of mine action staff increases the effective gathering and analysis of climate resilience-related data**
		Number or percentage of mine action staff that has passed a training test in environmental protection and climate adaptation practices	Number or percentage disaggregated by sex	X	X		
		Number or percentage of mine action staff that has passed a retention test (post 1 year) in environmental protection and climate adaptation practices	Number or percentage disaggregated by sex	X	X		
		Number or percentage of tasks where environmental protection and climate adaptation practices have been integrated in planning and implementation of operations	Number or percentage and m2 (or hectare)	X	X		
		Increased costs that are associated with training mine action staff in environmental protection and climate adaptation practices	Cost per mine action staff member	X	X		
		Number of additional days that are needed for training mine action staff in environmental protection and climate adaptation practices	Number of additional days needed per mine action staff member	X	X		

* Big P is established at the governance level of a national mine action programme by stakeholders such as NMAA/NMAC. Small p is typically managed at the implementation level of a national mine action programme by stakeholders such as mine action organizations, local authorities, and community representatives. For more information, please refer to Section 3 of the Methodology Guide on macro-level (big P) and micro-level (small p) prioritization.

Tool II

Priority-setting values, criteria, and indicators for climate resilience in land release

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Mine action-related values	Criteria	Indicators (can be converted into assessment questions)	Measuring type	Level of prioritization* Big P	Level of prioritization* Small p	Source (IMSMA, open source, community liaison, government agencies, NGOs)	Rationale
Areas subject to extreme weather events/natural disasters							
Preventing pain/alleviating human suffering Human dignity and alleviating destitution Material prosperity	**Areas subject to extreme weather events/natural disasters are addressed (floods, landslides, cyclones, heatwaves, droughts, sandstorms, snowstorms etc.)**	Number or percentage of SHAs/CHAs subject to extreme weather events (e.g. floods, landslides, cyclones, heatwaves, droughts, sandstorms, snowstorms etc.) according to geographical location	Number or percentage and m2 (or hectare)	X			**Climate change is expected to increase hydrological, meteorological, climatological, and biological disasters, which have a major negative effect on poverty, food security, and economic growth, affecting health, human rights, and security, education, governance, and the environment. Extreme weather events influence planning and implementing land release activities accordingly**
		Number or percentage of population living in proximity to SHAs/CHAs subject to extreme weather events (e.g. floods, landslides, cyclones, heatwaves, droughts, sandstorms, snowstorms etc.) according to geographical location	Number or percentage disaggregated by sex, age and disability (SADDD)	X			
		Average number of days that were lost in land release operations due to extreme weather events	Number		X		
		Number or percentage of SHAs/CHAs that will be subject to planning and implementation efforts, using appropriate methods due to extreme weather events	Number or percentage and m2 (or hectare)		X		
		Increased costs that will be associated with land release planning and implementation efforts, using appropriate methods due to extreme weather events	Increased cost per m2		X		
	Extreme weather event protection measurements are improved (e.g. storm surge infrastructure, coastal protection infrastructure, river flood mitigation infrastructure, early warning systems)	Number or percentage of SHAs/CHAs in proximity to potential/planned installation of extreme weather event protection measurements according to geographical location within the next 3 years	Number or percentage and m2 (or hectare) disaggregated by type of protection measurement	X			**Linked with food security, environment and climate change adaptation, governance and human rights, disaster risk reduction, socio-economic development, and regional cooperation**
		Number or percentage of estimated direct beneficiaries that will be subject to protection by potential/planned extreme weather event protection measurements according to geographical location within the next 3 years	Number disaggregated by SADDD	X			
Desertification and land degradation							
Preventing pain/alleviating human suffering Human dignity and alleviating destitution Material prosperity	**Areas prone to or currently undergoing desertification are addressed**	Number or percentage of SHAs/CHAs in regions identified as high-risk for desertification	Number or percentage and area in hectares	X			**Climate change is expected to increase hydrological, meteorological, climatological, and biological disasters, which have a major negative effect on poverty, food security, and economic growth, affecting health, human rights, and security, education, governance, and the environment**
		Area of land rehabilitated post-clearance for sustainable agricultural use	Number or percentage and area in hectares	X			

* Big P is established at the governance level of a national mine action programme by stakeholders such as NMAA/NMAC. Small p is typically managed at the implementation level of a national mine action programme by stakeholders such as mine action organizations, local authorities, and community representatives. For more information, please refer to Section 3 of the Methodology Guide on macro-level (big P) and micro-level (small p) prioritization.

Community climate resilience projects							
Material prosperity Human dignity and alleviating destitution	**Potential land use for community climate resilience projects (post land release) is addressed (e.g. climate resilient and/or energy efficient housing, farming practices etc.)**	Number or percentage of SHAs/CHAs that will be used for community climate resilience projects according to geographical location within the next 3 years	Number or percentage and m2 (or hectare)	X			**Links to poverty, food security, socio-economic development, environmental mitigation and climate change adaptation, and regional cooperation**
		Number of liaison activities that have taken place between mine action stakeholders, development agencies, local communities and authorities to identify future community climate resilience projects post land release, according to geographical location within the next 3 years	Number	X			
		Number or percentage of estimated direct beneficiaries that will be subject to community climate resilience projects post land release according to geographical location within the next 3 years	Number or percentage disaggregated by SADDD	X			
		Land rights are clear (no recorded land disputes at the time of assessment)	Yes; No	X	X		
		Target beneficiaries are clearly identified	Yes; No	X	X		
		Target beneficiaries will need assistance (socio-economic status, landless, etc.)	Yes; No; Proportion	X	X		
		A development agency will assist beneficiaries in making sustainable use of the land	Yes; No	X	X		
Quality of land/soil							
Do no harm Human dignity and alleviating destitution Preventing pain/alleviating human suffering	**Quality of land/soil is protected during land release operations**	Number or percentage of SHAs/CHAs that will be subject to land release planning and implementation efforts in order to use appropriate methods to protect soil and avoid soil degradation, erosion, and release of chemicals to soil and water	Number or percentage and m2 (or hectare)		X		**An impediment to sustainable development in general and to sustainable agriculture in particular. It can be a major cause of poverty and further environmental damage due to overuse of national resources. Thus linked to food security, health, poverty, and human development**
		Increased costs that will be associated with land release planning and implementation efforts in order to use appropriate methods to protect the quality of land/soil	Increased cost per m2		X		
		Number of additional days that will be needed for land release planning and implementation efforts to use appropriate methods to protect the quality of land/soil	Total number of additional days		X		
Agricultural productivity							
Material prosperity Human dignity and alleviating destitution	**Agricultural productivity is improved**	Number or percentage of SHAs/CHAs classified as agricultural land according to geographical location	Number or percentage and m2 (or hectare)	X			**Links to food security, climate change, economic development, education, and poverty reduction**
		Number or percentage of estimated direct beneficiaries once agricultural land is released according to geographical location	Number or percentage disaggregated by SADDD	X			
		Number or percentage of SHAs/CHAs that will be used for climate smart agriculture within the next 3 years according to geographical location once land is released	Number or percentage and m2 (or hectare)	X			
		Number or percentage of estimated beneficiaries once land is released for climate smart agriculture within the next 3 years according to geographical location once land is released	Number or percentage disaggregated by SADDD	X			

Forestry productivity							
Material prosperity Human dignity and alleviating destitution	**Forestry management is improved**	Number or percentage of SHAs/CHAs classified as land for forestry according to geographical location	Number or percentage and m2 (or hectare)	X			**Strong link to poverty reduction and economic development, land degradation, and environment. Links to gender, human rights, job opportunities, food security as well as governance and market development. Vulnerable to climate change**
		Number or percentage of estimated direct beneficiaries once land for forestry is released according to geographical location	Number or percentage disaggregated by SADDD	X			
Deforestation							
Do no harm Human dignity and alleviating destitution	**Deforestation mitigation measures are addressed during land release operations**	Number or percentage of SHAs/CHAs that will be subject to land release planning and implementation efforts in order to use appropriate methods to contribute to deforestation mitigation	Number or percentage and m2 (or hectare)		X		**Linked to climate change mitigation (and adaptation), poverty reduction, gender, food security, conflict and security, human rights, health, and education**
		Increased costs that will be associated to land release planning and implementation efforts to use appropriate methods to contribute to deforestation mitigation	Increased cost per m2		X		
		Number of additional days that will be needed for land release planning and implementation efforts to use appropriate methods to contribute to deforestation mitigation	Total number of additional days		X		
Fishery productivity							
Material prosperity Human dignity and alleviating destitution	**Fishery productivity is improved**	Number or percentage of marine SHAs/CHAs according to geographical location	Number or percentage and m2 (or hectare)	X			**Strong link to poverty reduction and economic development, land degradation, and environment. Links to gender, human rights, job opportunities, food security as well as governance and market development. Vulnerable to climate change**
		Number or percentage of estimated direct beneficiaries once marine SHAs/CHAs are released according to geographical location	Number or percentage and m2 (or hectare)	X			
	Nationally protected marine areas are addressed	Number or percentage of SHAs/CHAs in nationally protected marine areas according to geographical location	Number or percentage and m2 (or hectare)	X			
		Land release activities in nationally protected marine areas will be subject to special requirements under national legislation	Yes; No	X	X		
		Number or percentage of marine SHAs/CHAs that will be subject to planning and implementation efforts in order to use appropriate methods to operate in nationally protected marine areas	Number or percentage and m2 (or hectare)		X		
		Increased costs that will be associated with planning and implementation efforts in order to use appropriate methods to operate in nationally protected marine areas	Increased cost per m2		X		
		Number of additional days that will be needed for planning and implementation efforts in order to use appropriate methods to operate in nationally protected marine areas	Total number of additional days		X		

Coastal zones

Preventing pain/alleviating human suffering Material prosperity Human dignity and alleviating destitution	**Land release of coastal areas is addressed**	Number or percentage of SHAs/CHAs in coastal areas according to geographical location	Number or percentage and m2 (or hectare)	X			**Linked with food security (e.g. fisheries), environment and climate change, governance and human rights, disaster risk reduction, and regional cooperation**
		Number or percentage of estimated direct beneficiaries once coastal areas are released according to geographical location	Number or percentage disaggregated by SADDD	X			
	Land release of natural disaster-prone coastal areas is addressed	Number or percentage of SHAs/CHAs in natural disaster-prone coastal areas according to geographical location	Number or percentage and m2 (or hectare)	X			
		Number or percentage of estimated direct beneficiaries once natural disaster-prone coastal areas are released according to geographical location	Number or percentage disaggregated by SADDD	X			
	Nationally protected coastal areas are addressed	Number or percentage of SHAs/CHAs in nationally protected coastal areas according to geographical location	Number or percentage and m2 (or hectare)	X			
		Land release activities in nationally protected coastal areas are subject to special requirements under national legislation	Yes; No	X	X		
		Number or percentage of SHAs/CHAs that will be subject to land release planning and implementation efforts in order to use appropriate methods in nationally protected coastal areas	Number or percentage and m2 (or hectare)		X		
		Increased costs that will be associated with land release planning and implementation efforts in order to use appropriate methods in nationally protected coastal areas	Increased cost per m2		X		
		Number of additional days that will be needed for land release planning and implementation efforts in order to use appropriate methods in nationally protected coastal areas	Total number of additional days		X		

Sea level rise

Preventing pain/alleviating human suffering Human dignity and alleviating destitution Material prosperity	**Land release of hazardous areas due to sea level rise is addressed**	Number or percentage of SHAs/CHAs affected by sea level rise according to geographical location within the next 3 years	Number or percentage and m2 (or hectare)	X			**Linked with food security, environment and climate change, governance and human rights, disaster risk reduction, socio-economic development, and migration**
		Number or percentage of estimated direct beneficiaries in proximity to SHAs/CHAs affected by sea level rise according to geographical location within the next 3 years	Number disaggregated by SADDD	X			

Water sources

Human dignity and alleviating destitution Preventing pain/alleviating human suffering Material prosperity Do no harm	**Water availability is improved**	Number or percentage of SHAs/CHAs in proximity to water sources (rivers, lakes, reservoirs, dams, irrigation systems) according to geographical location	Number or percentage and m2 (or hectare)	X			**Strongly linked to human health, maternal and child mortality, other gender issues and human rights, primary education, poverty reduction, socio-economic development, climate change, security, and natural disasters**
		Number of new/potential water sources	Number	X			
		Number of water sources in SHAs/CHAs	Number	X			
		Number of estimated direct beneficiaries to safely access water sources once SHAs/CHAs are released according to geographical location	Number disaggregated by SADDD	X			

Biodiversity/ecosystem preservation							
Do no harm Human dignity and alleviating destitution	**Biodiversity hotspots are addressed and preserved**	Number or percentage of SHAs/CHAs in biodiversity hotspots according to geographical location	Number or percentage and m2 (or hectare)	X			**Sustaining ecosystems and biodiversity is crucial for human well-being. Links to governance, resilience to climate change, poverty reduction, health issues, and economic development**
		Number or percentage of estimated beneficiaries once biodiversity hotspots are released according to geographical location	Number or percentage disaggregated by SADDD	X			
	Nationally protected biodiversity hotspots are addressed and preserved during land release operations	Number or percentage of SHAs/CHAs in nationally protected biodiversity hotspots according to geographical location	Number or percentage and m2 (or hectare)	X			
		Land release activities in nationally protected biodiversity hotspots subject to special requirements under national legislation	Yes; No	X	X		
		Number or percentage of SHAs/CHAs that will be subject to land release planning and implementation efforts in order to use appropriate methods to further protect nationally protected biodiversity hotspots	Number or percentage and m2 (or hectare)		X		
		Number of additional days needed for land release planning and implementation efforts in order to use appropriate methods to further protect nationally protected biodiversity hotspots	Number		X		
		Increased costs that will be associated with land release planning and implementation efforts in order to use appropriate methods to further protect nationally protected biodiversity hotspots	Increased cost per m2		X		
		Number of estimated beneficiaries to safely access nationally protected biodiversity hotspots once released	Number disaggregated by SADDD	X			
Climate-related migration							
Restoring what people have lost through no fault of their own Human dignity and alleviating destitution	**Migration due to climate change is addressed**	Number or percentage of SHAs/CHAs that will be potentially subject to resettlement for climate-induced migrants according to geographical location within the next 3 years	Number or percentage and m2 (or hectare)	X			**Links to governance and human rights, conflict, climate change, environmental degradation, poverty, socio-economic development, and urban planning**
		Number of estimated beneficiaries that potentially resettle in SHAs/CHAs according to geographical location in the next 3 years once land is released	Number disaggregated by SADDD	X			
Health and sanitation							
Human dignity and alleviating destitution Material prosperity Preventing pain/alleviating human suffering	**Health conditions are improved**	Number or percentage of SHAs/CHAs in proximity to healthcare facilities according to geographical location	Number or percentage and m2 (or hectare)	X			**Links to access health facilities and functioning of health systems, poverty, education, environmental issues (including water and sanitation), socio-economic development, and nutrition. Also relevant to conflicts and security, and disaster risks (including climate change)**
		Number of direct estimated beneficiaries that will safely access healthcare facilities once area is released according to geographical location	Number disaggregated by SADDD	X			
		Number or percentage of cases of climate-related diseases (airborne diseases, water-related diseases, climate-related vector-borne diseases) according to geographical location	Number or percentage disaggregated by type of disease and SADDD	X			

Human dignity and alleviating destitution Material prosperity Preventing pain/alleviating human suffering	**Sanitation systems are improved**	Number or percentage of SHAs/CHAs hindering improvements in sanitation systems according to geographical location	Number or percentage and m2 (or hectare)	X			**Sanitation systems refer to the management of human waste and promote hygiene, therefore preventing disease and protecting the environment** **Strongly linked to human health, primary education, environmental sustainability, human rights and gender issues, infrastructure, poverty reduction, also to peoples' vulnerability and ability to adapt to climate change**
		Number of direct beneficiaries that will have access to improved sanitation systems once areas are released according to geographical location	Number or percentage disaggregated by SADDD	X			
Renewable energy generation infrastructure							
Human dignity and alleviating destitution Material prosperity	**Access to renewable energy sources is improved**	Number or percentage of SHAs/CHAs hindering access to potential construction of renewable energy sources within the next 3 years according to geographical location	Number or percentage and m2 (or hectare)	X			**Strong links to economic development, poverty reduction, climate change mitigation, and infrastructure**
		Number of estimated direct beneficiaries that will use potential renewable energy sources within the next 3 years according to geographical location once land is released	Number disaggregated by SADDD	X			
Critical infrastructure protection essential for climate resilience							
Human dignity and alleviating destitution Preventing pain/alleviating human suffering Material prosperity	**Areas affecting critical infrastructure (e.g. roads, schools, hospitals) essential for climate resilience are addressed**	Number or percentage of SHAs/CHAs near critical infrastructure (e.g. roads, schools, hospitals)	Number	X			**Links to functioning of health systems, poverty, education, environmental issues (including water and sanitation), socio-economic development, and nutrition. Also relevant to conflicts and security**
		Number of infrastructure projects delayed or impacted by SHAs/CHAs	Number	X			
Dispute over natural resources							
Do no harm Human dignity and alleviating destitution Material prosperity Preventing pain/alleviating human suffering	**Disputes related to land and natural resources are addressed**	Number or percentage of SHAs/CHAs subject to natural resources-related disputes (recorded disputes at the time of assessment) according to geographical location	Number or percentage and m2 (or hectare)	X			**Links to poverty, human rights and gender, education, governance, natural resources, use of policy instruments, socio-economic development, environment, and climate change**
		Number or percentage of SHAs/CHAs for which rights/ownership are clear (no recorded disputes at the time of assessment) according to geographical location	Number or percentage and m2 (or hectare)	X			

Appendix to Tool II[27, 28]

Understanding environmental, climate change and resilience trends – specific indicators

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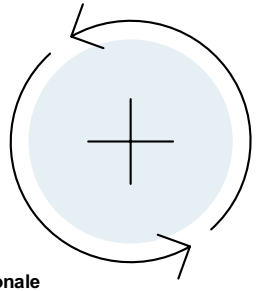

Criteria	**Indicators** (can be converted into assessment questions)	**Measuring type**	**Source** (IMSMA, open source, community liaison, government agencies, NGOs)	**Rationale**
Poverty alleviation				
Progress towards poverty alleviation	Proportion of the population living below the international poverty line by sex, age, employment status, and geographical location (urban/rural)	Number and proportion disaggregated by sex, age, employment status, and geographical location (urban/rural)		**Poverty, inequalities, and unemployment obstruct human development, worsen human security, and limit climate change adaptation capacity, thus obstructing sustainable development**
	Gini coefficient (income) at national level, or provincial level if available	Number		
	Employment ratio according to sector	Number and proportion disaggregated by sex		
Environmental and climate change literacy				
Education curriculum includes environmental protection, climate change adaptation, and disaster risk reduction practices	Ratio of girls to boys in education (primary, secondary, tertiary)	Number and proportion disaggregated by sex		**Improved environmental, climate change/resilience and disaster risk reduction education will increase beneficiaries' knowledge on health, nutrition, sanitation, disease prevention, disaster preparedness, sustainable agriculture and forestry, and regional cooperation**
	Proportion of teachers trained in environmental protection, climate change/resilience adaptation, and disaster risk reduction education	Number and proportion disaggregated by sex		
	School curriculum includes environmental protection, climate change/resilience adaptation, and disaster risk reduction issues	Yes; No		
	Number of households reached through environmental protection, climate change/resilience adaptation, and disaster risk reduction outreach	Number		
Community awareness and participation in climate adaptation activities is improved	Number or percentage of people participating in climate adaptation activities/intervention according to geographical location	Number or percentage disaggregated by sex, age and disability (SADDD)		**Gathering data on community climate adaptation and resilience strategies helps to better understand how communities are prepared to cope with climate change events**
	Percentage of community utilizing climate adaptation and resilience strategies according to geographical location	Number or percentage disaggregated by SADDD		

Areas subject to extreme weather events/natural disasters				
Areas subject to extreme weather events/natural disasters are addressed (floods, landslides, cyclones, heatwaves) during land release operations	Direct economic loss or destruction of productive assets attributed to natural disasters according to sectors (e.g. agriculture, forestry, etc.)	Number and proportion		**Climate change is expected to increase hydrological, meteorological, climatological, and biological disasters, which have a major negative effect on poverty, food security, and economic growth, affecting health, human rights and security, education, governance, and the environment. Extreme weather events influence planning and implementing land release activities accordingly**
	Number of people whose destroyed homes were attributed to natural disasters	Number disaggregated by SADDD		
	Number of incidents of damage to critical infrastructure (e.g. water sources, educational and healthcare facilities, etc.) attributed to natural disasters	Number		
	Proportion of local governments that adopt and implement local natural disaster risk reduction strategies in line with national natural disaster risk reduction strategies	Number and proportion		
Occurrence of extreme weather events is considered	Total annual number of days affected by extreme heat divided by geographical location and months	Number		
	Total annual number of days affected by extreme rainfall divided by geographical location and months	Number		
	Total annual number of days affected by extreme snowfall divided by geographical location and months	Number		
	Total annual number of days affected by sandstorms divided by geographical location and months	Number		
	Total annual number of days affected by cyclones divided by geographical location and months	Number		
Quality of land/soil				
Protection of quality of land/soil	Land cover change due to erosion – physical loss	m2, proportion and trend		**An impediment to sustainable development in general and to sustainable agriculture in particular. It can be a major cause of poverty and further environmental damage due to overuse of national resources. Thus linked to food security, health, poverty, and human development**
	Land reduction and quality of topsoil associated with nutrient decline	m2, proportion and trend		
	Land affected by desertification and degradation	m2, proportion and trend		
	Land use change (productive or protective use to support sustainable land use planning and policy development)	m2, proportion and trend		
Agricultural productivity				
Agricultural productivity is improved	Land use for agriculture (hectares or proportion)	m2 (or hectare) and proportion		**Links to food security, climate change, economic development, education, and poverty reduction**
	Agriculture share of GDP/year	Number and proportion		
	Agriculture share of total export/year	Number and proportion		
	Agricultural productivity per hectare	Number		
	Livestock units per agricultural area	Number		
	Number of live animals in livestock units	Number		
	Direct agricultural loss attributed to extreme climate change events	Yes; No		
	Crop loss due to climate extremes	Number and proportion		
	Impact of climate change on livestock productivity	Yes; No		
	Proportion of agricultural area under productive and sustainable agriculture	m2 (or hectare) and proportion		

Use of chemicals for agricultural production affecting water quality is addressed	Intensity of use of water in agriculture (volume of water per unit of agricultural value produced)	Number		**Strong links to public health, poverty reduction, economic development, and human rights, also to environmental sustainability, and governance, including capacity to monitor state of environment, education, and security. Linked to climate change that may lower the water quality**
	Area of rain-fed agricultural systems	m2 (or hectare)		
	Use of nitrogen and phosphorous fertilizers per hectare of total agricultural area (cropland and pastures)	Number		
	Use of agricultural pesticides	Yes; No		
 **Forestry productivity**				
Forestry productivity is improved	Land covered by forest (hectares or proportion)	m2 (or hectare) and proportion		**Strong link to poverty reduction and economic development, land degradation, and environment. Links to gender, human rights, job opportunities, food security as well as governance and market development. Vulnerable to climate change**
	Land used for forestry (hectares or proportion)	m2 (or hectare) and proportion		
	Forestry share of GDP/year	Number		
	Forestry share of total export/year	Number		
 **Deforestation**				
Deforestation landscape is minimized	Rate of deforestation	m2 (or hectare), proportion and trend		**Linked to climate change mitigation (and adaptation), poverty reduction, gender, food security, conflict and security, human rights, health, and education**
	Deforested area as a proportion of total forest area	m2 (or hectare) and proportion		
 **Fishery productivity**				
Fishery productivity is improved	Fishery share of GDP/year	Number and proportion		**Strong link to poverty reduction and economic development, land degradation, and environment. Links to gender, human rights, job opportunities, food security as well as governance and market development. Vulnerable to climate change**
	Fishery share of total export/year	Number and proportion		
	Protected marine area (proportion of total area)	m2 and proportion		

Coastal zones				
Land release of coastal areas is addressed	Integrated Coastal Zone Management Plan	Yes; No		**Linked with food security, environment and climate change, governance and human rights, disaster risk reduction, and regional cooperation**
	Coasts affected by erosion	m2 (or hectare), proportion and trend		
	Coasts affected by progradation	m2 (or hectare), proportion and trend		
	Coastal area (km)	km or m2 (or hectare)		
	Number of people (or proportion of population) living in coastal areas	Number and proportion		
Sea level rise				
Land release of hazardous areas due to sea level rise is addressed	Relative sea level compared to previous measurements (cm)	Number (cm) and trend		**Linked with food security, environment and climate change, governance and human rights, disaster risk reduction, socio-economic development, and migration**
	Global sea mean surface temperature anomaly	Temperature (in Celsius)		
	National mean sea surface temperature anomaly	Temperature (in Celsius)		
Water sources				
Water availability is improved	Total freshwater availability on national scale divided by geographical regions	m3/per capita/year		**Strongly linked to human health, maternal and child mortality, other gender issues and human rights, primary education, poverty reduction, socio-economic development, climate change, security, and natural disasters**
	Rate of salinity intrusion (elevated concentrations of chloride/higher electrical conductivity of groundwater compared to average conditions in an area)	Proportion		
	Reduction of surface water bodies	m3 and proportion		
	Proportion of renewable freshwater resources per capita	m3/per capita and proportion		
	Total rainfall anomaly	litre		
	Proportion of total water resources used according to sectors (e.g. agriculture, forestry, etc.)	m3 and proportion		
Biodiversity/ecosystem preservation				
Biodiversity hotspots are addressed and preserved	Key biodiversity areas	m2 (or hectares)		**Sustaining ecosystems and biodiversity is crucial for human well-being. Links to governance, resilience to climate change, poverty reduction, health issues, and economic development**
	Protected terrestrial and marine area	m2 (or hectares)		
	Proportion of biodiversity areas at risk	m2 (or hectares) and proportion		
	Proportion of degraded area of ecosystems that has been restored	m2 (or hectares) and proportion		
	Priorities are defined as per national plans on biodiversity (Convention on Biological Diversity)	Yes; No		
	Nationally protected areas	m2 (or hectares) and proportion		
	Identification of alternative livelihoods as part of ecosystem preservation	Yes; No		
Climate-related migration				
Migration due to climate change is addressed	Urban population vs rural population as a proportion of total population	Number and proportion		**Links to governance and human rights, conflict, climate change, environmental degradation, poverty, socio-economic development, and urban planning**
	Rate of growth of urban population (per cent) versus rate of growth of rural population (per cent)	Percentage		
	Number of climate refugees, climate migrants, and persons displaced by climate change	Number disaggregated by SADDD		

Health and sanitation				
Health conditions are improved	Proportion of population undernourished (urban/rural)	Number and proportion disaggregated by SADDD		**Links to access to health facilities and functioning of health systems, poverty, education, environmental issues (including water and sanitation), socio-economic development, and nutrition. Also relevant to conflicts and security, and natural disaster risks (including climate change)**
	Contingency plan for distribution of medicines in case of natural disasters	Yes; No		
	National public health policy covers disease prevention and improvements in nutrition	Yes; No		
Sanitation systems are improved	Proportion of population (urban vs rural) using improved sanitation facilities (e.g. solid waste management, wastewater management and drainage systems)	Number and proportion disaggregated by SADDD		**Strongly linked to human health, primary education, environmental sustainability, human rights and gender issues, infrastructure, poverty reduction, also to peoples' vulnerability and ability to adapt to climate change**
	Proportion of population using safely managed drinking water services	Number and proportion disaggregated by SADDD		
	Proportion of population served by municipal waste collection	Number and proportion disaggregated by SADDD		
Renewable energy generation infrastructure				
Access to renewable energy sources is improved	Priorities are applied as codified in national climate change/environmental policies	Yes; No		**Strong links to economic development, poverty reduction, climate change mitigation, and infrastructure**
	Share of renewable energy sources in total energy use	Number and proportion		
Dispute over natural resources				
Disputes over land and natural resources are addressed	Scarcity of water	m3/person/year		**Links to poverty, health, security, human rights and gender, education, food security, economic losses, governance, natural resources, environment, and climate change**
	Number or density of refugees/internally displaced persons	Number disaggregated by SADDD		
	Number of land- or natural resources-related disputes	Number		

ENDNOTES

1 IMAS 07.13, 2nd edition (2024), Environmental management and climate change in mine action, https://www.mineactionstandards.org/standards/07-13/

2 GICHD 2023, *Mine Action and the Resilience of Communities to Climate Change*, GICHD, Geneva, https://www.gichd.org/publications-resources/publications/mine-action-and-the-resilience-of-communities-to-climate-change/

3 IMAS 07.13, 2nd edition (2024), Environmental management and climate change in mine action, https://www.mineactionstandards.org/standards/07-13/

4 GICHD 2023, *Mine Action and the Resilience of Communities to Climate Change*, GICHD, Geneva, https://www.gichd.org/publications-resources/publications/mine-action-and-the-resilience-of-communities-to-climate-change/

5 IMAS 07.13, 2nd edition (2024), Environmental management and climate change in mine action, https://www.mineactionstandards.org/standards/07-13/

6 IMAS 04.10, 2nd edition (2024), Glossary of mine action terms, definitions and abbreviations, https://www.mineactionstandards.org/standards/04-10/

7 IMAS 02.10 (2013), Guide for the establishment of a mine action programme, https://www.mineactionstandards.org/standards/02-10/

8 IMAS 07.11 (2019), Land release, https://www.mineactionstandards.org/standards/07-11/

9 For more information visit United Nations Gender Guidelines for Mine Action Programmes and the GICHD publication on Inclusive Data Management in the Mine Action Sector.

10 Please note that often the terms 'criterion/a' and 'indicator/s' are used synonymously. This is because often one indicator is used for one criterion. In theory, weights are given to the indicators (should be more than one indicator per criterion) to measure the respective criterion.

11 This section provides examples of prioritization and tasking processes (including data collection and assessment approaches) from Vietnam and Iraq as the piloting locations for this methodology.

12 Correspondence with the DMA and MILE Organization. DMA internal form, Ministry of Environment/Directorate of Mine Action – Hazard Report.

13 Correspondence with the DMA and MILE Organization. Extract of DMA internal IMSMA-generated hazard priority-setting matrix.

14 Correspondence with QTMAC and DBCU-QB.

15 Correspondence with QTMAC. Internal document, task priority assessment sheet.

16 Correspondence with QTMAC. QTMAC internal document, Guideline on clearance task prioritization for socio-economic development.

17 QTMAC internal document, Guideline on clearance task prioritization for socio-economic development.

18 "Climate Change and the Law: Integrating the NDC in Iraqi Legislations", UNDP Iraq, 2022, https://www.undp.org/iraq/stories/climate-change-and-law-integrating-ndc-iraqi-legislations

19 "Iraq Arab States", UNDP Global Climate Promise, https://climatepromise.undp.org/what-we-do/where-we-work/iraq

20 The nationally determined contribution is the plan to adapt to climate change and reduce emissions that gets submitted every five years to the United Nations Framework Convention on Climate Change (UNFCCC) secretariat. All countries that join the Paris Agreement are required to communicate and maintain their climate actions and the contribution they intend to achieve regarding reduction of emissions of greenhouse gases.

21 "Vietnam NDC 2022", UNFCC, https://unfccc.int/documents/622541

22 GICHD 2023, *Mine Action and the Resilience of Communities to Climate Change,* GICHD, Geneva, https://www.gichd.org/publications-resources/publications/mine-action-and-the-resilience-of-communities-to-climate-change/

23 GICHD 2011, *Priority-Setting in Mine Action: The Need for National Prioritisation Systems*, *GICHD Issue brief 2*, https://www.gichd.org/fileadmin/user_upload/PrioritySet-Brief2-Nov2011.pdf

24 IMAS 07.40, 2nd edition (2016), Monitoring of mine action organisations, https://www.mineactionstandards.org/standards/07-40/

25 IMAS 07.12 (2016), Quality management in mine action, https://www.mineactionstandards.org/standards/07-12/

26 IMAS 14.10 (2013), Guide for the evaluation of mine action interventions, https://www.mineactionstandards.org/standards/14-10/

27 SIDA 2011, Environmental and Climate Change Indicators. Guidance at country and sector level , SIDA, Stockholm, https://cdn.sida.se/publications/files/sida61411en-environmental-and-climate-change-indicators.pdf

28 UNSD 2024, Global Set of Climate Change Statistics and Indicators. Implementation Guidelines , UNSD, New York, https://unstats.un.org/unsd/envstats/climate%20change/Implementation_Guidelines.pdf

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