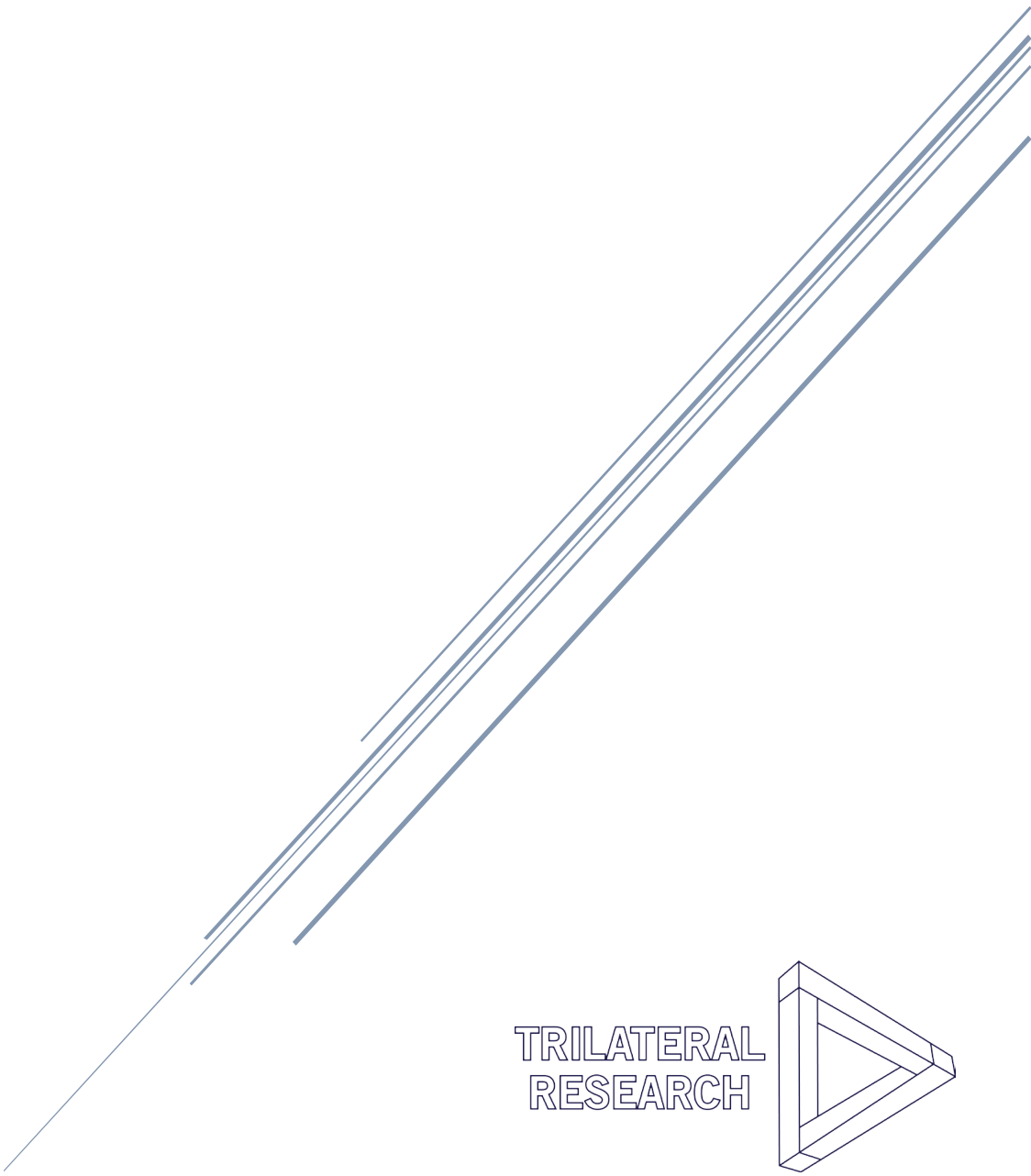


Project Solebay: Modern Slavery Risk Assessment Methodology and Methodological Description

Trilateral Research Ltd.



Further Information

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Comments on this report are welcome and can be sent to: *Subject: Project Solebay, Trilateral Research* – striad@trilateralresearch.com

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List of Abbreviations	
AJP	Allied Joint Publication (NATO)
AO	Area of Operation
BATUK	British Army Training Unit Kenya
CSSF	Conflict, Stability and Security Fund
DASA	Defence and Security Accelerator
DASH	Domestic Abuse, Stalking and Harassment and Honour Based Violence
DFID	Department for International Development
FCO	Foreign and Commonwealth Office
HSTVA	Human Security Threat and Vulnerability Analysis
HTA	Human Terrain Analysis
ICP	Intelligence Collection Plan
ISIS	Islamic State of Iraq and Syria
JSP	Joint Services Publication
KPI	Key Performance Indicator
MOD	Ministry of Defence
NGO	Non-Government Organisation
OSJA	Overseas Security and Justice Assessment
PJHQ	Permanent Joint Headquarters
RFI	Request for Information
ROE	Rules of Engagement
STRIAD	Strategic and Tactical Risk Identification & Assessment for Data-driven decision-making
SSR	Security Sector Reform
SU	Stabilisation Unit
TAA	Target Audience Analysis
TRL	Technology Readiness Level
UN	United Nations
UNDFS	United Nations Department for Field Support
UNHCR	United Nations High Commissioner for Refugees
UNODC	United Nations Office on Drugs and Crime

Glossary of terms

Term	Definitions used in this project
Human Security	A concept in the field of security studies which locates the individual human being (rather than the nation-state) as the primary unit of value and the primary subject or recipient of security provisions.
Human Trafficking	The recruitment, transportation, transfer, harbouring or receipt of persons, by means of threat or use of force or other forms of coercion, of abduction, of fraud, of deception, of the abuse of power, or a position of vulnerability, or the giving or receiving of payments or benefits to achieve the consent of a person having control over another person, for the purpose of exploitation. Exploitation shall include, at a minimum, the exploitation of the prostitution of others or other forms of sexual exploitation, forced labour or services, slavery or practices similar to slavery, servitude or the removal of organs. ¹
Gender	The political, social and cultural significance attached to biological differences between men and women, boys and girls. Gender is socially constructed roles ascribed to men and women as opposed to biological and physical characteristics. Gender roles vary per socio-economic, political and cultural contexts, and are affected by factors including age, race, class and ethnicity. Gender roles are learned and changeable.
Indicator	Any sign or other piece of empirical evidence that a phenomenon is occurring in the present.
Modern Slavery	Modern slavery is the term used within the UK, across all agencies, and is defined within the Modern Slavery Act 2015. The Act categorises modern slavery as including the offences of slavery, servitude and forced or compulsory labour and human trafficking
Open data	Open data is data that can be freely used, shared and built-on by anyone, anywhere, for any purpose.
Risk	Function of the likelihood and consequence of a negative occurrence.
Risk factor	An event, factor, variable, trend or other phenomenon that drives or have a causal influence on risk.
Threat	A natural occurrence, hazards, event, or intentional human action that exploits a vulnerability in a victim or target.
Vulnerability	Weaknesses in a system or asset that can be exploited by a threat, or which otherwise expose the asset to damage from a threat.

¹ Protocol to Prevent, Suppress and Punish Trafficking in Persons, Especially Women and Children, supplementing the United Nations Convention against Transnational Organized Crime, GA Res. 55/25, Annex II, UN GAOR, 55th Sess., Supp. No. 49, at 53, UN Doc. A/45/49 (Vol. I) (2001), Nov. 15, 2000, entered into force December. 25, 2003 [Online]. <https://www.ohchr.org/EN/ProfessionalInterest/Pages/ProtocolTraffickingInPersons.aspx>

Executive Summary

This is the final report produced for Project Solebay, which developed a risk assessment tool (at Technology Readiness Level 4) for the UK military to support their response to modern slavery and human trafficking (MSHT). In a broad subject covering many aspects of the Ministry of Defence (MOD), such as post-disaster relief to supply chain management, this report provides a focus on MSHT in conflict as a catalyst for change. Nevertheless, beyond conflict, the concepts and methodologies presented in this report could be applied to all aspects of military operations.

Chapter 1 introduces the project and provides an outline of its contribution to current UK military capabilities in supporting human security activities. The research methodology for the project is presented in Chapter 2, emphasising the close engagement between Trilateral Research and the UK MOD which was grounded in a co-design approach to research and development. Chapter 3 provides a breakdown of the key risk factors related to MSHT in conflict, noting the distinction between threat and vulnerability factors, that has also influenced the evolution of the tool from a singular risk assessment to a threat/vulnerability assessment and a scenario-based risk assessment.

The design and conceptual and technical development of the risk assessment is discussed in Chapter 4. This chapter first considers the difference between *indicators* and *risk factors*, then conveys the process of generating the risk assessment question sets, the answer options, and the additional user inputs. Following this, Chapter 4 explains three key changes as part of the evolution of the assessment. First, the ‘impact’ dimension of risk was re-conceptualised in a manner that provides a more readily meaningful assessment of impact from the perspective of the military. Second, the assessment drew inspiration from the military’s intelligence collection plans (ICP) to devise a range of question prompts to help guide the user in answering each question. Third, the risk assessment was disaggregated into a threat and vulnerability assessment – with questions on: armed and/or criminal groups; host nation forces; governance; demographics; socio-economic issues; migration; and health and environment – and a scenarios-based impact and risk assessment. The division of the tool in this manner allows the project to contribute more directly to the MOD’s growing human security analysis capabilities.

Chapter 5 discusses the use of the tool within Trilateral’s data-driven risk assessment platform, STRIAD. The chapter first explains how STRIAD is used to create and conduct a new risk assessment project, and how to use STRIAD’s various features and data visualisation dashboards to support broader risk assessment efforts. Second, the chapter outlines the changes that were made to STRIAD following a pre-deployment pilot. The pilot was necessary for Trilateral’s wider efforts in advancing beyond the use of Microsoft Excel for long-term assessment of risk.

The report concludes in Chapter 6, including some reflections on the extent to which the project has met its objectives and how Trilateral intends to build on the work conducted through Project Solebay to move towards supporting the military’s broader efforts in the human security space.

The project produced the following tangible assets: an initial version of the risk assessment methodology, implemented in Trilateral’s cloud-based STRIAD platform; a Microsoft Excel version of the risk assessment tool; and demonstration video for the tool; a range of open-data dashboards in STRIAD providing insights on MSHT risk; and an edited book on MSHT in conflict (forthcoming).

Project Solebay has contributed to the MOD's work by developing a risk assessment methodology that can be used to support military planning (e.g. human terrain analysis and target audience analysis) and programme management (e.g. needs analysis, theory of change, and Monitoring and Evaluation [M&E]). It enables a stronger understanding of the salience of MSHT threats and vulnerabilities by thematic area, thereby supporting the development of more targeted outreach activities, information activities, and broader human security activities; and it enables individuals the assessment of the most likely and consequential MSHT-related risks in order to support adjustments to planning activities where necessary and the recommended the application of mitigations where possible. The tool will enable the MOD to better consider and assess the MSHT-related threats, vulnerabilities and risks when planning human security activities. More broadly, the project has contributed to the advancement of the MOD's discourse and considerations around MSHT, as part of the growing focus upon human security within UK defence planning, policy and doctrine.

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1 Introduction

1.1 Context of the project

Project Solebay has developed a risk assessment methodology and tool to enable the UK military's response to modern slavery and human trafficking (MSHT). Throughout the project, Trilateral Research collaborated and engaged closely with representatives from the Ministry of Defence (MOD). Unless specified otherwise, the term 'user' within this report – particularly regarding 'user requirements' – henceforth refers to the MOD *in general*.

The project focuses on risk assessment rather than risk identification for two reasons. First, MSHT represents a constantly and dynamically changing environment, presenting challenges to establishing sufficiently causal connections between combinations of risk factors/drivers and resultant risks. As such, the project has produced a number of pre-identified risk scenarios which are assessed within the tool. Second, the user requirements that have emerged through the evolution of the project involve supporting a stronger understanding of the risk environment through both the assessment of the aforementioned scenarios and a separate, yet complimentary assessment of the threats and vulnerabilities in that environment. Thus, the project enables risk assessment while also *supporting* wider efforts of risk identification. In addition, the project offers a number of action points that are available to the user should they choose to, or need to, address the risk, which can be considered as risk management.

The genesis for the project is discussed at length in the *Interim Report*², however for the purpose of this report it should be noted that MSHT is one of several issues that fall within the scope of the military's efforts to advance and sustain human security. The concept of human security locates the individual human being as the primary unit of value and subject, or beneficiary, of security provisions. As per Joint Services Publication (JSP) 1325³, human security focuses on the livelihood and wellbeing of the individual; it emphasises the protection of individuals and their communities, to which MSHT, amongst other issues, represents a clear threat; the core questions of human rights and the core reason for defeating modern slavery and human trafficking.

Consequently, the context and *raison d'être* of this project are not solely to develop a risk assessment methodology to address MSHT, but also to support the UK military's human security missions and objectives, including supporting the wider UK MOD in understanding the complexities of this problem and its potential impact on military operations.

Readers will see that the question sets in the risk assessment are situated at the macro level and do not capture a granular level of detail. However, it should be noted that this reflects the complexity of the issue of MSHT in conflict, and the complex web of inter-connectivities that establish and perpetuate the permissive environment in which the phenomenon occurs. The project team explored the possibility of attempting to create a more complex question set, using, for instance, question trees. With this approach, the answer given to an initial question would open or foreclose further questions based on that initial answer. However, as discussed at various points throughout this report, the complexity and dynamic nature of the environment

² Muraszkiwicz, J., Fenton, T., Watson, H., Maio, G., and Hesketh, G. Project Solebay: Considerations for a UK Military-based approach to Assessing the Risk of Modern Slavery. Trilateral Research, 2019, [Online]. <https://trilateralresearch.co.uk/project/project-solebay/>

³ MOD (2019) *JSP 1325: Human Security in Military Operations* [Online]. <https://www.gov.uk/government/publications/human-security-in-military-operations-jsp-1325>

prohibits establishing the kinds of causal chains of events necessary to generate a sufficiently robust question tree. Indeed, the project team was guided by the ethos that the maintenance of transparency and integrity within the research and development of the risk assessment required starting at the macro level with more simple questions. Over time, Trilateral intends to build upon this work to develop the more complex and more granular question sets that the military requires for planning and analysis of wider human security activities.

1.2 Project approach

Project Solebay was grounded in an agile and co-design approach.

Co-design is a way of designing and developing project outputs, including technology-based risk assessment methodologies. Adopting this approach allowed the project to develop over time by drawing directly upon a variety of relevant actors, including the MOD, other government departments, expert groups (academics, non-governmental organisations [NGOs]), and the private sector. The project team carried out numerous engagements with stakeholders across a range of venues, including online, workshops, and face-to-face meetings and interviews. The project also incorporated co-design into the processes of collecting, sourcing and analysing data (see Chapter 5), peer review and validation of the risk assessment methodology.

The co-design approach saw the project team interact, sometimes daily (via phone or face-to-face), with MOD representatives in order to understand existing systems, gain a better understanding of user requirements, validate emerging questions that made up the risk assessment tool and discuss risk management. Such an approach helped build an on-going dialogue between the developers of the risk assessment tool and the MOD in order to identify desired outcomes and best means of achieving them. As mentioned, such a participatory approach was achieved by engaging in constant communication with representatives of the MOD, sharing components of the risk assessment and engaging with feedback (See Chapter 2). One major advantage of the co-design method is that users and designers work together to generate what the solutions should be, not just what the problems are that designers need to solve on their own. Furthermore, this method maintains a direct connection to the complex and emerging human context in which any project outputs will be used. Importantly, the project team maintained a record of each reiteration, and if needed they could return to and review elements of previous versions and use or adapt them. This is a benefit over other methods such as waterfall project management, which uses a more linear and rigid approach.

The adoption of an agile development approach saw the end-user requirements as the starting point for rapid development and delivery of the risk assessment, which was iteratively revised over short timescales and improved in close collaboration with the end-users. This approach allowed the project team to adapt and incorporate user requirements for the assessment as they emerged, as further insights and information became available, and, as different individuals within the target user group evaluated the tool at various stages of development. This approach was particularly relevant as Project Solebay works in a new domain, meaning the researchers did not have all the requirements defined at the beginning of the project and thus the use of agile methods provided for quick responses and adoption of changes, and therefore continuous development. Our approach therefore offered flexibility and adaptability in response to user requirements.

1.3 Capability contribution

This section illustrates the wider contribution of each of the project’s outputs, as well as secondary contributions. The project has achieved the purpose stated in the initial proposal:

‘[T]he purpose of this project is to provide a proof of concept for the development of risk identification and assessment methodologies and an associated tool. Such a tool would be used as part of the human terrain analysis and human engagement activities performed by [the MOD] in support of wider military operations, and to support internal training and awareness around modern slavery.’

The project has resulted in the creation of a risk assessment tool both in Microsoft Excel format and that can be further developed and used within Trilateral’s cloud-based data-driven risk assessment platform, STRIAD (see Chapter 5). It therefore provides a proof-of-concept means for the MOD to benefit from an enhanced capability to understanding and assessing the threats, vulnerabilities and risks related to MSHT, and apply this understanding within existing military planning processes. It should be noted that while the project sought to provide a proof-of-concept, the Excel tool will be made publicly available following completion of the project.

To enable the development of the risk assessment, the project team undertook rigorous social science research on MSHT in conflict, as detailed in the *Interim Report*⁴ and augmented in Chapter 3 below. These research activities and engagements have allowed for the acquisition of timely knowledge around MSHT and its associated risks, and the contribution of this knowledge to the MOD, other government departments (e.g. Stabilisation Unit [SU]), and to the Non-Government Organisation (NGO) community and other stakeholders. The outputs of the project have also fed into the iteration of UK defence doctrine.

All outputs contribute to the UKs overall aim of being a leader in the related fields of MSHT and human security, and provide capability to and beyond the MOD as summarised in this table:

Group	Benefits
MOD	<ul style="list-style-type: none"> • Supporting the UK military’s response to modern slavery, and subsequently other human security issues • Providing awareness on an issue that the MOD is likely to face in theatre • Enhancing understanding around different tactics of warfare used by adversaries • Contributing to the evolution and adaptation of policy around human security • <u>Enable more informed decisions regarding MSHT and human security activities</u>
Cross-governmental departments	<ul style="list-style-type: none"> • Sustaining the UK’s role as a global leader in the fight against modern slavery and human trafficking • Fostering an interdisciplinary approach to addressing a form of organised crime • Developing a methodology that aids in conducting a risk assessment of modern slavery and human trafficking, this can be reproduced for other departments such as the Home Office • Helping to plan mitigations on identified and documented risks • Establishing a business case for investing resources in a particular area and/or program

⁴ Muraszkiwicz, J., Fenton, T., Watson, H., Maio, G., and Hesketh, G. Project Solebay: Considerations for a UK Military-based approach to Assessing the Risk of Modern Slavery. Trilateral Research, 2019 [Online]. <https://trilateralresearch.co.uk/project/project-solebay/>

Non-governmental organisations	<ul style="list-style-type: none"> • Fostering an interdisciplinary approach to addressing a form of organised crime • Developing a methodology that aids in conducting a risk assessment of modern slavery and human trafficking, this method can be reproduced for situations relevant to the NGOs (e.g., situational awareness for preparedness activities) • Establishing a business case for investing resources in a particular area and/or program
Private companies	<ul style="list-style-type: none"> • Fostering an interdisciplinary approach to addressing a form of organised crime • Developing a methodology that aids in conducting a risk assessment of modern slavery and human trafficking from a situational awareness perspective • Establishing a business case for investing resources in a particular area and/or program • Supporting resource allocation
Academics	<ul style="list-style-type: none"> • Defining key terminologies • Developing knowledge on how modern slavery and human trafficking manifest in conflicts and crisis • Furthering the discourse around the MOD's role in addressing modern slavery and human trafficking

Table 1: Capability contribution to MOD, UK government, and other relevant actors

For the MOD, the risk assessment tool is envisaged as being used primarily by those members whose activities contribute towards military planning (e.g. human terrain analysis and target audience analysis) and programme management (e.g. needs analysis, theory of change, and Monitoring and Evaluation [M&E]). The tool would be used to understand the salience of particular threats and vulnerabilities in a given location, and to highlight key threats/vulnerabilities by thematic area, thereby supporting the development of more targeted outreach activities, information activities, and broader human security activities. The scenario-based risk assessment component would enable those individuals who contribute to military planning and programme management to identify the most likely and consequential MSHT-related risks, and therefore to make adjustments to planning activities where necessary and recommend the application of mitigating actions where possible. While the benefits of the tool are difficult to quantify at present, the tool will enable the MOD to better consider and assess the MSHT-related threats, vulnerabilities and risks when planning human security activities.

1.4 Report structure

This report provides a description of the methodological approach used to devise the risk assessment, a description of the key risk factors related to modern slavery in conflict, an explanation of the creation of the tool itself, and a sequence of storyboard instructions on using the risk assessment (see Annex 1). This report is grounded in the MOD context, processes and doctrine; the work has been informed, especially in the latter stages of the project, by focused interviews and discussions with key individuals and bodies within the MOD. That said, the broader conceptual, practical and normative paradigm underpinning Project Solebay should be considered relevant not only to national militaries worldwide, but also to the panoply of other actors – military and non-military; private, public and third sector – involved in humanitarian, development and security activities during situations where the UK military is present.

The report contains six chapters. Beyond this introduction, the second chapter describes the methodology used to identify the risk factors for MSHT in conflict, the approach to developing the tool, and the strengths and limitations of this methodology. The third chapter details those risk factors, noting the extent to which they can be correlated with the key types of MSHT (as identified in the *Interim Report*). The fourth explains how the project team created the risk assessment tool itself, including devising the question and answer sets, and explaining the core

aspects of the evolution of the tool's design over time. The fifth chapter explains the use of the risk assessment within STRIAD and the data visualisation dashboards connected to the STRIAD data lake, including how STRIAD was adjusted following feedback from a preliminary pilot with the MOD. This chapter will be of particular importance in helping to inform future research and development efforts. The sixth chapter concludes with a consideration of how the work in Project Solebay should be further developed to continue raising and refining its contributions to MOD capabilities in human security.

There are three annexes at the end of the report, which include the following:

- Annex 1: Storyboard demonstrating how the user progresses through the Excel tool;
- Annex 2: Table listing the open-datasets used within STRIAD (at time of writing);
- Annex 3: Pilot evaluation objectives, KPIs and evaluation questionnaire.

Terminology Note: This report uses two phrases: 'human trafficking' and 'modern slavery'. The UK government uses the latter, and as such when speaking generally this report relies on that wording. However, certain international documents, legislations and experts use the term 'human trafficking' and so when referring directly to those sources, this report uses the latter term.

2 Methodology: identifying risk factors

2.1 Developing a risk assessment methodology

Risk is understood as a function of the *likelihood* (or probability) and *consequences* (or impact) of a negative occurrence. As explained in the *Interim Report*,

‘This formulation of risk... is the standard model used across a range of professional domains, from heavy industry to the defence and security community. Indeed, this formulation underpins the approach to operational and strategic risk assessment in the UK military and NATO.’⁵

The development of the risk assessment used the following methodology.

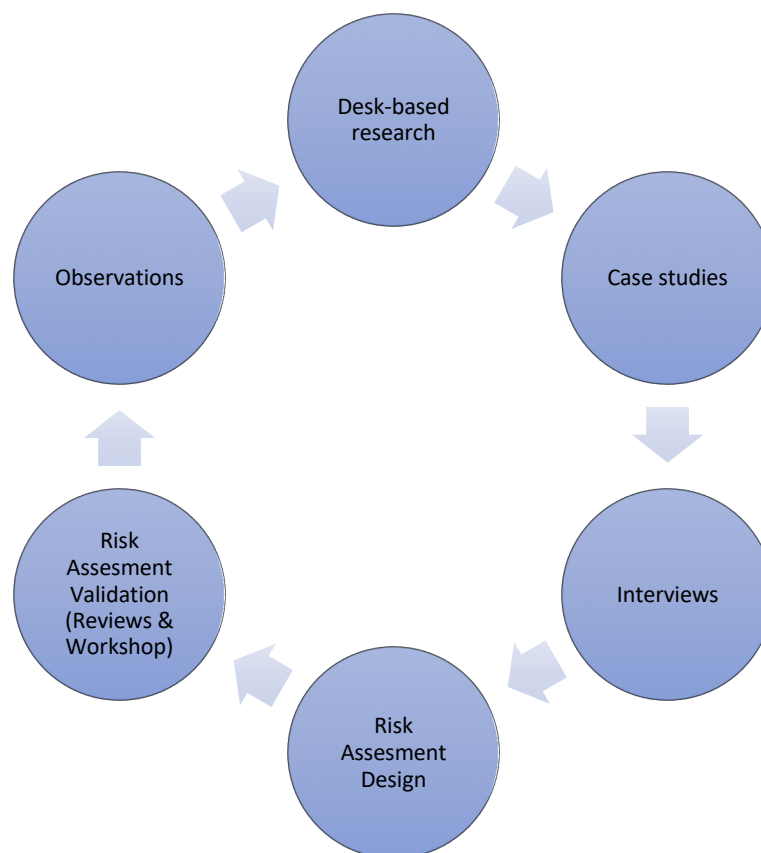


Figure 1: Risk assessment methodology

2.1.1 Desk-based research

The first step in developing the risk assessment was to identify the risk factors related to MSHT in conflict through a literature review, which was subsequently expanded to include a series of case studies. It was important to understand which factors affect the likelihood of MSHT manifesting and being exacerbated in conflict situations, and which factors affect the nature

⁵ Trilateral Research (2019) *Project Solebay: Considerations for a UK Military-based approach to Assessing the Risk of Modern Slavery* [Online]. https://trilateralresearch.co.uk/wp-content/uploads/2019/02/2019_Project-Solebay_Considerations-for-a-UK-Military-based-approach-to-Assessing-the-Risk-of-Modern-Slavery.pdf, p.23

and severity of its consequences to the local population (as risks to mission) and the UK military (as risks to force).⁶ At the same time, the project sought to better understand the approaches that existing risk assessments (e.g. the Domestic Abuse, Stalking and Harassment and Honour Based Violence (DASH) checklist⁷, the UN High Commissioner for Refugees' (UNHCR) Heightened Risk Identification Tool⁸, and the UN Department of Field Support's (UNDFS) Sexual Exploitation and Abuse Risk Management Toolkit⁹) had taken in identifying the risk factors relevant to their domain. A small number of risk factors had been identified during the initial desk-based research into the nexus of modern slavery and conflict at the start of the project. These factors formed the basis for further research that was targeted specifically on risk factors. Existing research and literature into modern slavery and human trafficking in conflict was then revisited in order to begin identifying relevant risk factors, which provided a general understanding of the kinds of events or phenomena that are considered to be sufficiently correlated with MSHT risk in order to be considered as risk factors.

When seeking to identify potential risk factors from the literature, the focus was on two criteria. First, the recording of any factors that were explicitly mentioned in the literature as being related either to MSHT 'risk' in general, or specifically to population 'vulnerability' to MSHT; such factors were often located at the macro level, such as poverty, migration, and unemployment. Second, in parallel, the noting of any phenomena (e.g. poverty, ideology, resource demand) mentioned in the literature which appeared to be related or correlated in some way with MSHT. For instance, when reviewing a UN Office of Drugs and Crime (UNODC) report on MSHT in conflict¹⁰, not only were there explicit references to risk factors, but also to the phenomena that were described as manifesting alongside or within the same temporal-spatial context as MSHT. Analysis was conducted not only to identify factors that directly or indirectly drive MSHT, but also those that appear to correlate with it. The challenges posed by the well-known causation/correlation issue are mentioned below.

2.1.2 Case studies

The project included a series of case studies enabling the project team to construct a more nuanced and comprehensive narrative of key conflicts in order to more accurately perceive the particular dynamics at play that may have affected the likelihood and consequences of MSHT. In addition, for users of the tool the case studies offer an approachable visualisation of the problem. From the perspective of research and cognition, it was expected that potential risk factors, or otherwise factors that reasonably appeared to correlate with modern slavery in some way, might become more apparent through developing a series of key conflict narratives. By creating these narratives of key conflicts, the team sought to derive additional risk factors that

⁶ Land Warfare Development Centre (2017) *Army Doctrine Publication (ADP) AC 71940: Land Operations*, Section 9-29 (c). March 2017 [Online].

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/605298/Army_Field_Manual_AFM_A5_Master_ADP_Interactive_Gov_Web.pdf.

⁷ Richards, L. (2009) *Domestic Abuse, Stalking and Harassment and Honour Based Violence (DASH, 2009-16) Risk Identification and Assessment and Management Model*. [Online] <https://www.dashriskchecklist.co.uk/wp-content/uploads/2016/09/DASH-2009-2016-with-quick-reference-guidance.pdf>

⁸ UNHCR (2010) *Heightened Risk Identification Tool*. [Online] <http://www.refworld.org/docid/4c46c6860.html>

⁹ UNDFS (2018) *Sexual Exploitation and Abuse Risk Management Toolkit*. [Online] <https://conduct.unmissions.org/sites/default/files/dpko-dfs-sea-risk-toolkit-28-june-2018-modified.pdf>

¹⁰ UNODC, (2018) *Countering Trafficking in Persons in Conflict Situations: Thematic Paper*, United Nations Office on Drugs and Crime: Vienna [Online]. https://www.unodc.org/documents/human-trafficking/2018/17-08776_ebook-Countering_Trafficking_in_Persons_in_Conflict_Situations.pdf

were not always – or not at all – explicitly mentioned as such in the literature. The selected case studies were Kosovo, Sierra Leone, and Iraq/Syria.

Area	Reason for choice
Kosovo	Prevalent use of sex slavery/trafficking in a conflict and post-conflict context. In addition, whilst organ trafficking arose in the Balkans towards the end of the conflict in the late 1990s, it continued in Kosovo.
Sierra Leone	It was also important to include a case from Africa, which, according to a 2009 study, accounts for 40% of the world’s child soldiers ¹¹ . The Sierra Leone conflict was chosen because of the manifest widespread use of child soldiers, forced labour and other forms of MSHT, and also because of the UK military’s prior engagements there (e.g. the ‘Operation Barras’ mission to rescue British soldiers held hostage by the West Side Boys militia in late 2000).
Iraq/Syria	Clear and widespread use of various forms of MSHT by the Islamic State group (ISIS), along with the sheer gravity and contemporary salience of the conflict. The types of MSHT include slavery, sexual exploitation, child soldiers (e.g., Cubs of Caliphate), forced labour.

Table 2: Case studies used for the development of the risk assessment

In choosing these case studies, a skew in research towards sexual violence in conflict and child soldiers should be noted. The project was challenged to find evidence of other types of MSHT in conflict, such as forced criminality, whereby people are forced to commit crime, or coerced combatants, whereby people are coerced into fighting against their will. These other forms of MSHT in conflict are most likely hidden within other phenomena such as criminality, giving rise to what is known as the ‘hidden populations problem,’ which may help explain why the identifying the issue of MSHT in conflict has been historically hindered. Without this evidence, however, occurrence of these other types of MSHT is difficult to assess. Nevertheless, professional judgement should be employed in order to account for the possible presence of other forms of MSHT.

2.1.3 Interviews

A total of 29 expert interviews were conducted, either face-to-face or via communication technology (Skype, GoToMeeting, phone, etc.). The interviews were with: academics (experts in modern slavery and/or conflict as well as those working in the risk assessment space), NGO staff, law enforcement authorities (e.g., police, including those stationed in conflict areas), military personnel, UNODC and research institutes that undertake risk assessments in other fields (e.g., corruption or supply chains). Interviewees were both based in the UK and outside. During all interviews, researchers adhered to the highest ethical standards. Semi-structured interviews lasted approximately 45 minutes to 1.5 hours. In some instances, and with participants’ informed consent, interviews were recorded. The majority of our research interviews had been conducted during the first phase of the project (September–December 2018) and had focussed on appraising the nature of MSHT in conflict and gaining broader understandings about the perceived role of militaries in responding to it. At the same time, the project team had also sought to use the interviews to identify potential risk factors to compliment and perhaps add additional focus areas for desk-based research efforts. In addition to these initial interviews, in the second part of the project the team maintained close

¹¹ Rakisits, C. (2009) ‘Child Soldiers in the East of the Democratic Republic of the Congo’, *Refugee Survey Quarterly*, 27(4), pp. 108-122

engagement with MOD colleagues. This observation demonstrates the novelty of this research for the MOD.

2.2 Tool development approach

The user requirements and feedback for the development of the risk assessment tool were gathered in close collaboration with MOD representatives through external reviews, workshops, on-going e-mail and face-to-face engagements, along with internal testing by the project team.¹²

2.2.1 Agile development, co-design

The project team collaborated using agile development tools and techniques. Tasks were assigned to individual team members using Jira, a software tool designed for agile project management and product development. New tasks were added to the project backlog as they arose (whether through internal discussions or engagements with the MOD) and were assigned to either the technical team or the project team. Tasks were organised into two-week ‘sprints’ in order to ensure the risk tool was development at pace and met internal release deadlines. Twice a week, the project team held a ‘scrum’ meeting to discuss what each member had accomplished since the previous meeting, what they were currently working on, what they were planning to work on next, and any issues or ‘bugs’ they were grappling with.

In addition, the co-design ethos built into the heart of the project was facilitated through compiling user requirements across time, prioritising key features/functionality, and tracking their implementation. Tracking the user requirements in this manner allowed the project team to understand which requirements were consistent across the potential user base, keep track of which user requirements had been implemented and which should be implemented in the future development of the tool. In summary, the key user requirements suggested that the tool should:

- Function as a standalone tool rather than being fully integrated into a specific process (e.g. the Overseas Security and Justice Assessment [OSJA]). This allows it to be agile, flexible, and able to be picked up by multiple potential user groups;
- Add value to wider MOD operations through providing greater levels of understanding about the MSHT situation in a given location;
- Enable the user to assess the trends in MSHT, rather than just a snapshot of the current situation;
- Conceptualise the impact of MSHT in terms of impact to UK forces and impact to human security in a given location;
- Allow the user to capture granular and contextual information;
- Align its scoring/scales with existing standard military metrics (e.g. NATO Uncertainty Yardstick);
- Track the level of risk across time;
- Enable the user to understand the key threats, vulnerabilities and risks within thematic areas (e.g. governance, migration) in order to guide thematic responses;

The key requirements which were not implemented within Project Solebay, due to resource constraints, suggested that the tool should:

¹² Additional co-design work took place beyond what is mentioned in this report, however this has been redacted for security reasons.

- Include an incident database and reporting mechanism to capture granular/tactical-level information;
- Capture granular details about the particular groups perpetrating MSHT and the particular population groups that are most vulnerable;
- Include a simple version of the tool for conducting quick assessments, alongside a more complex version using question trees.

2.2.2 Internal and external review

The risk assessment progressed through eight primary iterations from January to May 2019, with each iteration including up to four sub-iterations. The first iteration included 169 questions while the latter iterations included fewer than 50. The number of iterations reflects the co-design ethos built into the project – with regular inputs from the MOD continuously informing the work – and the rigorous manner in which the project team deliberated over every change.

In addition, at several points the project team engaged the MOD directly in the review process, obtaining their feedback on various aspects of the assessment. This included a workshop run by Trilateral with MOD representatives in late January 2019, during which the team presented an early version of the risk assessment and obtained feedback on the question and answer sets. This external review process further ensured the co-design approach was well-integrated into the development of the risk assessment.

2.2.3 Validation workshop

In March 2019, Trilateral held a validation workshop at the Royal College of Defence Studies (RCDS) in London, involving 22 participants. Representation was primarily from the MOD, but also from the Foreign and Commonwealth Office (FCO), the Department for International Development (DFID), the Stabilisation Unit (SU), UK police, United Nations (UN), and civil society. The workshop aimed to validate the risk assessment methodology in a laboratory environment (Technology Readiness Level [TRL] 4) to acquire valuable end-user requirements and expert feedback in an open discussion format. The workshop proved hugely successful in terms of the level of engagement, interest and participation, and the quality of feedback. The workshop allowed the project team to further consider key aspects of the design, inputs and outputs of existing risk assessments (in military and humanitarian contexts) and learn how and why these assessments are used. The project team was able to observe the use of the tool in an organic environment, thereby allowing for identification and consideration of participants' thinking processes that would have otherwise been difficult to discern (e.g., through interviews).

The feedback gathered from the workshop was instrumental in clarifying some of the project team's earlier assumptions about the user requirements – particularly due to the strong representation and participation from the MOD – and in provoking a number of key changes in the risk assessment's development. Following the workshop, the project team devised a list of priority changes to be implemented in the next iteration. The summary of this feedback is as follows:

Workshop feedback	Implemented?	Explanation (if feedback not implemented)
The answers should allow the user to indicate lack of intelligence/evidence to answer a question.	Yes	
Add a free-text box for the user to explain the rationale for each answer	Yes	
Define 'limited' and 'widespread' in the answers	No	The risk assessment used binary rather than multiple choice answers (see Section 4.2.2)
Use prompts within questions (e.g. 'Consider...') to assist the user	Yes	
Use a pre-existing military-relevant metrics for the likelihood/impact scales (e.g. NATO Uncertainty Yardstick)	Yes	
Clarify what exactly the 'confidence score' relates to.	No	The risk assessment used the answer option 'Insufficient intelligence' (see Section 4.2.2)
Create two versions of the RA: 1) Simple and quick to use; 2) More complex, with decision trees.	No	This was beyond the scope of the project, in terms of time/resources.
Track risk over time (temporal aspect to risk assessment)	Yes	
Capture the broader level of the types of trafficking occurring	Yes	
Need to develop an understanding of the vulnerability of the community	Yes	
Standardise the impact categories using the military 'impact table', as this is what the military is most familiar with	Yes	
Add a reporting mechanism	No	Beyond the scope of the current project.
Include risk mitigation questions that focus on oversight of existing policies and procedures, e.g. 'Have you taken steps to ensure that...?'	Yes	
Quantify the effects of mitigation measures by subtracting a value from the inherent risk score, based on the value attributed to the mitigation measure	No	Beyond the scope of what is possible with current research into MSHT in conflict.
Mitigation measures should be divided into short/long and strategic/operational/tactical	No	Not currently possible, pending further longitudinal study of MSHT/conflict and consultations with the MOD.
Disaggregate demographic groups where possible, by age, gender, etc.	No	Pending further consultations with the MOD, it is unclear what operational benefit this would provide.
Organise questions by thematic areas (rule of law, social, gender etc.) and align with Outreach Group's thematic topics where possible	Yes	
Align question set with two levels: 1) baseline prevalence of MSHT; 2) drivers/factors that indicate trends in MSHT prevalence	Yes	

Table 3: Feedback gathered from validation workshop in March 2019.

While the workshop provided unquestionable value, that there remained a variety of conflicting opinions on a number of issues discussed, including:

- Whether the risk assessment tool should be positioned primarily at the strategic, operational or tactical level, and who exactly (i.e. which professional role) should use the tool and ‘own’ the risks;
- Whether the *impact* dimension can be assessed independently, or is dependent upon the assessed prevalence/scale of the phenomenon;
- The extent to which mitigation measures can be applied in general or are dependent upon the specifics of a given situation;
- What makes a risk assessment methodology strong/weak, and which features are more/less important.

This difference in opinions was beneficial in allowing for the collation of multiple end-user, practitioner and expert perspectives, and thereby deriving something akin to a ‘harmonised’ set of user requirements. However, this also meant that where participants’ opinions or requirements diverged or were otherwise mutually incompatible, the project team was sometimes challenged with making decisions in the absence of an authoritative source against whom to align and further validate the range of possibilities.

2.3 Strengths and challenges

The above methodology contains a number of core strengths along with discrete challenges. Measures to address the challenges outlined below have been included within Trilateral’s proposal for Project Solebay Stage 2 (pending funding decision).

2.3.1 Strengths

Methodological approach

An inherent strength of the project lies in the methodological approach outlined above. The combination of a desk-based literature review, case studies, and interviews with experts in the fields of MSHT, humanitarian affairs and risk ensured the project adopted a rigorous, evidence-based research approach, thereby strengthening the validity of our findings, our empirical foundation and our decision-making. In particular, through taking this approach the project team was able to appraise itself of the latest knowledge relating to the risk factors of modern slavery and human trafficking in conflict, while passing this knowledge through the lens of the user requirements that emerged through discussions with the MOD.

Co-design

Perhaps the single most important strength of this methodology has been its foundation in the ethos of co-design approaches to product development. The project was undertaken through particularly close engagements and consultations with MOD representatives from the very outset. The project team was able to benefit greatly from access to a range of individuals across the MOD, in order to corroborate the information and insights received and also develop a more nuanced and more comprehensive understanding of the variety of user groups and their respective user requirements. The inputs and feedback the project team received from various members of the Brigade, in particular, have been invaluable in the design and technical choices made when developing the risk tool over multiple iterations. The nature of the relationship

between Trilateral and the MOD representatives involved in the project is a testament to the level and quality of collaboration and trust that the adoption of co-design approaches can foster.

Peer review and validation

The use of a peer review process was key in allowing us to validate the risk assessment methodology with the end users and with domain experts. At several stages, the project team gained direct feedback from MOD representatives on the risk assessment in its entirety, including the phrasing of the questions, the number of questions, the style of answers, and other aspects. The validation workshop in London in March 2019, and the earlier workshop with the MOD in January 2019, were both crucial in this regard. In practical terms, these workshops meant that the risk assessment was not developed in a silo by the project team, but rather it was influenced directly through end user and domain expert feedback.

Output

The approach taken in the project has resulted in a number of key outputs that have provided, or can provide, direct support to the MOD's efforts regarding MSHT. The project has produced a useable proof-of-concept risk assessment tool in Microsoft Excel format; has advanced the development of a cloud-based data-driven risk assessment in STRIAD; and has helped contribute towards a broader policy conversation within the MOD and cross-government around the military's role in promoting and sustaining human security. The outputs from the project and the manner in which these provided a broader capability contribution to the MOD are discussed in Chapter 1.

2.3.2 Challenges

Causation vs correlation

Assessing risk requires understanding what causes events to arise or to increase in *likelihood* (the challenges relating to *impact* are discussed below). However, differentiating between factors that drive or *cause* MSHT, and factors that merely seem to be present alongside or *correlate* with MSHT, is problematic. This issue emerged multiple times during our interviews. One interviewee, a UN employee, remarked there are 'challenging causal chains that you have to establish' and that far more analysis and field work is needed 'to make these kinds of links.'¹³ An employee from a well-known NGO focussed on modern slavery said it was impossible to 'say for certain that the variables we're identifying are causal for slavery.'¹⁴ The effects that these issues had in influencing the development of the risk tool are discussed below in Section 4.7 ('Threats, vulnerabilities and risk assessment').

Granularity of questions

Because of the difficulty in identifying which factors are drivers (or *causes*) of MSHT in conflict, the question sets remained mostly at the macro level. For instance, one can say that organised crime, weak rule of law, corruption, cross-border smuggling, gender discrimination, limited employment opportunities, and the host of other factors listed in Chapter 3 are drivers of MSHT, yet it is difficult to be more specific. While migration is a risk factor in MSHT, it is difficult to identify *why, when, under what circumstances* and *for which population groups* migration is more or less salient as a risk factor. Further work is required to overcome this challenge; efforts will be advanced through Project Solebay Stage 2 (pending funding decision).

¹³ Interview no. 27

¹⁴ Interview no. 20

Understanding ‘impact’

Developing a method of assessing the extent and severity to which MSHT would manifest in each impact category (discussed in Section 4.3 below) proved particularly challenging, as much depends on the intrinsic qualities of the ‘asset’ being impacted, whether this is the local population, the level of human security, or the UK military itself. It is insufficient to say that a certain type of MSHT can have a certain type of impact; developing a more nuanced question set requires being able to say *how* this impact is made operative, *what* type of impact, and *under what conditions* the severity of that impact changes.

From internal conversations, external discussions with the MOD, and feedback at the validation workshop in March 2019, it appears that quantifying the impact dimension of risk will remain an acute challenge in a dynamic environment (i.e., conflict) and will be almost entirely dependent upon the viewpoint of the observer. As such, Project Solebay adopted an approach that builds upon a standard military framework for understanding impact (see Section 4.3), thereby implicitly capturing the nuances mentioned above through the user’s own input.

End user(s)

Identifying who, exactly, are the primary and secondary end users was also a challenge. At present, this remains a policy challenge for the MOD in terms of engagement with MSHT and other human security issues.

Timing

The development of the risk assessment reflects a particular point in time, both in terms of the current level of knowledge about MSHT risk (factors and consequences) and about the MOD’s user requirements. For the risk assessment to remain up-to-date, attention will need to be paid to changes in both areas.

3 Modern slavery and human trafficking in conflict: risk factors

3.1 MSHT as a process

The crime of human trafficking, more so than that of modern slavery, is a crime of process, which includes three elements (see table 5). An **action** (recruitment, transportation, transfer, harbouring or receipt), a **means** (threat or use of force or other forms of coercion, of abduction, of fraud, of deception, of the abuse of power, or a position of vulnerability, or the giving or receiving of payments or benefits to achieve the consent of a person having control over another person) and **a purpose** (at a minimum, the exploitation of the prostitution of others or other forms of sexual exploitation, forced labour or services, slavery or practices similar to slavery, servitude or the removal of organs). In the case of a child, the element of means is surrendered.

The Act	The Means	The Purpose
Recruitment	Threat or use of force	Exploitation of the prostitution of others
Transportation	Coercion	Sexual exploitation
Transfer	Abduction	Forced labour or services
Harbouring	Fraud	Slavery or similar practices
Receipt of persons	Deception	Removal of organs
	Abuse of power or vulnerability	
	Giving payment or benefits	

Table 4: The 2000 UN Protocol on Human Trafficking definition

In turn modern slavery, although undefined in international law, appears to be more about the exploitation itself. Modern Slavery is the term used within the UK and the Modern Slavery Act 2015. The Act categorises offences of Slavery, Servitude and Forced or Compulsory Labour and Human Trafficking. Modern Slavery crimes include holding a person in a position of slavery, servitude forced or compulsory labour, or facilitating their travel with the intention of exploiting them soon after.

Whilst recognising that human trafficking is a process it is also key to recognise that these stages can happen consequently as well as concurrently. The latter is particularly true of the act and the means. For instance, a terrorist organisation may recruit (**act**) a female through chatting online, by abusing her vulnerability (**means**) (e.g., loneliness, loss of identity, learning difficulties). Subsequently the group may transport the female to the conflict zone (**act**) and then sexually exploit her (**purpose**), this may be the next day or three months from the recruitment. According to Piotrowicz:

‘These elements indicate that [trafficking in human beings] includes a number of actors, each of whom may play a role in ‘creating’ a victim of trafficking, from the acquaintance in the victim’s village who knows someone who can organise a job or visa, to the individual who facilitates illegal crossing of the frontier, to the person who supplies rooms to accommodate victims in transit and the bar owner who eventually ‘buys’ the victim.’¹⁵

¹⁵ Piotrowicz, R. (2007) ' Trafficking Of Human Beings And Their Human Rights In The Migration Context' in R. Cholewinski, R. Perruchoud & E. MacDoland, (Eds.) *International Migration Law. Developing Paradigms And Key Challenges*, The Hague: Asser Press, p.277

Piotrowicz's point on the amassing of actors is pertinent to the work of Project Solebay, which recognises that in situations where the military is present MSHT exists in a context of a range of actors:

- The victim: who comes from the populous of the state or is a migrant. He/she can be of any gender and any age;
- The actor who is a threat and makes the crime possible whether directly or indirectly. This could be an adversary group such as ISIS, or a soldier on a peacekeeping mission who indirectly and unwittingly supports demand for sexual exploitation (see more below);
- The stakeholder that seeks to prevent the crime (e.g., law makers) or protect victims after the crime took place (e.g., NGOs)

As well as being multi-dimensional crimes with a range of actors, modern slavery and human trafficking are recognised by scholars and practitioners as being high-profit, low-risk crimes driven by a range of factors, which can be acting cumulatively or independently. These are commonly referred to as the 'push and pull' factors and help explain how and why MSHT occurs. As described in the sections above, in order to develop a risk assessment tool it is crucial to refine an understanding of the relevant factors. Likewise, it is necessary to envisage and interpret the indicators that disclose the existence of MSHT. This chapter discusses the project team's identification of the relevant risk factors and their implementation within the risk assessment. It also presents the readers with some suggested mitigation and action points.

3.2 Factors relating to MSHT in conflict

The crimes of MSHT do not follow a 'script' that would otherwise permit the determination of a formula whereby *N* number of factors allows one to unquestionably conclude that the crime is about to occur. MSHT is a process involving various stages and actors and is triggered by a wide range of dynamics; regrettably, this makes the development of a risk assessment particularly difficult. Nevertheless, the table below summarises the project's findings regarding the factors that drive MSHT in conflict. The drivers have been divided into *topics*, although in reality a single factor may relate to more than one topic at any given time.

The factors are varied and relate not only to physical well-being but also to conditions of lacking employment, elements that undermine psychological well-being, constraints on interaction, past injustices, existing socio-economic structures, the natural environment, and other background conditions (see Chapter 5.2.1). Whilst it is unrealistic to weight each factor because each case of MSHT is unique, it appears to be the case that poverty is the greatest push factor: 'poverty and aspiration for a better way of life are by far the major push factors and are also among the principal reasons why parents send their children away to work.'¹⁶ Another push factor is the great disparity in status between men and women in many societies. As noted by the missing women problem¹⁷ established by Amartya Sen, discrimination means that phenomena like poverty, armed conflict, lack of education, and so on exert a disproportionate impact on women, which in turn plays a role in propelling them to migrate elsewhere or undertake other risks they may not usually take (e.g., accept job offers), thus raising their vulnerability and likelihood of being targeted. Importantly, JSP 1325 also recognises that

¹⁶ R. Masika, *Gender, trafficking and slavery*, (2007), Oxfam, Oxford, p. 5

¹⁷ <https://www.nybooks.com/articles/1990/12/20/more-than-100-million-women-are-missing/>

inequalities between women and men are linked to conflict.¹⁸ This illustrates the recognition of vulnerabilities as playing a significant role in the dynamics of conflict. In turn this provides confidence that going forward issues such as gender, human trafficking (and related factors) will receive greater attention. The following table identifies the factors that Project Solebay recognises as driving MSHT in conflict:

Factors that drive MSHT in conflict ¹⁹	Topic (as categorised within Project Solebay)
Poverty / Poor economic situation / Poor employment opportunities / Lack of regulation in the labour market / Poor workers' rights / Setup of "peacekeeping economies" ²⁰	Socio-economic
Poor education / Deficient training	Socio-economic
Existence of traditional harmful practices	Socio-economic
Erosion of rule of law ²¹ / Lack of, or inadequate, law on MSHT / Deficient penalties for MSHT sufficiently stringent to deter traffickers / Existing and/or increased human rights violations	Governance
Political instability / Corruption / Expansion of organised crime / Growth of power vacuums	Governance
Mass migration / Existence of people smuggling services / Poor migration options / Displaced and migrating persons lacking access to support networks / Strained security and protection of rights in refugee and IDP camps / Limited capacity or commitment by immigration and law enforcement officers to control borders	Migration
Discrimination of specific demographic groups (based on ethnicity, gender, age, nationality, etc.) / Social inequality / Gender-based violence / Growth of fundamentalism	Demographic
Deteriorating natural environment due to climate change / Food insecurity / Health emergencies ²² / Natural disasters	Environment and Health

Table 5: MSHT risk factors in conflict

The table illustrates common elements which expose people to trafficking and slavery-like practices, many of these factors are present in situations where the UK military is present. Moreover, these factors aid perpetrators by easing their ability to commit the offence and

¹⁸ MOD (2019) *JSP 1325: Human Security in Military Operations* [Online].

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/770919/JSP_1325_Part_1_2019_O.PDF p.1

¹⁹ Lee, M. (2007). 'Introduction: Understanding human trafficking'. In M. Lee (Ed.), *Human trafficking*, Cullompton, UK: Willan, 1-25; Smith, C. A. and Miller-de la Cuesta B. (2011), 'Human Trafficking in Conflict Zones: The Role of Peacekeepers in the Formation of Networks', *Human Rights Review*, 12(3), 287-299; Rehn, E. and Johnson Sirleaf, E. (2002). 'Women, War and Peace: The Independent Experts' Assessment on the Impact of Armed Conflict on Women and Women's Role in Peace-building', *United Nations Development Fund for Women.*, [Online]

<https://www.unfpa.org/sites/default/files/pub-pdf/3F71081FF391653DC1256C69003170E9-unicef-WomenWarPeace.pdf>;

Lillie, M. (2017), 'Human Trafficking and Armed Conflict' *Human Trafficking Search*. [Online]

<http://humantraffickingsearch.org/201738human-trafficking-and-armed-conflict/>; Binetti, A. (2015), 'A New Frontier: Human Trafficking and ISIS's Recruitment of Women from the West', *Human Trafficking Search*. [Online]

<http://humantraffickingsearch.org/resource/a-new-frontier-human-trafficking-and-isiss-recruitment-of-women-from-the-west/>; UNODC, (2018). 'Countering Trafficking in Persons in Conflict Situations: Thematic Paper', *United Nations Office on Drugs and Crime: Vienna*; IOM, (2015). *Addressing human trafficking and exploitation in times of crisis*. [Online]

<https://publications.iom.int/books/addressing-human-trafficking-and-exploitation-times-crisis-evidence-and-recommendations-0>; Watchlist (2003) *The impact of armed conflict on children in the Democratic Republic of Congo (DRC)*. New York: Watchlist; Smith, C. A. & Smith, H. M. (2010) *Human trafficking: the unintended effects of United Nations intervention*. *International Political Science Review*, 32(2), 123-145

²⁰ These include industries and services such as bars and hotels that spring up with the arrival of large, foreign, comparatively well-paid peacekeeping personnel

²¹ Rule of law refers to a principle of governance in which all persons, institutions and entities, public and private, including the State itself, are accountable to laws that are publicly promulgated, equally enforced and independently adjudicated, and which are consistent with international human rights norms and standards

²² E.g. epidemics, outbreaks of disease etc.

helping with recruitment and exploitation of victims. They also make it a low risk crime. In addition, many of the factors facilitate the perpetrators' job of coercing, compelling, abusing and/or deceiving potential victims. In other words, the factors add to vulnerability, which criminals can then manipulate for the purpose of exploitation. Consequently, reducing or eliminating these factors – these vulnerabilities – will reduce the opportunities people have to exploit one another as they will be regarded as equals and have more equal bargaining power.²³ Consequently, Project Solebay recognises that one of the most effective risk mitigation strategies is a multi-stakeholder approach to reducing vulnerabilities through implementing UN Sustainable Development Goals (SDGs),²⁴ which are the blueprint to achieving a better and more sustainable future. They address the global challenges that make persons vulnerable, including those related to poverty, inequality, climate, environmental degradation, prosperity, and peace and justice. We return to mitigation and action points in Section 3.5.

This summary of factors that cause human trafficking and modern slavery in conflict, or contribute to its likelihood, highlight a fundamental point: that there is no one reason that explains MSHT in conflict. It is not possible to link a particular risk factor with a particular form of MSHT. However, several concerns have been identified which can aid the military in responding to the risks related to MSHT. This includes:

- Factors that increase people's vulnerabilities, particularly in relation to socio-economic issues and demography;
- Factors that relate to weak rule of law and governance, which contribute to the impunity of perpetrators and makes MSHT a low-risk crime from the perpetrators' perspective;
- Factors that affect migration, where human traffickers subsequently use this process to lure and recruit people who are seeking, often desperately, to move elsewhere;
- Factors that relate to, or derive from, environmental or health emergencies.

An important question afore any military is whether or not they increase people's vulnerabilities, thus contributing to the likelihood of exploitation. Research appears to be in agreement that whilst the military or peacekeeping forces do not directly make people more vulnerable, they create a market where there is a demand for other actors – threats (see below) – to exploit vulnerabilities. This is particularly true with regard to sexual exploitation. This point was raised in the *interim report* and is repeated here:²⁵

In their article on the connection between the deployment of peacekeepers and the formation of criminal networks, Smith and Miller-de la Cuesta uphold their hypotheses that the increase in demand for sexual services that accompanies force deployments will give rise to a concomitant increase in human trafficking for sexual exploitation. They tested their proposition with primary and secondary research in Kosovo, Haiti, and Sierra Leone.²⁶ This is supported by the work of Rehn and Johnson Sirleaf who noted that in the vast majority of peacekeeping environments there is a relationship 'between the arrival of peacekeeping personnel and increased prostitution, sexual

²³ Goodin, R. (1985) *Protecting the vulnerable: a reanalysis of our social responsibilities*. Chicago Press, p.195.

²⁴ UN Sustainable Development Goals [Online] <https://www.un.org/sustainabledevelopment/sustainable-development-goals/>

²⁵ Muraszkiwicz, J., Fenton, T., Watson, H., Maio, G., and Hesketh, G. Project Solebay: Considerations for a UK Military-based approach to Assessing the Risk of Modern Slavery. Trilateral Research, 2019, [Online]. <https://trilateralresearch.co.uk/project/project-solebay/>

²⁶ Smith, C. A. and Miller-de la Cuesta B. (2011), 'Human Trafficking in Conflict Zones: The Role of Peacekeepers in the Formation of Networks', *Human Rights Review*, 12(3), 287–299

exploitation and HIV/AIDS infection.’²⁷ Importantly, however, the authors highlight that the military presence is not the sole driver of sexual exploitation. ‘The collapse of a normal economy, accompanied by the collapse of law and order, contribute to this environment of exploitation. Anyone can be an exploiter: members of armed groups, the government, regional organizations and the private sector.’²⁸ In other instances the military can contribute indirectly to human trafficking. Lillie writes: ‘the US military sub-contracts the majority of its non-military labour needs through outside agencies which in turn sub-contracts out to a third or even fourth company. Foreign workers are commonly brought to US military bases to work as cleaners, cooks, fast-food employees, beauticians, and construction workers. The majority of workers are from low-income countries like Fiji, the Philippines, Nepal, Ukraine, and Bulgaria and are looking for better economic opportunities. But the recruiters charge exorbitant fees, putting the individuals at risk of debt bondage and trafficking.’²⁹

It is also key to note that the UK strives to be active across the globe in providing security and justice assistance in order to have a positive impact not only for the citizens of the country in question but for the interests of the UK. Hypothetically these efforts should help reduce some of the vulnerabilities that make human trafficking and modern slavery likely, e.g., discrimination, whereby UK military is encouraged to engage with women in local communities. However, to-date there has been no research on how effective this is in reality. Lastly the authors wish to highlight, in consultation with the MOD, that to-date the UK military has not directly respond to MSHT risks. MSHT has only been formally acknowledged as a UK military concern in JSP 1325.

3.3 Threats

Although the vulnerability factors listed above can help explain what drives and/or exacerbates MSHT, the project also focused on the threats that exploit those vulnerabilities. Poverty alone does not lead to a situation of exploitation nor does lack of law; instead, there needs to be a threat that exploits that factor. This is well summarised by Srikantiah in relation to the factor of migration:

‘[T]he typical undocumented economic migrant is propelled by various forms of atmospheric “push” factors, ranging from dire economic conditions and political instability to strained family circumstances. The difference between the typical economic migrant and the trafficking victim is that the trafficking victim is influenced not only by these factors, but also by the actions of an individual wrongdoer: the trafficker.’³⁰

²⁷ Rehn, E. and Johnson Sirleaf, E. (2002). ‘Women, War and Peace: The Independent Experts’ Assessment on the Impact of Armed Conflict on Women and Women’s Role in Peace-building’, *United Nations Development Fund for Women*, [Online] <https://www.unfpa.org/sites/default/files/pub-pdf/3F71081FF391653DC1256C69003170E9-unicef-WomenWarPeace.pdf> p.61

²⁸ Rehn, E. and Johnson Sirleaf, E. (2002). ‘Women, War and Peace: The Independent Experts’ Assessment on the Impact of Armed Conflict on Women and Women’s Role in Peace-building’, *United Nations Development Fund for Women*, [Online] <https://www.unfpa.org/sites/default/files/pub-pdf/3F71081FF391653DC1256C69003170E9-unicef-WomenWarPeace.pdf> p.61

²⁹ Lillie, M. (2017), ‘Human Trafficking and Armed Conflict’ *Human Trafficking Search*. [Online] <http://humantraffickingsearch.org/201738human-trafficking-and-armed-conflict/>

³⁰ Srikantiah, J. (2007) ‘Perfect Victims and Real Survivors: The Iconic Victim in Domestic Human Trafficking Law’, *Boston University Law Review*, 87, pp.157–211

The threat in the case of MSHT comes from an adversary actor, or as Srikantiah states a ‘wrongdoer.’ As articulated by the Organisation for Security and Co-operation in Europe (OSCE): ‘[t]o fully understand the mechanisms of human trafficking, it is necessary to focus not only on the environment or situations which make potential victims more vulnerable to trafficking, but also on those factors that facilitate the traffickers and those who participate or aid in the crime of trafficking.’³¹ This section focuses on this aspect.

Threats can constitute anything that contributes to the altering, destruction or interruption of an asset or its integrity. In order to do so, the threat exploits vulnerabilities in its target (i.e. the factors mentioned above). Indeed, through the project team’s engagements with the MOD it has become apparent that a key military user requirement relates to developing a far stronger understanding of the nature of these threats, including *where* and *who* they are, *which forms* of MSHT they are perpetrating or seeking to perpetrate, and their *reasons* and *capabilities* for doing so. (For further discussion on the nature of MSHT threats, please see Chapter 4.) For the purposes of Project Solebay, the project team has devised the following three key potential threat groups:

- 1) Armed and/or Criminal Groups (e.g., Boko Haram)
- 2) Host Nation Government (e.g., corrupt government officials)
- 3) UK military or allied partners such as UN peacekeepers (potential for inadvertent engagement)

There is very often an imbalance of power between the victim and the threatening actor. This is well explained through constitutive theory, where MSHT ought to be understood within a broad cultural, structural, geographic context. According to Lanier and Henry, constitutive criminologists ‘perceive criminals as excessive investors in crime who use any means necessary to achieve the desired outcomes.’³² For instance, ISIS has been observed to use MSHT to facilitate the recruitment and retaining of fighters, including children, and provide a ‘bride’ as a ‘reward’ for jihadist fighters. ISIS also perpetrates the crime as a means of acquiring finances to support their war effort and to dehumanise and psychologically devastate opponents. Regarding host nation or local government forces, the threat emerges when the government actor is involved in the crime (directly or indirectly) and/or when it enables (through acts of commission or omission) a state of normlessness with regard to the crime or facilitates a lack of social regulation. The project acknowledges that MSHT cannot be understood outside the complex and often tense legal-political circumstances. Consequently, the risk assessment contains the follow questions:

Armed and/or Criminal Groups	Do any groups appear to include, or otherwise rely on, the use of child soldiers for operational sustainment?
	Do any groups appear to include, or otherwise rely on, the use of forced labour for operational sustainment?
	Do any groups appear to actively promote slavery/trafficking for sexual exploitation?
	Do any groups appear to promote any other types of human trafficking or slavery as part of their ideology, doctrine or MO?
	Are detention centres, displacement camps or similar settlements plagued by criminal activity?

³¹ Aronowitz, Alexis. Theuermann, Gerda and Elena Tyurykanova, *Analysing the Business Model of Trafficking in Human Beings to Better Prevent the Crime*. OSCE, Vienna, 2010 [Online]. <http://www.osce.org/cthb/69028> p.15

³² Lanier, M., & Henry, S. (2004). *Essential Criminology* (2nd ed.). US: Westview Publishers, p.323

	Are any groups using online fora to engage in recruitment, advertisement or trade in trafficked people (national or global)?
	Have any groups targeted displaced populations for criminal or exploitative purposes?
	Is organised crime extensive?
Host Nation or Local Government	Is there any suspicion that Host Nation forces are contributing towards slavery/trafficking for sexual exploitation?
	Is there any suspicion that Host Nation forces are contributing towards, or using, forced labour?
	Is there any suspicion that Host Nation forces are contributing towards, or using, child soldiers?
	Is there any suspicion that Host Nation forces are contributing towards, or using, other types of modern slavery and human trafficking?
	Is corruption extensive?

Table 6: Project Solebay - MSHT threat questions

3.4 Mitigation

Acknowledging and understanding that MSHT is part of conflict and post-conflict settings is necessary for the military to be effective in undertaking its array of tasks: combat, protecting civilians, stabilising regions and delivering training. Overlooking how individuals are exploited, what financial benefits MSHT brings for adversaries, how communities are affected, and other issues, will lead not only to short-sighted responses but may hinder long-term security and stability. To that end it is suggested that militaries should consider applying mitigations actions to address MSHT in conflict situations. While this constitutes a less traditional aspect of military planning and activities, it reflects the expansion of the military’s activities into the domain of human security. This section proposes several action points and mitigation measures stemming from the work conducted in Project Solebay.

The development of these mitigation and suggested action points took place against a thorough considerations of dynamics that enable MSHT to prevail – vulnerabilities, threats. In turn, the project team devised some suggestions that are macro and relate to the overall situation and importantly, are not solely related to MSHT but also address broader issues of human security. In addition, the team formulated propositions that specifically target a threat or vulnerability – micro - thus disrupting the threat and vulnerability relationship.

It is important to recall that compared with other stakeholders in this field – including law enforcement and NGOs – the military has been less involved in efforts to interrupt MSHT and break the chain of causation. Thus, knowledge as to the effect of the suggested mitigation measures below is limited. As a final caveat, it should be noted that developing a successful response to the causes and consequences of MSHT in conflict is not straight-forward and will require investments in time, coordination, monitoring and evaluation of ‘what works’.

Suggested action point / mitigation	Threat and/or vulnerability targeted
The demand for sexual and other services from trafficking victims may be driven or increased by the presence of foreign military forces. It is imperative that adequate training is provided to military forces on what constitutes MSHT, its signs, its connections with organised crime, and the adverse impacts it can have on mission success. This must be accompanied by genuine efforts to make the training more than just a 'tick box' exercise.	Micro <ul style="list-style-type: none"> Threat from uninformed military who may not understand how their actions facilitate MSHT Vulnerabilities: Setup of “peacekeeping economies”; Lack of or inadequate law on MSHT; Expansion of organised crime; Gender-based vulnerabilities
A “zero tolerance policy” regarding engagement with, or facilitation of, MSHT should be adopted across HM	Micro

<p>Forces and be made applicable to all military personnel at all levels of command. The policy should prohibit UK troops, their contractors and sub-contractor from being complicit in any way in MSHT.</p>	<ul style="list-style-type: none"> • Threat from uninformed military who may not understand how their actions facilitate MSHT • Vulnerabilities: Erosion of rule of law; Lack of or inadequate law on MSHT; Deficient penalties for MSHT
<p>In order to ensure that victims of human trafficking are not unjustly detained but are instead afforded support (where applicable), operational training should be delivered to enable UK forces to better identify and distinguish between victims of human trafficking and other categories of persons, such as smuggled migrants, refugees, and displaced persons.</p>	<p>Micro</p> <ul style="list-style-type: none"> • Threat from uninformed military who may not understand what MSHT is and which population groups may need protection • Vulnerabilities: Erosion of rule of law; Lack of or inadequate law on MSHT; Deficient penalties for MSHT; Existence of people smuggling services; Poor migration options
<p>Anti-human trafficking training should also be provided to allied partners, local law enforcement and security forces, border control agencies, and militaries in area of deployment.</p>	<p>Micro</p> <ul style="list-style-type: none"> • Threat from host nation government • Vulnerabilities: Erosion of rule of law; Lack of or inadequate law on MSHT; Deficient penalties for MSHT sufficiently stringent to deter traffickers; Existing and/or increased human rights violations
<p>During stabilisation and peacebuilding operations, a particular effort should be made to ensure that females and males, and an adequate representation of existing ethnic groups are afforded equal opportunity to voice their concerns, experiences, needs and grievances.</p>	<p>Micro & Macro Solution</p> <ul style="list-style-type: none"> • Threat from host nation government and military or allied partners such as UN peacekeepers • Vulnerabilities: Discrimination of specific demographic groups (based on ethnicity, gender, age, nationality, etc.); Social inequality; Gender-based violence
<p>Military activities should help to address the underlying factors that increase the prevalence of MSHT (e.g. low access to education, weak rule of law, gender-based discrimination) in order to build resilience amongst the local population through establishing the conditions that allow for livelihood and educational opportunities, increased human security, and a reduction in gender/ethnic/religious-based violence and discrimination. This would correspond to the SDGs.</p>	<p>Macro Solution</p>
<p>The military should strive for regular interaction and dialogue with NGOs who have specific expertise or front-line experience in understanding MSHT in conflict. In parallel there should be where possible a collaborative association, in which there is sharing of information and typologies (particularly as the military may be the only eyes and ears in a particular area).</p>	<p>Macro Solution</p>
<p>UK forces should engage in further discussions with other militaries partnered with, or present during, the operation (e.g. UN peacekeepers) in order to establish mechanisms for jointly addressing the issues resulting from MSHT, and relevant to other human security questions in conflict.</p>	<p>Macro Solution</p>
<p>Legal advisors should be used to enhance each mission's ability to plan for, respond to, and investigate instances of, and issues around, MSHT and human security during deployment.</p>	<p>Macro Solution</p>
<p>Counter-trafficking and human rights experts should be included and integrated into the planning and development of military activities and should be called upon when mission-related assessments are conducted.</p>	<p>Macro Solution</p>

<p>Deploying an independent, multi-disciplinary advisory and monitoring team (could be trans-national) that would advise military forces to help ensure independent and impartial responses to, and transparency around, any issues related to MSHT and broader human security. This group should also engage closely with the local population in order to develop a stronger awareness of vulnerable populations and potential threat actors in the area, and to communicate that countering MSHT is a priority for UK forces.</p>	<p>Macro Solution</p>
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Table 7: MSHT risk mitigation options

In addition, the project team devised a list of checks that the military could commence in order to mitigate the impacts of MSHT, whether in terms of financial impacts, impacts to the mission, legal impacts, reputational impacts, or impacts in terms of the psychological wellbeing and morale of soldiers:

- Have steps been taken to ensure that all contracts for the provision of services within the deployment area are handled through robust tendering frameworks (CSSF, FCO, etc.)?
- Have steps been taken to ensure that UK military personnel are fully aware of the ROE regarding child soldiers?
- Have steps been taken to ensure compliance with UK military policy regarding sexual relations and sexual conduct?
- Have steps been taken to ensure that UK military personnel will have access to healthcare, including mental healthcare, and other relevant provisions?
- Have UK forces received training/guidance regarding what to do if they encounter child soldiers?
- Are there measures or procedures in place to respond to the potential use of child soldiers by allied partners?
- Are there processes in place to capture and escalate any reports of sexual misconduct by UK and/or allied partner forces?
- Are there measures in place to handle media coverage of the operation?

Importantly, the Joint Services Publication (JSP) 1325 on Human Security, published in January 2019, also makes a series of key suggestions:

10. It is important to ensure that anti-trafficking responses are systematically included in military planning and execution of operations. In particular, anti-trafficking responses should be:

- a. protective, by targeting crisis-affected individuals who are in a particularly vulnerable situation as well as those who have already been trafficked, and ensuring a survivor-centred and gender-sensitive approach.
- b. proactive, by starting from the outset of a crisis, even if cases of trafficking have not yet been reported or confirmed.
- c. preventive, by identifying and responding to actual or potential risk and protective factors.
- d. collaborative, by bringing together the strengths, capacities, and mandates of development and humanitarian actors from different sectors as well as national actors, including law enforcement authorities.

11. Military, humanitarian and development actors should improve collaboration and coordination, and national and international humanitarian actors should be trained to better respond to the needs of trafficked victims and other crisis-affected populations.

12. It is also important to enhance the knowledge base of human trafficking. In particular, collecting data, monitoring, and analysing trafficking in the context of crises, including protective and risk factors, as these can support stronger responses. Existing anti-trafficking prevention and protection models and related policies and guidance, such as referral mechanisms and indicators for the identification of trafficked people, can be adapted to and used in conflict and post conflict setting.

13. Human Trafficking occurs in fragile states and post-conflict situations, particularly when there is widespread poverty and limited rule of law. Hence the military may be operating in a source country or a transit country for human traffickers. Military forces directly tasked with broader stabilisation responsibilities should be aware of the possibility of human trafficking and the supporting criminal networks and address these issues. This is an area where it is important for military forces to create the space in which the police and other Rule of Law organisations can operate.

14. At the operational and tactical level, the military should be aware of agencies in the area who lead on responding to incidents and victims of human trafficking. This will enable the military to know who they can hand victims and perpetrators of human trafficking to.

15. In summary military personnel should know how to recognise and respond to victims of trafficking and who to report them to.

Figure 2: Section from Joint Services Publication (JSP) 1325

The list of suggested points and checks should be revised on an ongoing basis, as:

- MSHT has a changing nature, including typology;
- Situations where the military is deployed, and the type of work done by the military are not the same throughout;
- MSHT as a war tactic and criminal enterprise change.

3.5 Summary

In summary the following figure presents the risk of MSHT in situations where the UK military is present and possible solutions:



Figure 3: Example representation of MSHT in a situation where the UK military is present

4 Creating the risk assessment

This chapter explains the processes and practical steps taken in the creation of the risk assessment tool itself, and how the tool evolved over time. This includes: the differentiation between indicators and risk factors; the creation of the question and answer sets; the conceptualisation of the impact dimension of risk; the integration of question prompts; and ultimately the evolution towards the use of a threat/vulnerability component and a scenario-based risk assessment component.

4.1 Risk factors and indicators

At the start of the project a large number of potential risk factors were identified through literature reviews and case studies, which were supplemented by interviews. However, the project team was concerned to avoid a conflation of *risk factors* of MSHT on the one hand, with *indicators* of MSHT on the other hand. This distinction is important. Risk factors are variables, events, hazards etc. which increase or decrease risk; usually, they increase or decrease the likelihood dimension of risk; risk factors can also be thought of as drivers. On the other hand, indicators are ‘signs’ that an event or phenomenon is occurring. While risk factors relate to what may occur *in the future*, indicators allow the observer a ‘sneak peek’ at what is occurring *in the present*. In some domains, indicators are synonymous with ‘spot the signs’.

Understanding the difference between *indicators* that show something is happening, versus *risk factors* which increase the likelihood (and indeed impact, although this is more difficult to grasp) of something happening, is crucial, as risk is inherently future-looking. One could argue that if enough indicators for a given phenomenon are identified for a given situation, the related risks increase. It can also be argued that the occurrence of indicators in the past may be considered to form a trend that can be extrapolated or projected into the future. However, in the absence of additional information – variables, risk factors, drivers, etc. – which suggests that current trends will indeed continue, it is problematic to assume that they will do so.³³

As such, many of the initial risk assessment questions were removed if deemed insufficiently constitutive of risk factors. For instance, Islamic State (ISIS) often recruited children during attacks on schools,³⁴ while some parties of the conflict in Yemen recruited child combatants by giving payments to their families, thus essentially ‘purchasing’ the children. These two pieces of information initially produced the following risk questions:

- “To what extent are armed groups targeting schools to recruit children?”
- “Are there any signs that armed groups are making payments to local families to recruit their children?”

However, neither question can be said to constitute a risk factor *per se*. Both questions relate to what is happening *in the present*; neither can be said to suggest what is likely to happen in the future, absent *other information* which confirms or denies that these trends are likely to continue. It is precisely this *other information* which more accurately embodies the quality of a risk factor. Indeed, the risk factor that those questions were *indicative of* was more the issue

³³ This is akin to the ‘gambler’s fallacy’.

³⁴ UNODC (2018) *Trafficking in Persons in the Context of Armed Conflict* [Online]. https://www.unodc.org/documents/human-trafficking/2018/17-08776_ebook-Countering_Trafficking_in_Persons_in_Conflict_Situations.pdf

of whether armed groups were using child soldiers *opportunistically* or as part of an underlying strategy for *operational sustainment*; the latter suggests an increased likelihood that they will continue to do so in the absence some form of intervention which would compel them to cease this practice. The risk question therefore emerged as follows:

- “Do any groups appear to include, or otherwise rely on, the use of child soldiers for operational sustainment?”

4.2 Questions, answers, and user inputs

This section discusses the logic behind the construction of the question sets, the answer options, and the additional user inputs. Each of these components resulted from a combination of desk-based research, internal and external reviews, internal and external validation, and on-going consultations with representatives from the MOD, along with a pre-deployment pilot of the risk assessment in Trilateral’s cloud-based platform for data-driven risk assessment, STRIAD, by a member of the MOD.

4.2.1 Generating the initial question set

To generate the initial risk assessment question set, the project team used a combination of desk-based research, three case studies (Iraq/Syria; Sierra Leone; Kosovo), and interviews with civilian experts and individuals from the MOD, as discussed earlier. The team noted any information, events, phenomena, hazards, behaviours or other variables which appeared to be connected in some way with the type(s) of MSHT being discussed by the source. Initially, a large number of variables was recorded. For instance, when considering the Iraq/Syria case, the information and variables that emerged included, *inter alia*:

- The flow of migrants facilitated growth in human trafficking, while human trafficking is a push factor of migration;
- Some smuggling groups along the migratory routes have a link with people from a terrorist group though they might not necessarily share the same objectives
- ISIS uses human trafficking to distract, destabilise, radicalise, and terrorise local communities;
- ISIS uses human trafficking to generate income and improve morale amongst its fighters;
- ISIS (and other groups) actively recruits, kidnaps and trafficks women and girls to Syria for forced marriages and sexual slavery;
- ISIS has deliberately targeted ethnic and religious minorities for human trafficking;
- Human trafficking provides a means for ISIS fighters to reach Europe undetected;
- ISIS openly promotes human trafficking in its publications and discourses;
- ISIS (and other parties to the conflict in Syria) has recruited children for exploitation in conflict.

For the three case studies, the project team reviewed 18 sources and combined the findings with the results of other desk-based research and interviews. At this stage, the generation of the risk question set from the research largely took the form of a textual analysis of the recorded information. With a large volume of information and potential variables, the team sought to narrow the frame of reference around each piece of information in order to disaggregate the potential risk variables contained within and thereby increase the number and granularity of the question set. For instance, one piece of information was the following:

- *ISIS actively invades territory and abducts and trafficks primarily non-Muslim females for sexual slavery.*

From this piece of information, two separate questions were devised:

- “To what extent is there evidence that one or more armed groups are engaging in a deliberate strategy of targeting women for sexual slavery?”
- “To what extent is there evidence that one or more armed groups are engaging in a deliberate strategy of targeting minorities for sexual slavery?”

Due to evolutions in the development of the risk assessment, the above questions were eventually converted into prompts to guide more macro-level questions, as discussed in Section 4.4 below. Some pieces of information generated a single question while others generated several questions. In total, the initial question set included 147 questions. Through internal reviews, tests, and discussions with the MOD, the question set was reduced to 51 over several iterations. Some questions were merged together where their differences were too small to justify separate questions, or where they were essentially asking about the same issue. Other questions were removed due to either: (i) their irrelevance to the conflict setting; (ii) the inability to answer them; (iii) their irrelevance to understanding risk.

4.2.2 *Generating the initial answer options*

It was initially decided to use multiple choice answers to capture varying levels of likelihood and impact within each question. Each question was assigned three answer options following a standard ‘low’, ‘medium’, ‘high’ structure, but this was adapted depending on the nature of the question and whether a qualitative or quantitative answer was being sought. For instance, likelihood questions regarding ‘extent’ were generally allocated answers in the format of ‘a) No evidence of this’, ‘b) Limited’ and ‘c) Widespread.’ The terminology used to differentiate between these ‘low’, ‘medium’ and ‘high’ answers was decided upon through internal discussions with the aim of making the answers clear and distinct. ‘Limited’ and ‘Widespread’ did not have a numerical baseline and were still subjective.

Through internal and external reviews and the validation workshop, it became apparent that the wording of the low likelihood answer option – ‘a) No evidence of this’ – was confusing, because it was unclear whether the answer implied that ‘evidence suggests this is not occurring’ or whether it meant ‘there is a lack of evidence to say whether or not this is occurring.’ This point was raised by several participants at the validation workshop. Therefore, an extra answer option was added to all questions, ‘Insufficient intelligence,’ which may thereby indicate an intelligence requirement for an ICP.

However, over time it was decided to move away from the multiple-choice answers and adopt a binary format. The reason for this was the shift away from using *likelihood* questions towards developing the *threats/vulnerabilities* question set – in order to meet the evolving user requirements from the MOD side – whose deterministic connection to likelihood was undermined due to the challenges in establishing an evidence-based causal connection between particular threats/vulnerabilities and particular risks, or between particular risk factors and particular risks (see Section 2.4.2). This was a significant evolution and is discussed in detail in Section 4.7 below. With regards to the answer options, the three answers mentioned above (‘no evidence’, ‘limited’, ‘widespread’) were replaced with binary ‘yes’ and ‘no’ answers, which also prompted a re-phrasing of several of the questions, which will be discussed in Section 4.7.

A requirement also emerged to include a confidence scoring mechanism. At the validation workshop and through the pre-deployment pilot, this requirement was reiterated in light of the complexity of MSHT in conflict. Options that the project team considered included:

- a) Allowing the user to mark the question as requiring a Request for Information (RFI);
- b) Allowing the user to mark the question as requiring an RFI, while still selecting the most suitable answer option;
- c) Using the answer ‘Insufficient intelligence’ to account for the confidence function.

In light of the earlier decision not to integrate the risk assessment tool with military/defence intelligence processes, the project team decided to implement option (c) above. This answer option is given the same scoring as the high-risk ‘Yes’ option, following the logic that a lack of intelligence about a particular issue inevitably raises the level of underlying uncertainty.

4.3 (Re-)Conceptualising ‘impact’

One of the key challenges in developing the risk assessment was conceptualising the impact dimension of risk. The initial approach had been to devise an impact-related question set in the same manner as the likelihood-related question set. However, it became clear that it would not be possible within the scope of the project to generate the kinds of questions that would capture the causal mechanisms or pathways by which MSHT is translated into definable impacts.

Strategic	Corporate strategy, strategic partnerships, commercial partnerships, and transformation
Operational (Business)	Service personnel, civilian personnel, reputation, logistics, programme and infrastructure
Military capability/outputs	Manpower, equipment, training, sustainability, cyber and logistics
Financial	
Safety	
UK Table 3.1 – Risk categories	

Figure 4: Example of risk categories listed in the UK national element contribution to NATO AJP-3.14 ‘Allied Joint Doctrine for Force Protection’, April 2015

To bridge the gap between the types of issue-non-specific risks that the military is concerned about – including strategic, operational and tactical risks (see Figure 4 above) – and the ways in which MSHT manifests in conflict situations, it was decided to use an ‘impact table’ (see Figure 5 below). This is a framework for assessing the severity of impact across different impact categories. The table adopted for Project Solebay includes certain impacts that the stakeholders already use – e.g. ‘Life’, ‘Performance/Mission’, ‘Financial’, ‘Reputation’ – but is supplemented with categories derived from the project team’s research into MSHT and human security, namely ‘Mental Health, Wellbeing and Morale’, and ‘Human Security’. During the workshop, the idea of using the impact table was very well-received for precisely the reasons mentioned above. The use of this table to structure the user’s consideration of the impact of MSHT emerged just prior to the validation workshop through an exchange with Major Leon Marshall, 40 Commando Royal Marines.

Readers should note that this table is only indicative of the grading of impacts and risks in a military operation. The actual quantitative and qualitative measures within the table (i.e. the boundaries for each category) would be determined by the mission commander’s risk appetite.

MSHT Impact Table					
IMPACT	Very Low (1)	Low (2)	Medium (3)	High (4)	Very High (5)
Life and Physical Health	Single minor injury or casualty	Single serious injury, or casualty	Single major injury, disease or multiple serious injuries or casualties	Multiple major casualties or disease	Fatality
Mental Health, Wellbeing, Morale	Rare or no psychological impact	A few cases of psychological impact	Some major psychological impact or multiple minor psychological impacts	Multiple major psychological impacts	Numerous soldiers unable to perform duties
Performance / Mission (Operational Impact)	Deliverable - no impact	Deliverable - minor impact	Moderate impact on delivery - This can include having to moderately perform/deliver differently than planned.	Significant impact on delivery - This can include having to significantly perform/deliver differently than planned	Critical impact, including mission lost - This can include having to critically perform/deliver differently than planned.
Financial	<£1k cost impact	<£10k cost impact	<£50k cost impact	<£450k cost impact	£450k+ cost impact
Legal	No breach of Legislation (International or Home)	Minor breach of Legislation (International or Home)	Medium breach of Legislation (International or Home)	Serious breach of Legislation (International or Home) but it can be mitigated or justified	Serious breach of Legislation (International or Home) that cannot easily be mitigated or justified
Reputational / Political	Internal interest only	Ministerial interest	Local media interest	Short Term Media Interest (Local, Home, International)	Enduring Media Interest (Local, Home, International)
Human Security	Negligible impact	Small number of injuries or livelihoods lost	Single loss of life, or multiple livelihoods lost	Multiple loss of lives, or multiple livelihoods lost with significant long-term consequences	Widespread loss of civilian lives or livelihoods, or serious long-term generational consequences

Figure 5: MSHT Impact Table

4.4 Question prompts

As illustrated earlier, discussions with the MOD had pointed us towards the military’s use of the Intelligence Collection Plan (ICP) as a supporting tool. In order to enable quick uptake by the userbase, the project team had considered developing an ICP tailored for the risk tool. Ultimately, it was decided against using this approach because engaging in the development of what is an integral component of the intelligence cycle was beyond the scope of the project. However, the team decided to take the ICP as inspiration for allocating various ‘prompts’ to each question. For instance, the prompts for the question “Do any groups appear to include, or otherwise rely on, the use of child soldiers for operational sustainment?” include:

- “*Within armed groups’ media or discourse, are there references to children or the next generation of fighters (e.g. portrayal of children at training camps, use of phrases like “cubs of the caliphate”)?*”
- “*Are armed groups targeting schools to recruit children?*”
- “*Are there any reports of armed groups making payments to families to recruit their children?*”

4.5 Additional user input fields

Beyond the question and answer sets, some user input fields were created to capture meta-data for each individual assessment to allow longitudinal study of multiple assessments over time. These include:

- Date
- Name
- Rank
- Job title
- Unit
- Target Location
- Defence activity
- Is this assessment being conducted Prior to or During military activity?

Additionally, the project team wanted to capture, across time, whether users’ pre-existing professional judgement-based perception of the overall risk of MSHT matched their results that were subsequently produced through completing the risk assessment. As such, the question below was included on the ‘User Profile’ setup page within the assessment:

- “*In your professional judgement, what do you think is the overall risk of MSHT to the provision and sustainment of human security in this location?*”

This question has two answer options – ‘High’ and ‘Low’ – and is followed by a free-text box which allows the user to capture, qualitatively, the reasons for their answer. The question is not used for scoring purposes: the answer given does not affect the risk scoring within the assessment but is intended to help gather the nuances about users’ perceptions of risk and, in the long-term, to facilitate algorithmic training and development.

4.6 Threats, vulnerabilities and risk assessment

This section discusses the most significant change to the design and format of the assessment that emerged during the course of the project. Through the gathering and refinement of MOD user requirements, the project team opted to divide the risk assessment into two components: a threat/vulnerability assessment; and a scenario-based risk assessment. This section explains the rationale behind this decision in greater detail.

4.6.1 Modern slavery and human trafficking: a ‘complex’ risk

Determining which chain of events or which combination of factors has a causal effect on the likelihood of a particular risk scenario is not possible given the lack of sufficiently large and sufficiently granular data. This has a significant effect on developing a risk assessment. In a white paper on *Risk Governance: Towards and Integrative Approach*, Renn explains that risks

can be classified most usefully in terms of the level of knowledge that can be obtained about them. Thus, classifying risks is ‘not related to the intrinsic characteristics of hazards or risks themselves but to the *state and quality of knowledge available* about both hazards and risks.’³⁵ Based on this level of knowledge, risks can range from the simple to the complex. As Renn explains, this notion of complexity:

‘refers to the difficulty of identifying and quantifying causal links between a multitude of potential causal agents and specific observed effects. The nature of this difficulty may be traced back to interactive effects among these agents (synergism and antagonisms), long delay periods between cause and effect, inter-individual variation, intervening variables, and others.’³⁶

In the context of Project Solebay, the risks related to MSHT are undeniably located on the complex end of the spectrum, which has implications for the extent to which any eventual risk can be inferred causally from preceding events or hazards, or from the combination of contextual factors and drivers. As Quigley *et al* explain in their discussion of conceptual frameworks for supply chain protection, ‘[w]hereas simple risks are associated with phenomena that are relatively frequent with fairly well understood causal links, extending these rational quantitative methods can become increasingly unreliable as the risk situation becomes more complex.’³⁷ Moreover, ‘each cause and effect relationship in the complex system is typically inferred assuming prompt linear reactions, and yet many systems are characterized by non-linear interactions and delayed feedback.’³⁸ MSHT, especially in conflict, undoubtedly constitutes such a system.

4.6.2 Risk scenarios

As discussed in Chapter 2, during the validation workshop participants emphasised the requirement to understand what the output of the risk assessment means in practice. After deciding to use the impact table discussed earlier, it was realised that attempting to assess the impact of forced labour *per se*, or of child soldiers *per se*, or of sex slavery/trafficking *per se*, made less practical or conceptual sense. One cannot meaningfully assess the impact of something occurring without knowing the nature of the occurrence with sufficient specificity. Thus, the question ‘what is the impact of child soldiers’ is meaningless in the absence of additional knowledge about the particular ways in which the phenomena (recruitment and use of child soldiers) is or might be manifesting. It is likely to be the case that impact is context specific to be established following deployment.

The solution culminated in devising a number of risk scenarios (or ‘vignettes’) that would represent, with sufficient uniqueness and military relevance, the ways in which each type of MSHT might manifest in conflict and crisis situations in a manner that readily undermines the establishment and sustainment of human security. The risk scenarios were based on a combination of historical examples (e.g. the kidnapping of British soldiers by the West Side Boys militia in Sierra Leone), relevant risk areas (e.g. forced labour and supply chain risk), and brainstorming within the project team.

³⁵ Renn, O. (2006) *Risk Governance: Towards an Integrative Approach*. [Online] http://www.irgc.org/wp-content/uploads/2012/04/IRGC_WP_No_1_Risk_Governance_reprinted_version_3.pdf, p.29

³⁶ Ibid, pp. 29-30

³⁷ Quigley et al (2015) *Conceptual/Contextual Framework for Critical Infrastructure Protection Supply Chain Issues* [Online] http://cradpdf.drdc-rddc.gc.ca/PDFS/unc193/p802230_A1b.pdf, p.29

³⁸ Ibid.

This reflects the fact that the development of a risk assessment contains a strong element of creative thinking. Indeed, one might argue that creativity and vision play an essential role not only in the fundamental conceptualisation of what can potentially constitute ‘risk’ in a given temporal-spatial environment, but also in the identification of the range of plausible risks in that specific context. On this point, Renn writes:

‘Risks... are not real phenomena but originate in the human mind. Actors, however, creatively arrange and reassemble signals that they get from the ‘real world’ providing structure and guidance to an ongoing process of reality enactment... The link between risk as a mental concept and reality is forged through the experience of actual harm (the consequence of risk) in the sense that human lives are lost, health impacts can be observed, the environment is damaged or buildings collapse... Humans have the ability to design different futures, i.e. construct scenarios that serve as tools for the human mind to anticipate consequences in advance and change, within constraints of nature and culture, the course of actions accordingly.’³⁹

4.6.3 *Threat and vulnerability assessment*

According to JSP 1325, published by the MOD in January 2019, ‘77th Brigade [British Army] is to be supported and appointed as the Defence coordinating authority for the support to the delivery of Human Security Operational Outputs’.⁴⁰ Reflecting this development, in parallel with on-going discussions between the Project Solebay team and the MOD, the requirement that emerged was for the risk assessment tool to enable a stronger understanding of the *threats* posed by MSHT to human security, and the *vulnerabilities* of local populations to MSHT. The changed user requirements thus altered the format and structure of the risk assessment. While the *risk* assessment functionality would be retained, the MOD representatives requirement for a clearer picture of threats and vulnerabilities resulted in the division of the tool into two components: a threat/vulnerability assessment, and a scenario-based risk assessment.

Therefore, the likelihood questions originally devised were now grouped under either ‘Threats’ or ‘Vulnerabilities’. The term *threat* means ‘anything that might exploit a vulnerability’; it refers to ‘the source and means of a particular type of attack.’⁴¹ Threats can be natural occurrences, or hazards, or they can be manifested intentionally by a *threat agent*. As Rausand writes, a threat agent is a ‘person or a thing that acts, or has the power to act, to cause, carry, transmit, or support a threat.’⁴² To reiterate, through engagements with the MOD the requirement that emerged was to enable a greater understanding of these threats and threat agents, such that the military might develop a picture of the *who, what, where, when, and how* aspects of the MSHT threat. As Rausand writes in traditional risk parlance: ‘When analyzing security risk, it is fundamental to identify *who* could want to exploit the assets of a system, and *how* they might use them against the system.’⁴³ In the context of MSHT, examples of threats include the activities of armed groups in conflict situations, or the behaviours of host nation security forces.

³⁹ Renn (2006) p. 23

⁴⁰ MOD (2019) *JSP 1325: Human Security in Military Operations* [Online].

<https://www.gov.uk/government/publications/human-security-in-military-operations-jsp-1325> p. 12.

⁴¹ Rausand, M. (2011) *Risk Assessment: Theory, Methods, and Applications*. New Jersey, US: John Wiley & Sons, Inc., p.62

⁴² Ibid.

⁴³ Ibid.

Vulnerabilities, on the other hand, refer to inherent weaknesses in a one or more potential victims, systems or assets that can be exploited by a threat agent, or which otherwise expose the system or asset to being damaged by a threat. For the project, vulnerabilities were interpreted as being features intrinsic to the victim, their behaviours, or their environment (social, political, economic and physical – see the discussion in Chapter 3 on risk factors), which by their very nature expose the victim to exploitation by a potential MSHT threat. The engagements between Trilateral and the MOD have proven invaluable (for both parties) in identifying and understanding these emerging user requirements.

4.7 Risk assessment workflow

Prior to the project team’s decision to evolve from using likelihood questions to threat/vulnerability questions, the logic for the use of the risk scenarios within the assessment was as follows:

- The user answers a number of **likelihood**-related questions;
- The user is presented with several pre-defined **risk scenarios** and is asked to assess the anticipated impact of each scenario;
- The user enters their **impact** scores into the **impact table**;
- The risk assessment multiplies the **automatically-generated likelihood** score with the **user-generated impact** score to produce a **risk score**.

However, with the evolution towards the threat/vulnerability question sets, the decision was also made to move away from attempting to establish a deterministic connection between those questions and the scoring of the risk scenarios. This also allows the user to draw upon their nuanced understanding of the environment under consideration, including the specifics of the military’s presence, force posture, and mission objectives. By severing the deterministic connection between the threat/vulnerability questions and the assessment of the risk scenarios, the risk assessment tool evolved to contain two components which served separate but complimentary functions. First, a tool to enable the capturing, understanding and assessment of MSHT threats and vulnerabilities in a given area. Second, a scenario-based risk assessment tool to enable assessment of MSHT-related risks. While there would still be value in using the tools in isolation – the first for *understanding the environment*, and the second for *assessing risks* – the process of using the two tools together would now be as follows:

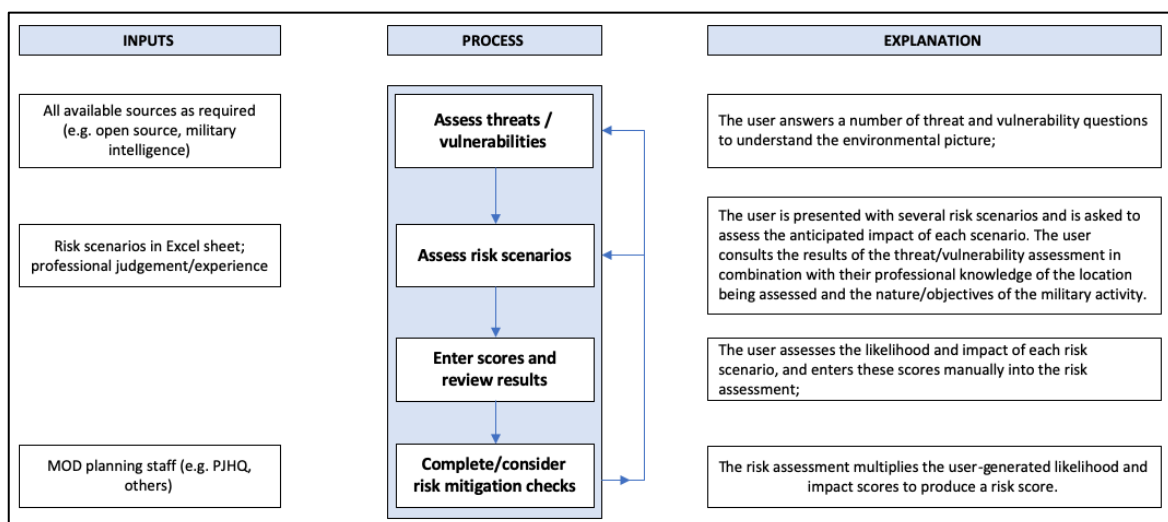


Figure 6: Risk assessment workflow

5 Use of the risk assessment in STRIAD

The project team used co-design and co-creation processes while working with colleagues in the MOD to conduct a preliminary pilot of the risk assessment tool within Trilateral's cloud-based platform for data-driven risk identification and risk assessment, STRIAD (Strategic and Tactical Risk Identification and Assessment for Data-driven decision making). The pilot was necessary for going beyond the use of Microsoft Excel and ensuring a long-term assessment of risk. Carrying out a risk assessment on STRIAD has several benefits including enhanced security, the potential (in the future) to perform machine learning models for risk identification based on the collection of risk data, scalability, efficient big data storage, enhanced progress tracking, just to mention a few. Accordingly, this section provides an overview of the STRIAD platform in the context of the MSHT risk assessment tool developed in Project Solebay, discussing both the platform for hosting the risk assessment and the interactive dashboards that help in complementing the risk assessment.

5.1 STRIAD platform for MSHT risk assessment

Trilateral's STRIAD platform provides the technological infrastructure for the MSHT risk assessment developed within Project Solebay. The platform allows a user to administer the risk assessment questionnaire, distribute it across a wide range of users, store the answers to the risk assessment questions as well as analyse the risk assessment results over time. Furthermore, STRIAD's user friendly interface represents an improvement over existing Excel-based risk assessment. Moreover, STRIAD's cloud-based architecture built on Amazon Web Services (AWS) permits users to securely store and access risk assessment data regardless of their geographical location. Three key features of the STRIAD platform will be discussed here: (i) the platform's ability to create and assign multiple risk assessments to multiple users simultaneously; (ii) its ability to analyse and track risk assessment results over time; and (iii) its user-friendly interface. The development of these features was aided by a continued collaboration with representatives of the MOD through which the risk assessment was piloted in a real-world setting (see Chapter 5.3).

Figure 7 below shows STRIAD's functionality allowing users to create and customise risk assessments. Through this, users can create the title of their risk assessment, the topics making up the questionnaire, the questions, answers and the topic-based scoring function. Through the side navigation bar on the right, users can create a new project, access the assessments linked to the project, and share these with other users.

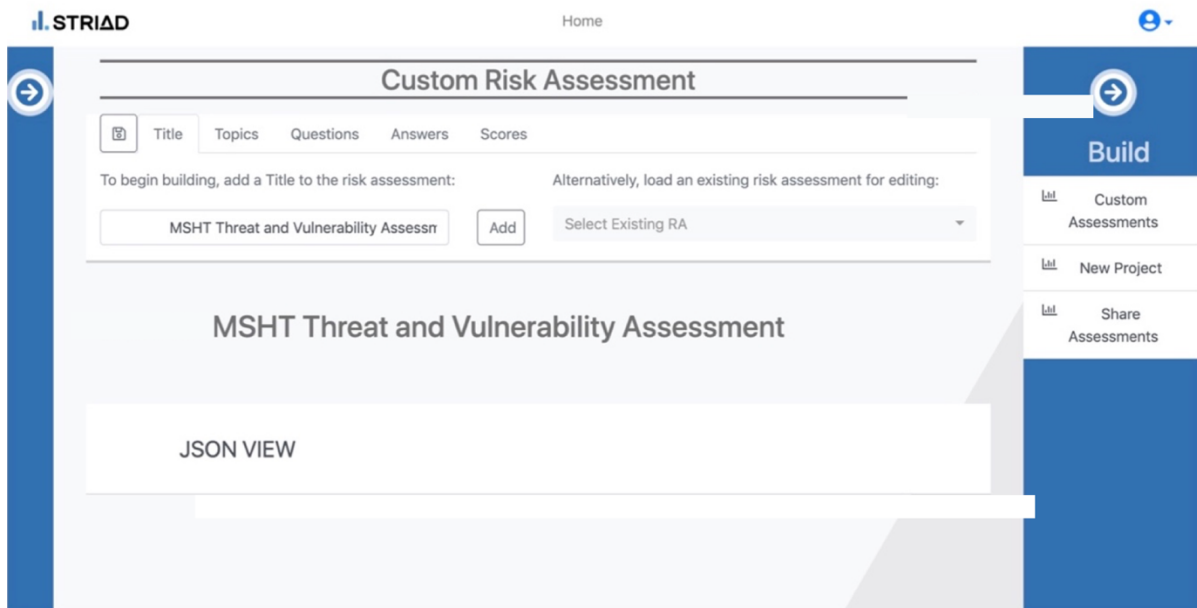


Figure 7: Creating a custom risk assessment in STRIAD

Figure 8 below demonstrates STRIAD’s capability to assign multiple risk assessments to multiple users simultaneously. The first column, *Name*, shows the name of the risk assessment; the second column, *User*, displays the user each risk assessment was assigned to; the third column displays the level of completion of each risk assessment. This improves the way risk assessments are administered and assigned within the UK military. STRIAD, in fact, enables users to assign different components of the same risk assessment to different users. For instance, the intelligence-gathering component of a risk assessment and the scenario-based component of the same risk assessment could be assigned to two different end-users simultaneously, according to their subject matter expertise. Furthermore, STRIAD can assign the same item of the risk assessment to multiple users and provide measures of central tendencies, e.g. mean, median, mode, as well as spread, e.g. standard deviation, accounting for any discrepancies in the responses (see Figure 11).

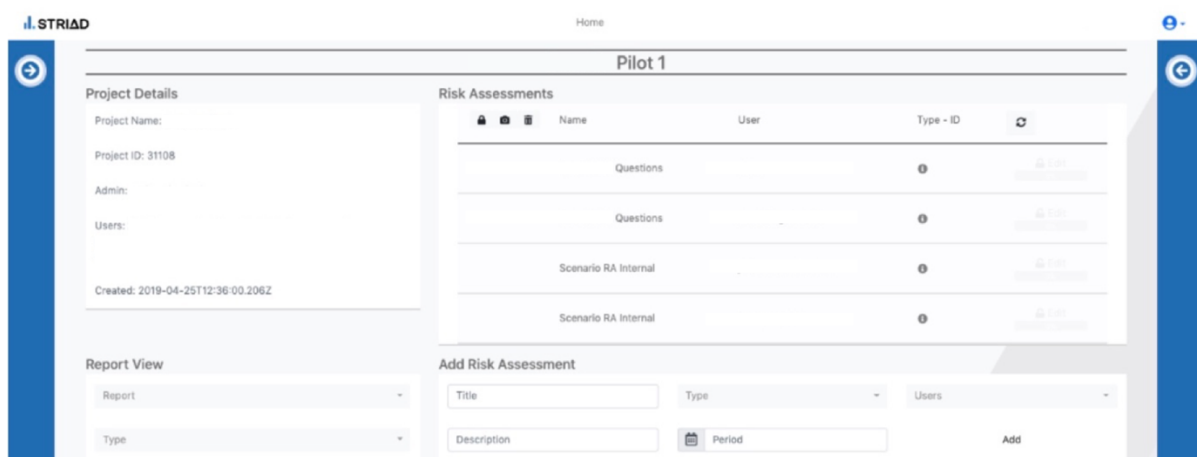


Figure 8: Assigning risk assessments in STRIAD

Figure 9 shows the interface of STRIAD. Users can save their risk assessment answers clicking on the save button on the top right corner. Furthermore, the text box below each question provides users with an opportunity to input further information or highlight knowledge gaps.

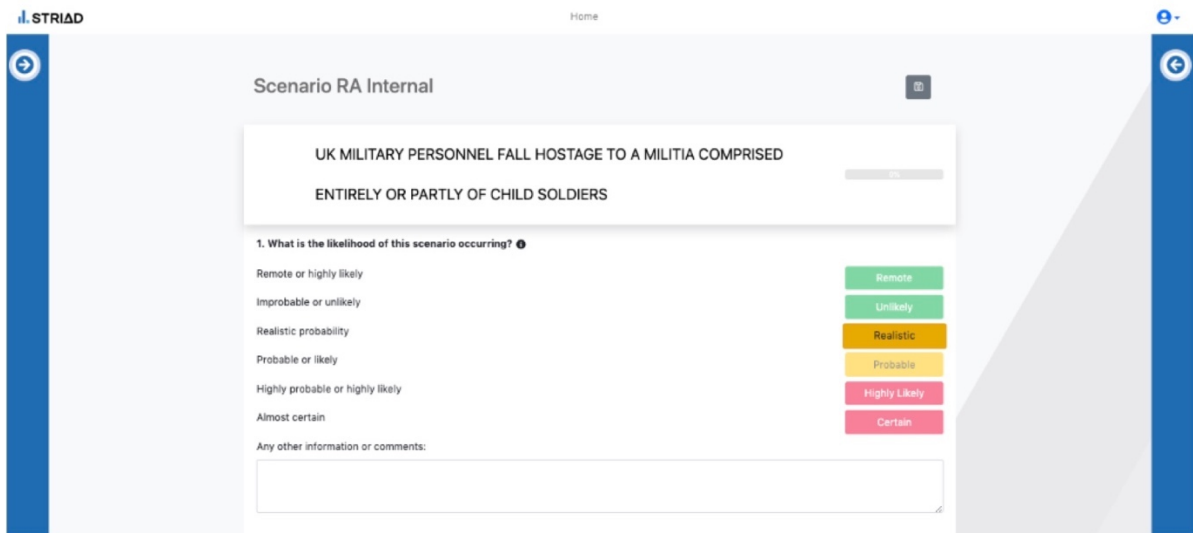


Figure 9: Completing a risk assessment question set in STRIAD

Figure 10 shows the completion level as well as the risk score for each of the three topics making up an assessment questionnaire. A high topic score indicates a high risk of MSHT.

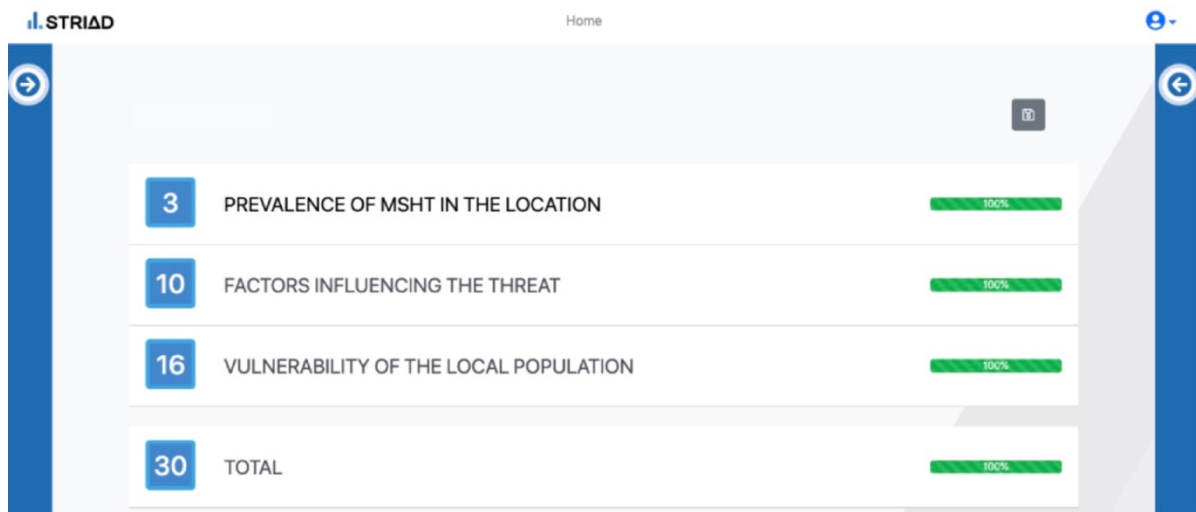


Figure 10: Topic scores in STRIAD

Below, Figure 11 shows how risk assessment results can be visualised and analysed within STRIAD. The stacked bar chart on display shows how different users responded to the same questions. This comparison between users has the potential to highlight systematic bias in the answers, paving the way for the improvement of the questionnaire.

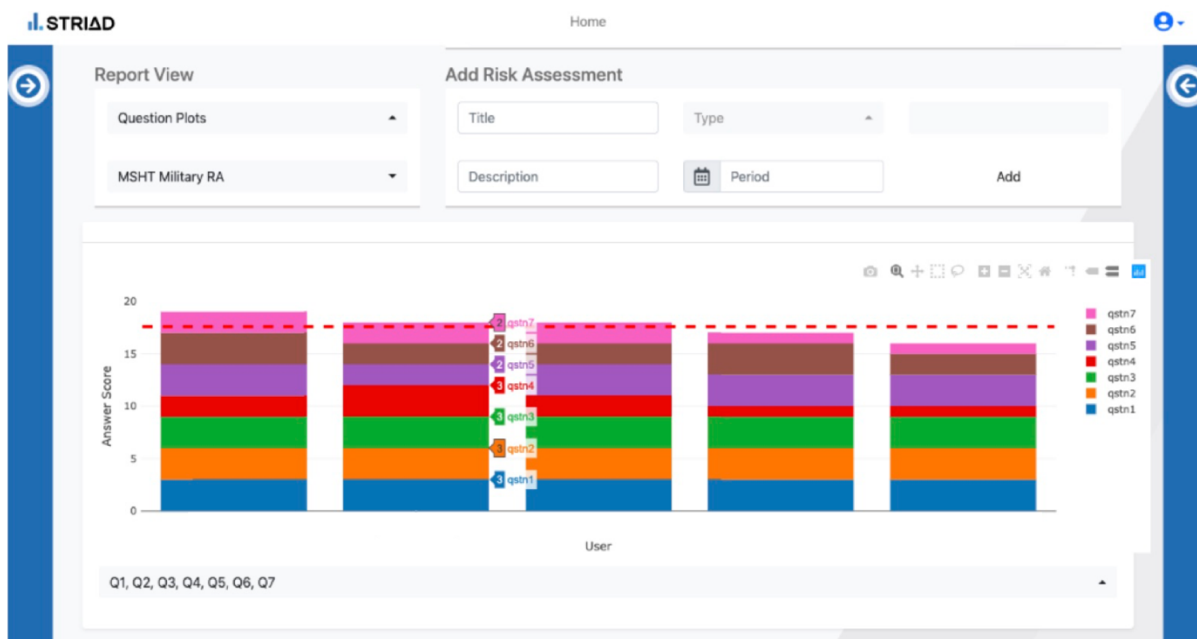


Figure 11: Risk assessment results in STRIAD

Furthermore, the results page (Figure 11) allows users to compare the results of different risk assessments for the same deployment across time. Risk assessment results, synthesised by the bar chart above, can be downloaded as a PDF and shared across personnel with a time-reference, e.g. the date the risk assessment was taken. This allows analysts to compare and contrast results across time.

5.2 Interactive dashboards complementing the risk assessment

In addition to providing the technical infrastructure for the MSHT risk assessment, Trilateral’s interdisciplinary team contributed to Project Solebay by developing cloud-based interactive dashboards displaying global as well as country-specific data visualisations related to MSHT. These are hosted in STRIAD. As an operating principle, the dashboards were created using open data rather than more confidential military sources. With the appropriate security measures in place, it would be possible to incorporate confidential data.

5.2.1 Global MSHT dashboards

Global MSHT dashboards offer data-driven insights to the MSHT risk assessment tool by displaying both the factors that were identified to be correlated with MSHT in conflict zones and the global prevalence of MSHT. Furthermore, these dashboards can be used to support users in answering the risk assessment questions in order to evaluate the risk of MSHT.

The bar chart dashboard in Figure 12 (below) shows fifteen factors associated with the risk of MSHT in conflict zones, e.g. gender inequality, corruption, extreme poverty, education, youth unemployment, amenable deaths, group grievances, etc. (see Chapter 3). The user can select the country of interest from a drop-down menu and visualise country-level information about these factors. Each country is ranked across the fifteen factors: the higher a country’s risk level in a given dimension, i.e., gender inequality, the higher will be its ranking and the value of the bar representing that dimension.

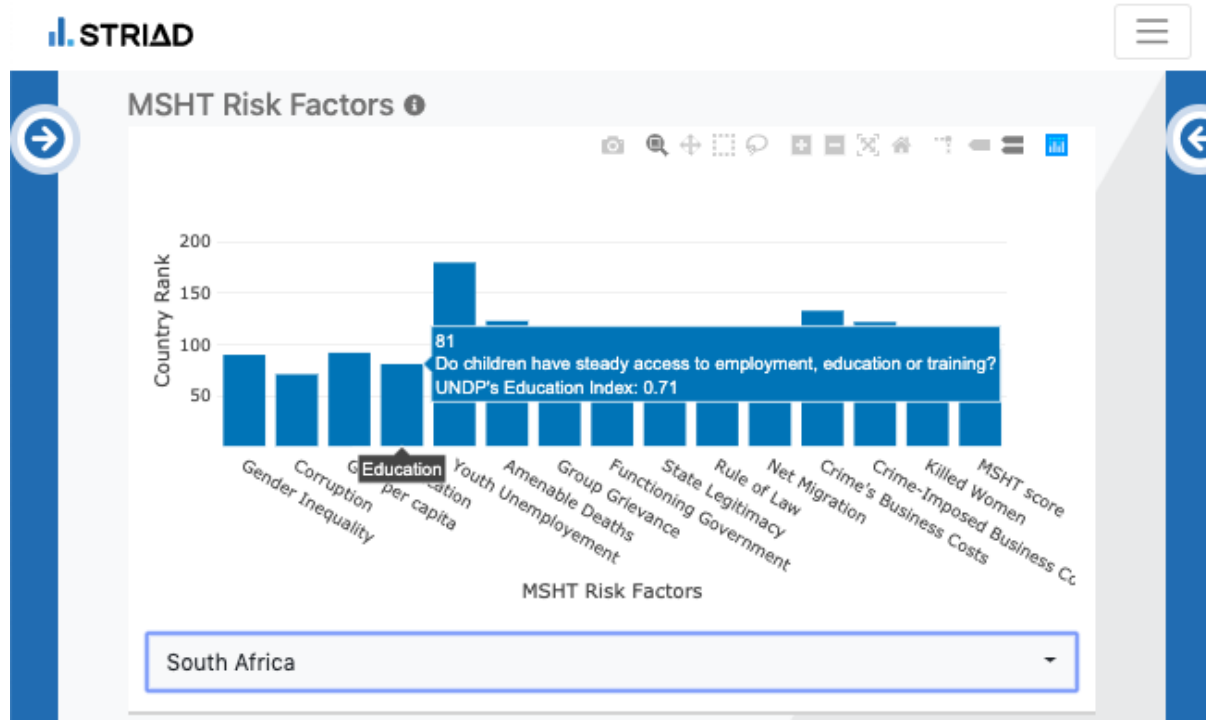


Figure 12: Risk factors dashboard in STRIAD

This bar chart displays MSHT risk factors in South Africa. Youth unemployment appears in this instance to be a high-risk factor, with other dimensions such as gender inequality, corruption, extreme poverty, education, etc., posing a comparatively lower risk. However, taken together the factors can allude to the prevalence of MSHT, particularly amongst the young. Country ranking allows for within-country as well as between-country comparison. It is possible to see, for instance, whether gender inequality constitutes a higher risk to MSHT than corruption within a country, as well as whether this represents a higher risk in country A than in country B. By hovering over the bars, the user can visualise the raw data used to calculate the ranking, obtain information on the data used, and visualise the risk assessment question to which the data relates.

The world map dashboard (Figure 13, below) helps visualise MSHT global data. The user can select various data sources to build the map from a drop-down menu: the options currently available include the Global Report on Trafficking in Person (UNODC 2016) data as well as an overall MSHT risk indicator (displayed above). Green indicates low MSHT risk, red indicates high MSHT risk, and grey indicates missing data.

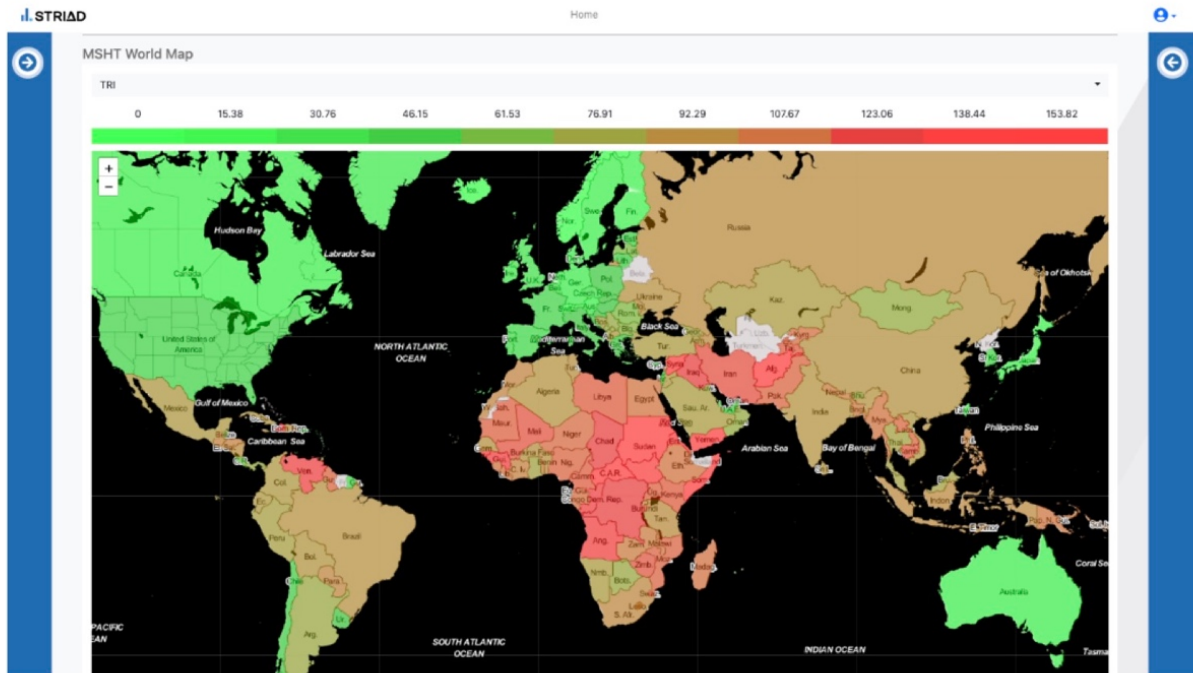


Figure 13: World map dashboard in STRIAD

The map allows users to appreciate the complexities linked to counting MSHT victims globally and assess the risk of MSHT. UNODC data relies on country-recorded victims of slavery and is thus heavily biased towards countries which have anti-slavery legislations in place. The overall MSHT risk indicator displayed above is skewed towards countries for which data is available. This dashboard shows how competing epistemologies in accounting for MSHT risk factors translate into different sources of bias. This is rendered evident by the change in the colour coding of the map when users select different options from the dropdown menu. All in all, these dashboards allow the users to assess and mitigate the risks of MSHT: the country-wide data displayed, in particular, suggests the STRIAD tool is of use to strategic analysis.

5.2.2 Country-specific MSHT dashboards

Concerning the country-specific MSHT dashboards, the project team built two drilldown dashboards on Kenya and Somalia. Kenya was chosen as the UK military has a training facility there, the British Army Training Unit Kenya (BATUK). Somalia was chosen because research suggests a great deal of factors contribute to MSHT in this country, therefore by focussing on this country the project team was able to test whether the dashboards captured these factors. This choice was also the result of interactions with end-users as well as the DSTL Technical Partner, in line with the agile development approach characterising Project Solebay. Country-specific MSHT dashboards provide granular information which is important for on-the-ground planning for human security activities. The feedback demonstrated that this detailed sub-national view provides the most value. Below are examples of these country-specific dashboards.

This bar chart dashboard in Figure 14, below, displays answers to a 2015 survey on Human Trafficking in Kenya, used for the *Human Trafficking in Kenya* report (Kenyan National Crime Research Centre 2015). The survey asked MSHT-related question to known MSHT victims and key informants. The dropdown menu allows users to select various survey items, e.g. the

gender of victims of MSHT, the reasons for voluntary MSHT, the coping mechanism of MSHT victims, etc. The chart above shows the external destination of Kenya MSHT victims: Middle East and Africa appear to be the most common destinations of trafficking victims from Kenya. Although the survey on which this chart is based is not nationally representative, the chart provides valuable insights on MSHT victims in Kenya to UK military personnel, allowing them to build a clear MSHT victim profile and thus support human security activities.

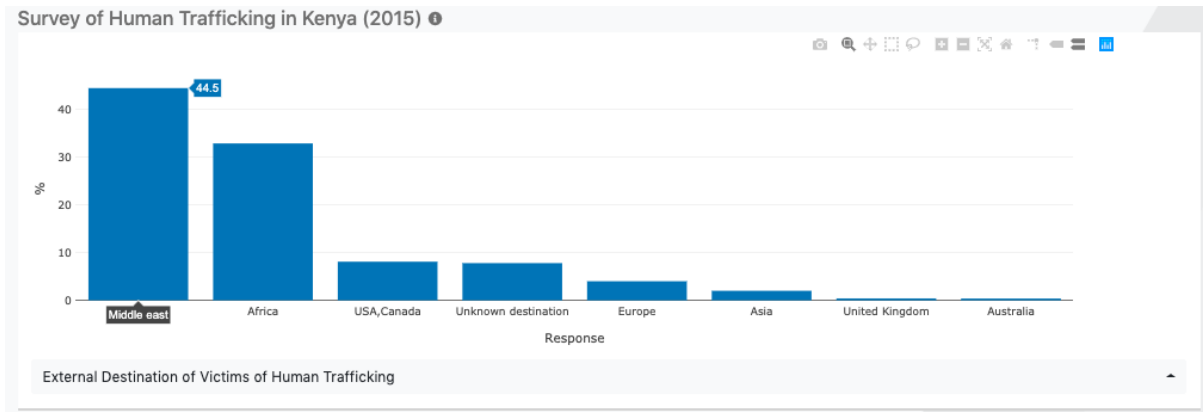


Figure 14: Country-level dashboard in STRIAD, showing destination countries for victims of trafficking in Kenya

The bar chart dashboard below, in Figure 15, shows the total number of victims of violent conflicts in Kenya between 1989 and 2017. The data used to build this plot was extracted from the Uppsala Conflict Database Project (UCDP) Georeferenced Event Dataset (GED) version 18.1 (Mihai and Sundberg 2017). From the dropdown menu, users can select the total number of violent events in Kenya between 1989 and 2017. The data shows a spike in number of victims of violent conflict in 1993, as a result of the ethnic clashes following the country's first multi-party election in 1992.

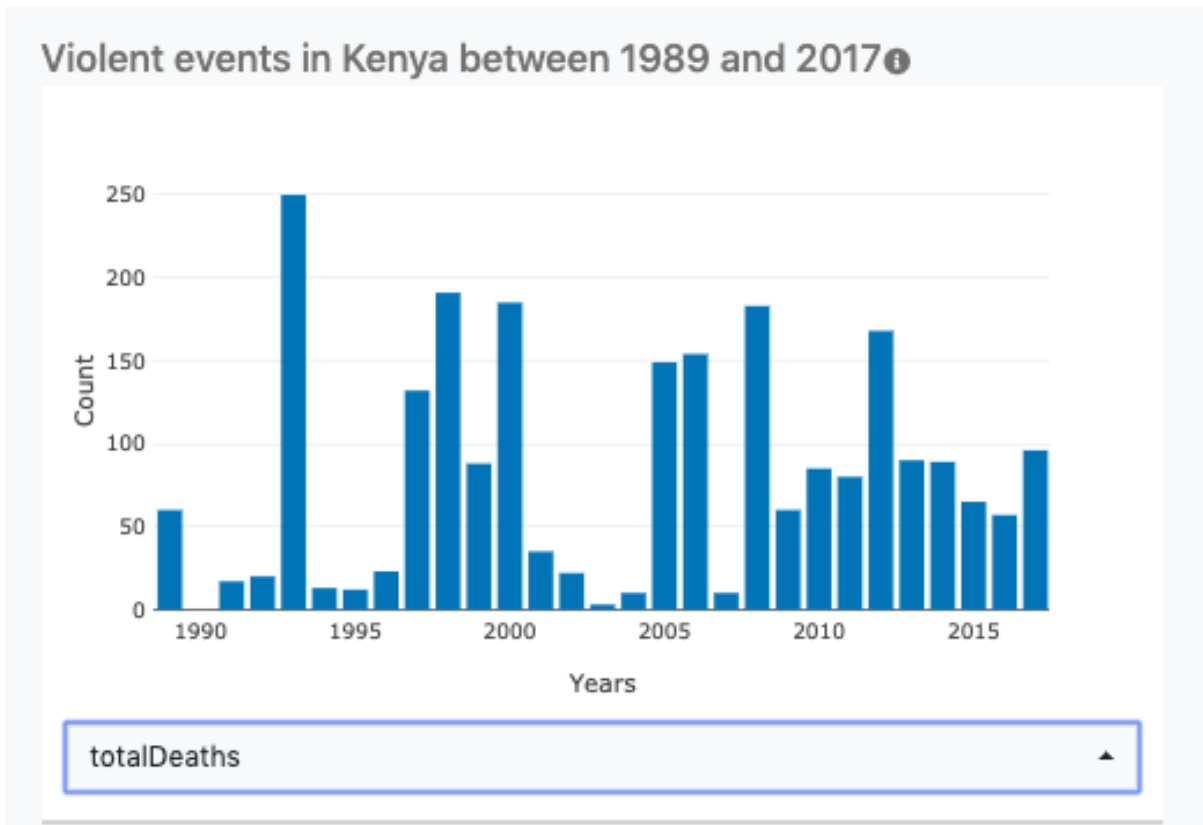


Figure 15: Country-level bar chart, showing total number of violent deaths in Kenya 1989-2017

With regards to Somalia, the bar chart dashboard below (Figure 16), which was built using UNHCR data (2017), shows a regional breakdown of the demographics of the UNHCR persons of concern residing in Somalia in 2017. A person of concern is any person considered a refugee, an internally displaced person (IDP), an asylum-seeker, or a stateless person, with some additional persons not fitting these criteria. Users can select the Somali regions of interest from the dropdown menu. The bar chart above shows the demographics of persons of concern residing in the Shabelle Dhexe, Juba Dhexe, Bay, Bakool and Awdal regions. The three most at-risk demographics in the five regions appear to be female aged 18-59, and male aged 5-11 and 18-59. Bay seems to be the region characterised by the highest number of persons of concern among the five regions.

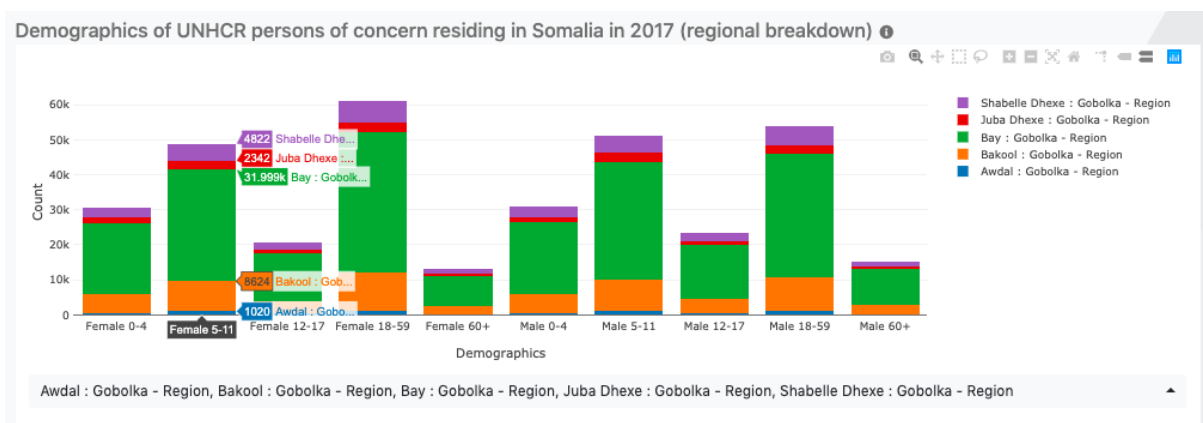


Figure 16: Country-level bar chart showing persons of concern residing in Somalia

The bar chart dashboards in Figure 17 show the destination countries of persons of concern originating from Somalia between 1980 and 2017 (UNHCR 2017) as well as the number of violent events in Somalia between 1989 and 2017 (Mihai and Sundberg 2017). To access the first bar chart, users can select destination countries from the drop-down menu. The bar chart displays the distribution of Somali persons of concern in three countries, namely Zambia, Italy and the UK. The UK appears to have welcomed the highest number of Somali persons of concern among the three countries selected, followed by Italy and Zambia. The second bar chart indicates that, the number of violent events in Somalia appears to have peaked between 2005 and 2017.

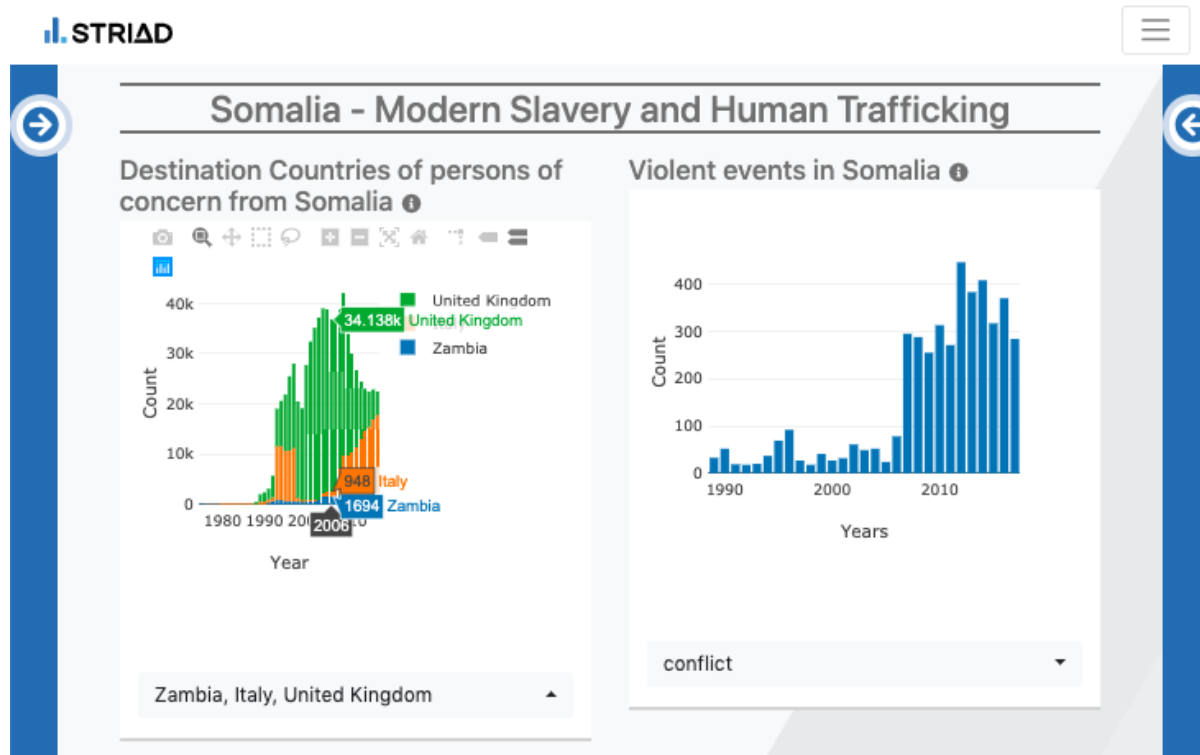


Figure 17: Country-level dashboards for Somalia, showing destination countries and violent events for comparison

All the datasets used to build the dashboards are publicly available as open data, and a link to their sources is provided by the STRIAD platform. This allows users to access the raw data as well as base their decision making on a common set of data sources, rendering the way risk is measured more consistent across time. This data is taken from reputable sources, e.g. nationally or internationally recognised organisations committed to eradicate one or more forms of MSHT (see Annex 2).

The country-specific dashboards represent a very useful tool for the UK military as they allow for on the ground planning, potentially promoting evidence-based resource allocation and improving on-the-ground human security. The potential for sub-country analysis displayed here highlights how the tool could be used in tactical operations.

Furthermore, global MSHT dashboards are valuable additions to MSHT risk assessment as they aid users to visualise insights and combine intelligence-based and data-driven information, which is crucial to the evaluation of the risk of MSHT. Overall, STRIAD's dashboards offer valuable data-driven insights, supporting the UK military's response to MSHT. Some of the dashboards, for instance, show change in MSHT-related landscape within a country over time,

displaying trends and variations (see Figure 12 and 14). The multiple foci of the dashboards, shedding light on the global as well as the national and sub-national slavery landscape, highlight the multifaceted nature and intricacy of these crimes, helping military personnel to make more informed decisions.

5.3 Pilot evaluation and adjustments

In line with the agile development approach undertaken throughout Project Solebay, the MSHT risk assessment and the interactive dashboards were evaluated through a pilot, using a set of Key Performance Indicators (KPIs) to monitor progress, including, the relevance of risk assessment questions, the usefulness of all insights, the stability of STRIAD (see Section Chapter 5.3.1 below for more details on the KPIs, and Annex 8.4 for the feedback questionnaire). This allowed for an iterative development process of STRIAD, in which, following the pilot's feedback, adjustments were made.

The tools were piloted in the context of the pre-deployment of an MOD advisor to advise, assist and train partner forces overseas.

5.3.1 Pilot description

A pre-deployment pilot of the MSHT risk assessment and interactive dashboards supported by STRIAD was conducted. The objectives of the pilot were to evaluate the risk assessment methodology, the STRIAD platform from a technical and usage perspective, as well as to determine the training requirements for using STRIAD in the future. The relevance of risk assessment questions, the usefulness of all insights, including the dashboards, and the usability and stability of STRIAD were used as KPIs. These KPIs were operationalised through several evaluation questions answered by MOD personnel following their piloting of STRIAD.

5.3.2 Pilot feedback and evaluation

Following the piloting of the tool, a set of open-ended and close-ended evaluation questions were posed to the users in order to collect their feedback and monitor progress towards meeting user requirements over time.⁴⁴

Considering the unique character of the risk assessment developed as part of Project Solebay, benchmarking it against pre-existing risk assessments would foster misleading conclusions. This is because no comparable risk assessment is currently available: other assessments do not focus specifically on MSHT. Hence, a longitudinal evaluation of the tool was deemed as the best solution. This was carried out asking closed-ended questions requiring users to assign a score between 1 and 5 to each of the risk assessment components, e.g., the instructions, the questions themselves, the dashboards complementing the risk assessment, etc. A score of 1 indicates low utility or appropriateness of the components; a score of 5 indicates high utility or appropriateness of the same. An average score ranging between 1 and 3 was expected for this initial pilot; a score ranging between 4 and 5 is expected for the Solebay Stage 2 pilots. Moreover, several open-ended questions were asked to extrapolate qualitative information concerning the risk assessment, e.g., the most valuable insight gained from completing the assessment. Some of the KPI results are discussed below. For a full list of KPIs and the

⁴⁴ A full human factors analysis was not included in the pilot evaluation due to time constraints. However, this is expected to feed into future piloting with Project Solebay Stage 2 (pending funding).

evaluation questions used to collect KPI data, see Annex 3. Before piloting the risk assessment, a briefing meeting was held. In this, valuable feedback was collected: the comment boxes after each risk assessment question displayed above were a direct result of this meeting.

The pre-deployment pilot enabled the project team to make preliminary adjustments to STRIAD. For instance, one user highlighted the low level of usability of the dashboards to answer the risk assessment questions due to the difficulty in navigating back and forth between the risk assessment page and the dashboard page (KPI evaluation question score: 1). As a result of this, side navigation bars such as that displayed in Figure 5 above were added in order to facilitate within-STRIAD navigation. Furthermore, users highlighted several positive aspects of their pilot experience: the high usability of STRIAD when filling in the risk assessment (KPI evaluation question score ranging between 4 and 5), the high relevance of the risk assessment questions in the military's preparation to face MSHT, and the clarity of the risk assessment instructions (KPI evaluation question scores were 4 or 5 in both cases). Also, the high-risk score of the MSHT risk assessments that were conducted for the pilot matched our data-driven insights as showed by the figure below. This shows the very high risk of slavery in the country of deployment across almost all the dimensions considered. If compared to figure 12 above, it is characterised by a much higher MSHT risk level than South Africa.

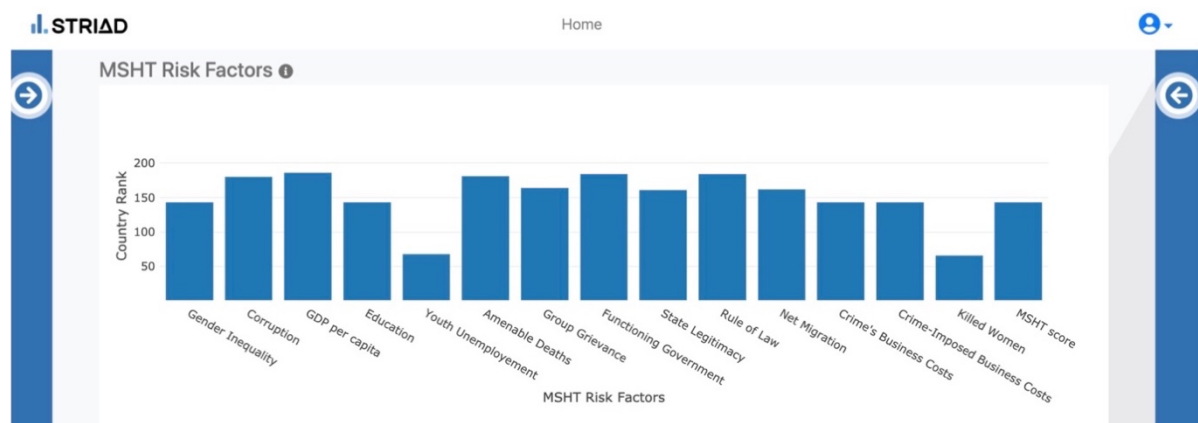


Figure 18: MSHT risk factors dashboard

The figure below shows the risk assessment results for the MOD pilot user and a Trilateral (TRI) user. In both cases, the overall risk scores appear to be very high, considering the maximum value on the y axis is 100. This on principle indicates convergence of the data-drive scores above and the users' scores below.

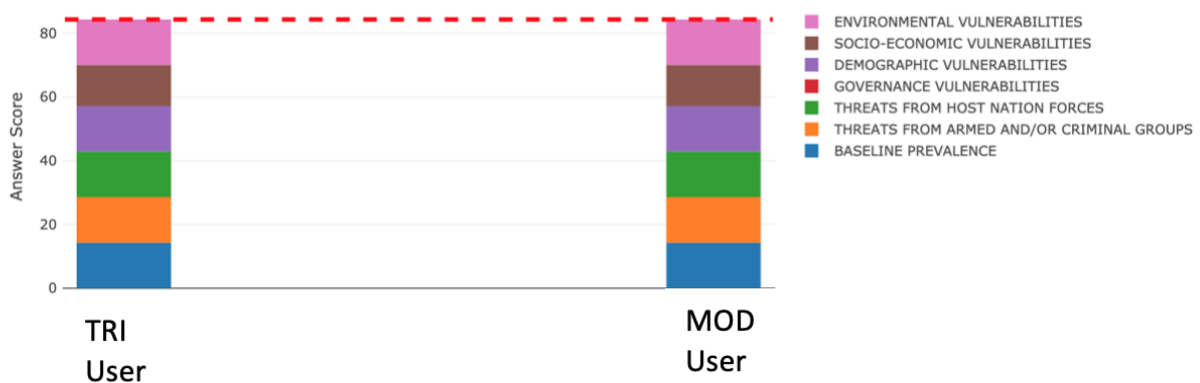


Figure 19: risk assessment scores by topic for TRI User and MOD User

Considering for instance Q17 of the risk assessment on the extent of corruption in the country, the figure below shows that both MOD and TRI users indicated this was a high-risk factor, in line with the second bar of the figure 18, *corruption*. Our MSHT risk factor dashboard showed in fact that the country was among the worst for corruption level among those considered.

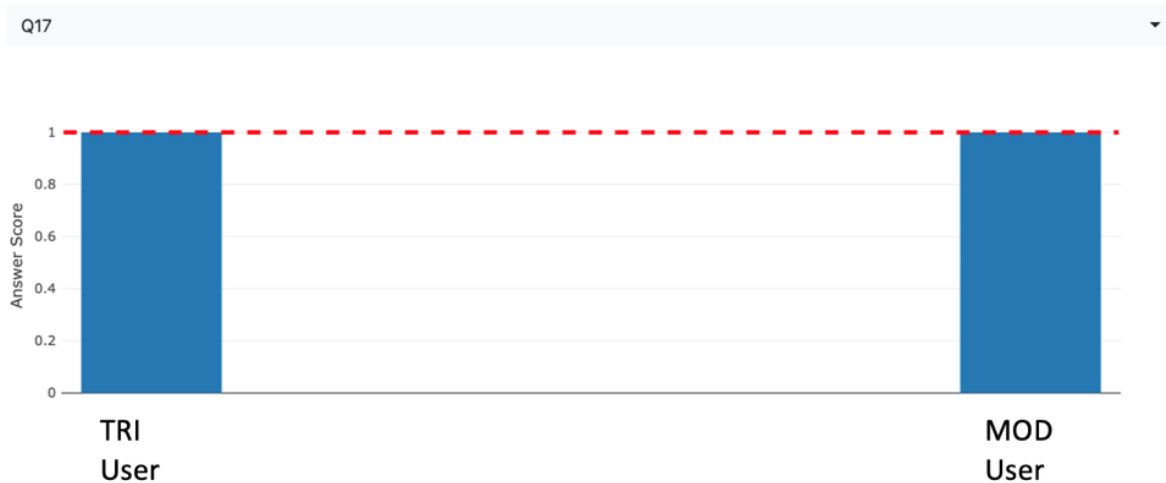


Figure 20: risk assessment scores for Q17 for TRI User and MOD User

Furthermore, the pilot risk assessment’s answers displayed below show agreement between the data-driven insights and the user’s answers to the risk assessment. Questions 18 and 20, on risk factors due to weak legislative systems and the opening of power vacuums respectively, were given high-risk scores (0 means high risk, 1 means low risk). This is in tune with the *functioning government* and *rule of law* high risk scores displayed on figure 18 above (eight and tenth bar respectively).

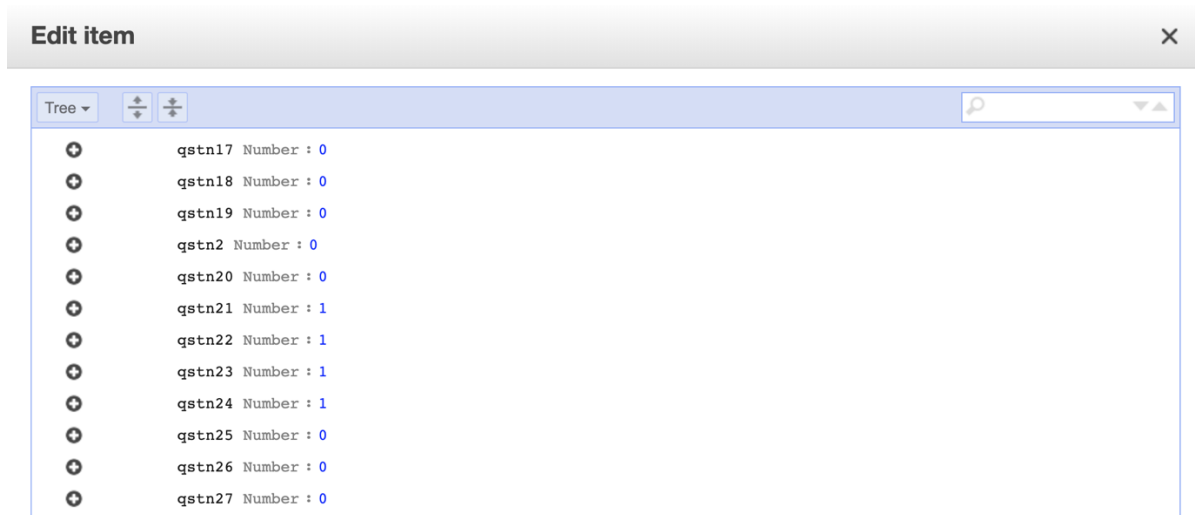


Figure 21: risk assessment answers for MOD User

These constitute encouraging feedback ahead of Trilateral’s desire to take this work further with the MOD. The user stressed that the tool would be most useful at the sub-national level, i.e. sector or area of operation (AO) within the country, so that it closely reflects the nuanced reality of the operational environment. While the tool is intended for such scenarios, adjustments were made to the risk assessment questions to ensure STRIAD is suitable in that respect. By doing so, the tool has the potential to add further value in enabling the military to

prioritise particular sectors or demographics based on the severity and modality of MSHT. For instance, we understand that AO-focussed risk assessment questions may better enable certain MOD users to provide more useful information and insight to others within the MOD regarding MSHT. The country-specific MSHT dashboards meet this requirement too, as shown in Figure 13 above: the vulnerable population is broken down by demographics and regions within the country. This requirement has been captured within the Solebay Stage 2 proposal for further development. Solebay Stage 2 seeks to advance a more detailed threat and vulnerability analysis of the human security picture within a geographic area. Moving forward with the development of STRIAD, more within-country and locally-focussed risk assessment questions integrating the granularity of the country-specific dashboards will be added.

The pilot represented an opportunity to test and improve the risk assessment and STRIAD. Invaluable user requirements were obtained, many of which have led to improvements.

5.4 Demonstration video

To support understanding of how the risk assessment works using STRIAD, the project team worked with Trilateral's marketing and communications staff to develop a demonstration video. The video was designed using a storyboard and includes voiceover, guidance text and visuals. The video contains three segments:

- Context of the project and introduction to STRIAD
- Project approach
- Use of the risk assessment in STRIAD and insight dashboards

The demonstration video is approximately four minutes in length and can be found here: <https://trilateralresearch.co.uk/project/project-solebay/>

6 Conclusion

Conflicts and other factors, such as lack of coherent government, foster the prevalence of numerous human rights abuses and undermine human security. Modern slavery and human trafficking are particularly heinous examples of both, with the UK striving to be a leader in the combat against this crime. Project Solebay has sought to contribute to enabling a stronger MOD response by developing a tool that can aid in addressing MSHT in conflict. Beyond this, the project continues to contribute towards on-going dialogue around defence planning for human security activities. This section concludes the report by looking to the future.

6.1 The future

Project Solebay should be viewed as part of a wider paradigmatic shift in military thinking regarding the nature of contemporary conflict, post-conflict reconstruction, peacebuilding, defence engagement, capacity building, security sector reform (SSR), and other security and stabilisation activities. This shift is captured, in part, by the concept of human security, which identifies the individual human being as the primary reference point for the provision and sustainment of security. This reflects a broader recognition that many of today's complex conflicts are driven, exacerbated, and prolonged by a range of socio-economic, political and transnational issues, from migration and health, to sexual violence, human trafficking, and human rights abuses.

The MOD's user requirements that were refined throughout the duration of Project Solebay have been shown to focus more precisely around enabling a stronger understanding of the threats and vulnerabilities related to MSHT as a means of supporting the military's wider risk identification, assessment and management process and enabling the more efficient allocation of resources. To further contribute to the MOD's efforts regarding human security, Trilateral aims to continue the work conducted through Project Solebay by developing a Human Security Threat/Vulnerability Analysis capability (HSTVA). The collection of threat and vulnerability data will, over time, facilitate an on-going longitudinal assessment of the efficacy of stabilisation activities in promoting human security, thereby enabling the identification and refinement of threat and vulnerability mitigation actions. Furthermore, it was revealed that focusing on HSTVA rather than 'risk assessment' *per se* yielded results of greater relevance to those end users engaging with the intelligence required for operational planning. That said, it is acknowledged that the MSHT risk assessment (and broader management) process is likely to be owned by other parts of MOD, and that Solebay can be applied in non-military contexts in which actors have a partnership approach to assessing and managing risks.

A tool that allows for the acquisition of a more comprehensive picture of the threat and vulnerability landscape in a given area in turn enables the military to obtain greater clarity regarding:

- a) the reality of the human security situation as it currently stands, rather than over-emphasising future hypotheticals;
- b) the key threat vectors and actors, and their interests and interactions;
- c) the multitude of vulnerable population groups, and key areas and drivers of vulnerability;
- d) the interconnectivities between human security threats and vulnerabilities.

All of the above will directly complement existing human terrain analysis (HTA), target audience analysis (TAA), conflict analysis, needs analysis, and other analytic and planning activities, thereby enabling the military to engage in more targeted human security work, including the provision of high-quality information and insight to other relevant UK government actors (e.g. DFID).

7 Annexes

7.1 Annex 1: Risk assessment – storyboard

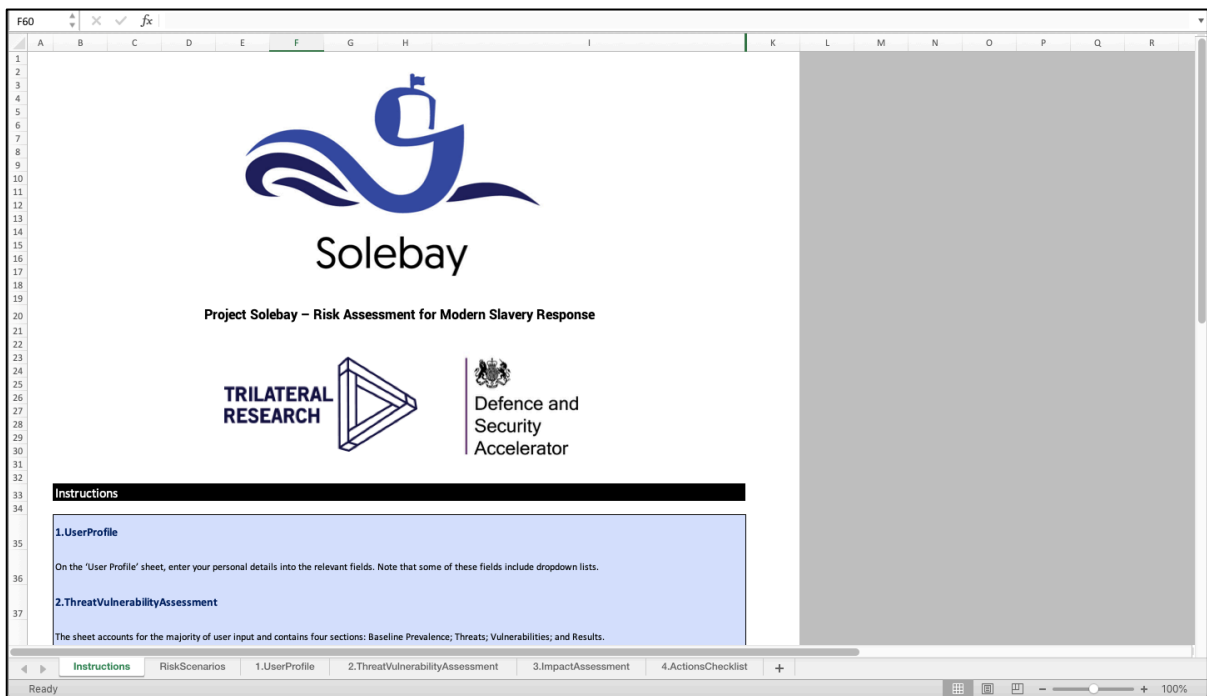


Figure 22: Storyboard 1 – The user opens the Excel file and reads the 'Instructions' sheet.

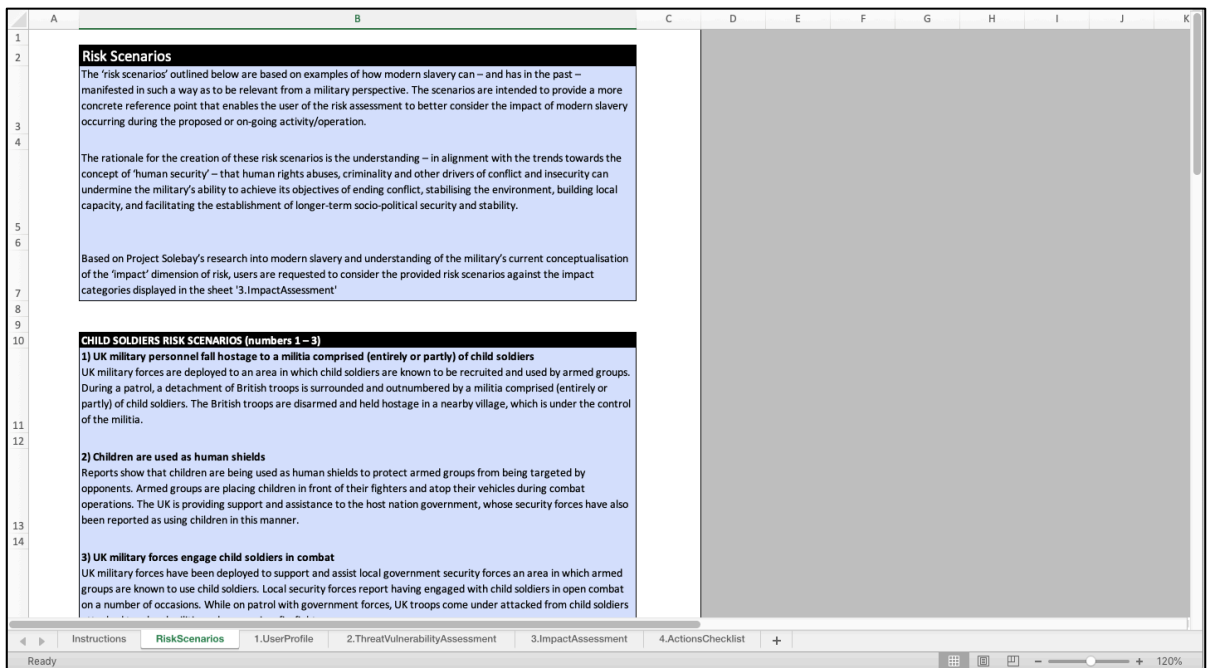


Figure 23: Storyboard 2 – The user reads the 'Risk Scenarios' sheet to understand the types of MSHT scenarios that may become present in a given conflict situation. This sheet will also be consulted later, when completing the 'Impact Assessment' sheet.

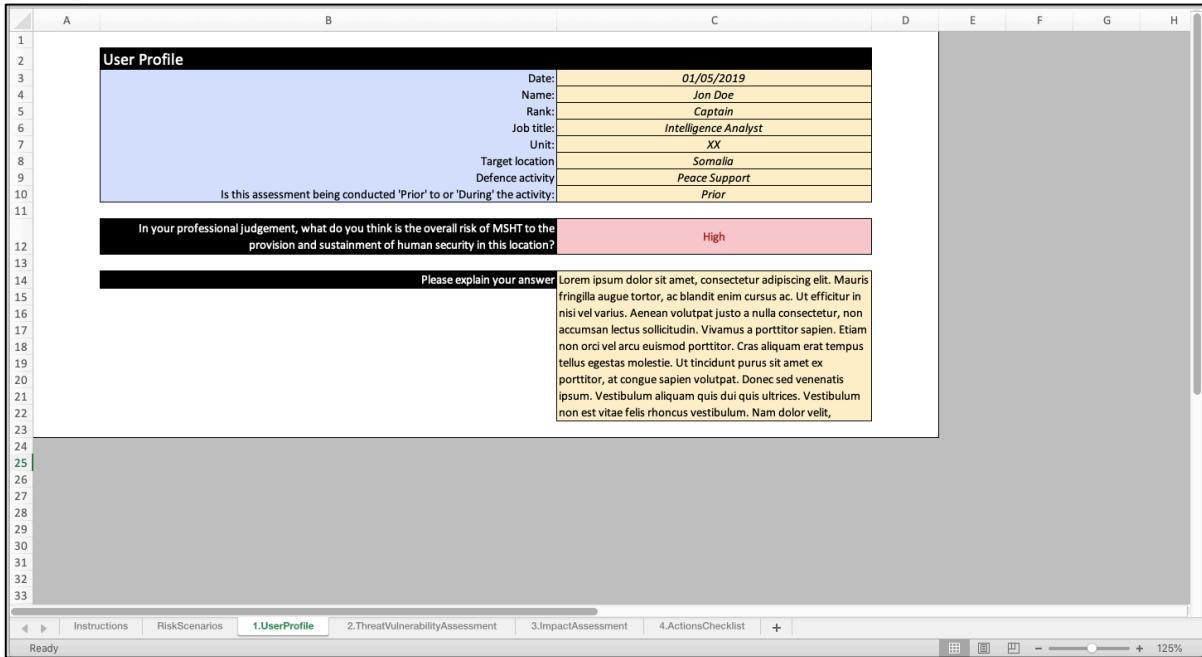


Figure 24: Storyboard 3 – The user completes the ‘UserProfile’ sheet.

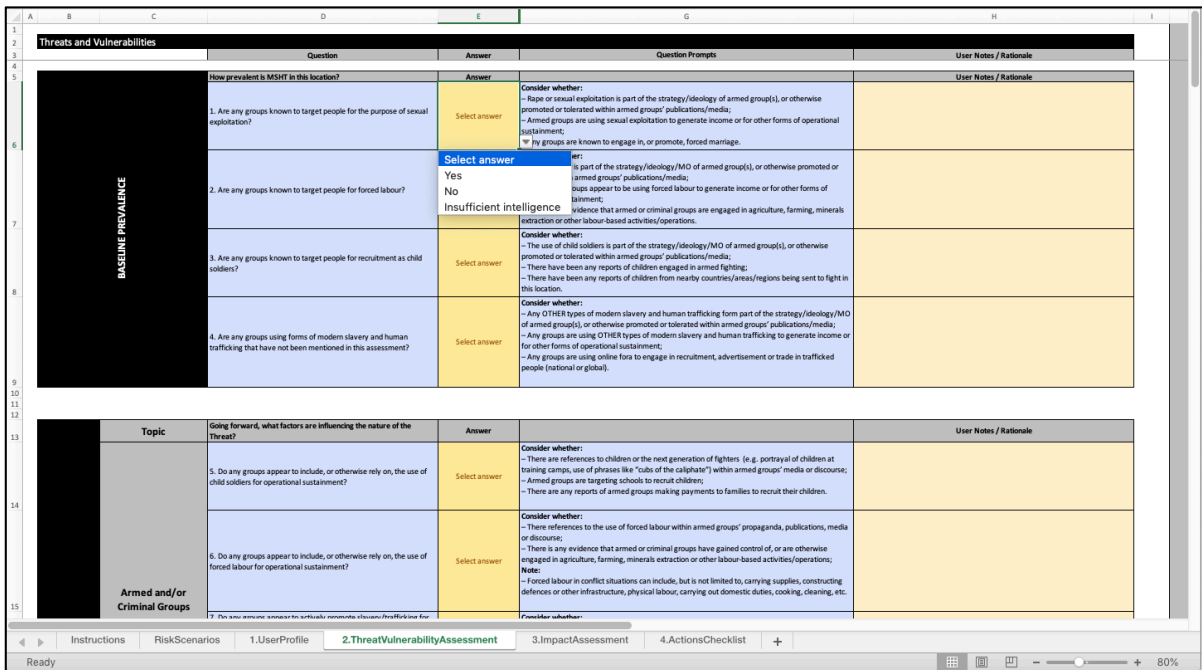


Figure 25: Storyboard 4 – The user completes the ‘ThreatVulnerabilityAssessment’ sheet, choosing one of three options for each answer (‘Yes’, ‘No’ or ‘Insufficient intelligence’). When completing this sheet, the user can also record more granular or contextual information, or the justification for their answer, in the ‘Notes/Rationale’ column.

Threats and Vulnerabilities		Question	Answer	Question Prompts	User Notes / Rationale
VULNERABILITIES	Demographic	24. Does the government appear complacent in fighting transnational crime, including corruption, terrorism, cybercrime and piracy?	No		
		25. Were there significant pre-existing human rights violations?	Yes		
		26. Has there been a significant increase in human rights violations since the start of the conflict/crisis?	Yes		
		27. Does it appear that particular demographics are being targeted for forced labour?	No		
		28. Does it appear that particular demographics are being targeted for sexual exploitation?	Yes		
		29. Does it appear that particular demographics are being targeted for recruitment as child soldiers?	No		
		30. Is there evidence of significant cultural, societal or historical discrimination towards particular demographic groups?	Yes	Consider whether: - There is significant discrimination towards particular ethnic, religious, political or gender groups.	
		31. Is there a high degree of gender inequality?	Yes		
		32. Is there pre-existing societal gender-based violence?	Yes		
	Socio-Economic	33. Do youth lack steady access to education?	Yes	Consider whether: - There are any functioning schools in the area; - Any local schools have recently been closed, destroyed, or otherwise ceased functioning; - There is a low, medium or high proportion of children attending school; - There are any cultural norms against particular demographic groups attending school or further education.	
		34. Do youth lack steady access to safe employment?	Yes	Consider whether: - There are appropriate jobs available for youth.	
		35. Do adults lack steady access to employment?	No	Consider whether: - There are jobs available in the local economy; - There has recently been an increase in the number of unemployed adults, or a significant reduction in the jobs available.	
		36. Is the literacy rate poor?	No		
		37. Has there been an increase in the supply of sexual services?	Yes	Consider whether: - There has been an increase in the number of sex workers or the number of brothels; - There has been an increase in demand for sexual health services.	
		38. Is there evidence of extreme poverty in the area?	Insufficient intelligence	Consider whether: - There is a high proportion of the population living on/under \$1.90 per day.	
		39. Is there a significant proportion of the local population working in agriculture, construction or domestic services?	Insufficient intelligence		
		40. Are workers being abused, mistreated, or have restrictions on their movements?	Insufficient intelligence		
		41. Is the level/quality of employment law and regulation generally low/poor?	Yes		
		42. Does the government fail to provide publicly available information on workers' rights?	Yes		
	Migration	43. Is there mass migration or displacement?	Yes		
		44. Are large numbers of displaced people being separated from their support networks (e.g. family and friends)?	Insufficient intelligence	Consider whether: - There are any reports of displaced women or children living or travelling alone; - There is any indication that social structures (e.g. family) have broken down amongst displacement communities.	
		45. Is there a significant proportion of migrant workers in local	No		

Figure 26: Storyboard 5 – The answers are colour-coded as the user completes the assessment, providing a visual indication of the level of threat/vulnerability.

Threats and Vulnerabilities		Question	Answer	Question Prompts
Environment and Health		47. Are there government restrictions on the ability of NGOs to deliver services provided by the state or NGOs?	Yes	- There are government restrictions on the ability of NGOs to deliver services - There is access to sexual health care for the local population; - Children have access to rehabilitation, reintegration, healthcare and psych programmes to help them deal with the trauma or physical injuries associate
		48. Is there likely to be any climate-induced migration in the near future?	No	
		49. Is the level of food security poor?	Yes	
		50. Are there any on-going or recent complex health emergencies (e.g. epidemics, outbreaks of disease etc.) in the area?	No	
		51. Are there any on-going or recent natural disasters (e.g. earthquakes, tsunamis, floods, droughts etc.) in the area?	No	
Threats and Vulnerabilities - Scores				
BASELINE		Prevalence	75.00	
THREATS	Armed and/or Criminal Groups	87.50		
	Host Nation Forces	60.00		
VULNERABILITIES	Governance	77.78		
	Demographic	66.67		
	Socio-Economic	80.00		
	Migration	50.00		
	Environment and Health	20.00		

Figure 27: Storyboard 6 – At the bottom of the sheet, the user is presented with a threats/vulnerabilities scorecard, which is colour-coded to visually indicate low, medium and high threat/vulnerability levels according to thematic area (e.g. 'governance', 'migration').

Scenario No.	Likelihood	Life and Physical Health of UK forces	Mental Health, Wellbeing, Morale of UK forces	Performance / Mission (Operational Impact)	Financial Impact on UK forces	Legal Impact on UK forces	Reputational / Political Impact on UK forces	Human Security in the area	IMPACT TOTAL
1	2	4	4	5	2	2	4	1	3
2	3	3	4	3	1	5	5	4	4
3	4	5	5	5	2	5	5	5	5
4	1	2	5	4	4	5	5	3	4
5	4	2	2	4	1	1	2	4	2
6	5	1	2	3	2	1	1	5	2
7	4	2	1	3	2	1	1	5	2
8	3	1	1	3	3	1	1	4	2
9	3	1	2	4	4	4	4	3	3

Scenario No.	Life of UK forces	Mental Health, Wellbeing, Morale of UK forces	Performance/Mission	Financial	Legal	Reputational / Political	Human Security	RISK TOTAL
1	8	8	10	4	4	8	2	6
2	9	12	9	3	15	15	12	11
3	20	20	20	8	20	20	20	18
4	2	5	4	4	5	5	3	4
5	8	8	15	4	4	8	15	9
6	5	10	15	10	5	5	25	11
7	8	4	12	8	4	4	20	9
8	3	3	9	9	3	3	12	6
9	3	6	12	12	12	12	9	9

Likelihood	6	5	4	3	2	1
6	6	12	18	24	30	
5	5	10	15	20	25	
4	4	8	12	16	20	
3	3	6	9	12	15	
2	2	4	6	8	10	
1	1	2	3	4	5	
						Impact

Figure 28: Storyboard 7 – The user then completes the 'ImpactAssessment' sheet, selecting a numerical score for likelihood and impact of each scenario – this uses the NATO Uncertainty Yardstick for likelihood, and a standard 5-point scale for impact. The risk score for each scenario is then displayed in the second table ('Risk Scores') on the sheet.

Checks	Done?
Have steps been taken to ensure that all contracts for the provision of services within the deployment area are handled through robust tendering frameworks (CSSF, FCO, etc.)?	
Have steps been taken to ensure that UK military personnel are fully aware of the ROE regarding child soldiers?	Yes
Have steps been taken to ensure compliance with UK military policy regarding sexual relations and sexual conduct?	No
Have steps been taken to ensure that UK military personnel will have access to healthcare, including mental healthcare, and other relevant provisions?	
Have UK forces received training/guidance regarding what to do if they encounter child soldiers?	
Are there measures or procedures in place to respond to the potential use of child soldiers by allied partners?	
Are there processes in place to capture and escalate any reports of sexual misconduct by UK and/or allied partner forces?	
Is there measures in place to handle media coverage of the operation?	

Suggested Action Point/Mitigation	Threat/Vulnerability Targeted
The demand for sexual and other services from trafficking victims may be driven or increased by the presence of foreign military forces. It is imperative that adequate training is provided to military forces on what constitutes MSHT, its signs, its connections with organised crime, and the adverse impacts it can have on mission success. This must be accompanied by genuine efforts to make the training more than just a 'tick box' exercise.	Micro Solution - Threat from uninformed military who may not understand how their actions facilitate MSHT - Vulnerabilities: Setup of 'peacekeeping economies'; Lack of or inadequate law on MSHT; Expansion of organised crime; Gender-based
A 'zero tolerance policy' regarding engagement with, or facilitation of, MSHT should be adopted across HM Forces and be made applicable to all military personnel at all levels of command. The policy should prohibit UK troops, their contractors and sub-contractor from being complicit in any way in MSHT.	Micro Solution - Threat from uninformed military who may not understand how their actions facilitate MSHT - Vulnerabilities: Erosion of rule of law; Lack of or inadequate law on MSHT; Deficient penalties for MSHT
In order to ensure that victims of human trafficking are not unjustly detained but are instead afforded support (where applicable), operational training should be delivered to enable UK forces to better identify and distinguish between victims of human trafficking and other categories of persons, such as smuggled migrants, refugees, and displaced persons.	Micro Solution - Threat from uninformed military who may not understand what is MSHT and who may need protection - Vulnerabilities: Erosion of rule of law; Lack of or inadequate law on MSHT; Deficient penalties for MSHT; Existence of people smuggling services; Poor migration options
Anti-human trafficking training should also be provided to allied partners, local law enforcement and security forces, border control agencies, and militaries in area of deployment.	Micro Solution - Threat from host nation government - Vulnerabilities: Erosion of rule of law; Lack of or inadequate law on MSHT; Deficient penalties for MSHT sufficiently stringent to deter traffickers; Existing and/or increased human rights violations

Figure 29: Storyboard 8 – Having assessed the key threats, vulnerabilities and risks, the user then navigates to the 'ActionsChecklist' and is presented with a checklist of actions that may help mitigate the level of risk.

7.2 Annex 2: STRIAD open data sets

Name	Location	Time	Source	Link	Rows	Columns	Size Mb	Description	License
<i>2016 UNODC Global Report on Trafficking in Persons</i>	Global	2012-2014	UNODC	Link	100	17	6.3	Number of victims of Modern Slavery by crime typology for each country and region in the sample. Underpins the 2016 <i>UNODC Global Report on Trafficking in Persons</i> .	Freely usable provided UNODC is cited as reference. Link
Walk Free Foundation's Global Slavery Index	Global	2017	Walk Free Foundation	Link	186	27	0.290	Data on 167 countries covering: national estimates of the prevalence of modern slavery, a measure of vulnerability, and an assessment of the strength of government responses to modern slavery.	The licence excludes all rights to Distribute the Work (Global Slavery Index 2018 Global Data Table), a Derivative Work or the Work as incorporated in any Collection. Link
IOM's Counter Trafficking Data Collaborative	Global	2002-2018	IOM, Polaris	Link	55,437	62	14.6	This data consists of information on identified and reported victims of human trafficking. There are 62 variables that capture information on the socio-demographic profile of victims, the trafficking process or the exploitation type.	A user is authorised to download, store, modify, print and publish the data for non-commercial use only, in particular for research and publications, without, inter alia, the right to sell, directly reproduce or redistribute the original datasets. Link
UNODC's country-level statistics on killed women per 100,000	Global	2015	UNODC	Link	230	38	0.217	Number of homicides in each country by sex in 2015.	Freely usable provided UNODC is cited as reference. Link
UNHR's Refugees originating from Kenya	Global	1975-2012	UNHR	Link	526	7	0.072	Record of countries of arrival of UNHR-registered Kenyan refugees.	other-pd-nr Link
Demographics of UNHCR's populations of concern residing in Somalia	Somalia	2000-2017	UNHCR	Link	172	20	0.017	This data provides information on persons of concern broken down by sex and age, as well as by location within Somalia.	CC-BY-IGO Link
UNHCR's populations of concern originating from Somalia	Global	1975-2017	UNHCR	Link	2,600	11	0.099	Year-by-year data about UNHCR's populations of concern originating from Somalia, broken down by country of arrival.	CC-BY-IGO Link
UNDP's Education Index	Global	1990-2017	UNDP	Link	189	29	0.060	UNDP's Education Index in 189 countries in between 1990 and 2017.	Creative Commons Attribution 3.0 IGO license. Link

UNDP's Gender Inequality Index	Global	1995-2017	UNDP	Link	160	12	0.022	UNDP's Gender Inequality Index in 160 countries, between 1995 and 2017.	Creative Commons Attribution 3.0 IGO license. Link
UNDP's Human Development Index	Global	1990-2017	UNDP	Link	189	29	0.037	UNDP's Human Development Index in 189 countries, between 1990 and 2017.	Creative Commons Attribution 3.0 IGO license. Link
UNDP's Youth Unemployment	Global	2017	UNDP	Link	179	2	0.003	UNDP's ILO-provide Youth Unemployment data in 179 countries in 2017.	Creative Commons Attribution 3.0 IGO license. Link
Multi Indicator Cluster Sampling (MICS) – Bungoma, Turkana and Kakamega Counties, Kenya	Kenya, i.e. Bungoma, Kakamega and Turkana Counties	2013/14	UNICEF, University of Nairobi's Population Studies and Research Institute, Kenya National Bureau of Statistics	Link	953,573	654	2.891	International household survey which measures key indicators for use in policy making and development programmes as well as to monitor progress towards the Millennium Development Goals (MDGs).	Freely usable; outputs based on MICS to be shared with UNICEF and gov. partner implementing the survey. Link
Kenyan Integrated Household Budget Survey (KIHBS)(2015)	Kenya	2015	World Bank, Kenya National Bureau of Statistics	Link	92,846	276	74.3	The 2015/16 Kenya Integrated Household Budget Survey (KIHBS) collects household-level data on a range of socioeconomic indicators used to monitor the implementation of development initiatives. Info on household characteristics, housing conditions, education, general health characteristics, nutrition, etc is available.	To be used for scientific/research purposes only by the user registered to access the data. Data cannot be sold, redistributed without World Bank's Microdata Library Written Consent. Link
Human Trafficking in Kenya Survey	Kenya, i.e. Kwale, Mombasa, Nairobi, Kajiado, Marsabit Isiolo, etc. Counties	2015	Kenya's National Crime Research Centre	Link	10 (1 for each survey item)	3 (columns: survey item, corresponding labels of survey item and corresponding values of survey item)	2.126	Purposive/ non-probability/snow-ball sampling survey on human trafficking in Kenya, administered to key informants, victims and traffickers for the 2015 <i>Human Trafficking in Kenya Report</i> .	Creative Commons 1.0 Universal, Public. Link

UCDP GED version 18.1 (Mihai and Sundberg 2017)	Global	1989-2017	Department of Peace and Conflict Research, Uppsala University	Link	2,330	28	0.368	This dataset is UCDP's most disaggregated dataset, covering individual events of organized violence (phenomena of lethal violence occurring at a given time and place) with a village-level granularity.	Reusable free of charge but it needs to be cited appropriately. 1. Link ; 2. Link
Somali High Frequency Survey (Wave 2, 2017-18)	Somalia	2017-2018	World Bank	Link	33,155	128	42.5	Household survey data on welfare and perceptions of citizens in all accessible areas of 17 regions within Somalia's pre-war borders including Somaliland.	To be used for scientific/research purposes only by the user registered to access the data. Data cannot be sold, redistributed without World Bank's Microdata Library Written Consent. Link
Transparency International's Corruption Perception Index	Global	2017	Transparency International	Link	180	9	0.121	The 2018 CPI draws on 13 surveys and expert assessments to measure public sector corruption in 180 countries and territories, giving each a score from zero (highly corrupt) to 100 (very clean).	CC-BY-ND 4.0 Link
World Bank's 2017 GDP Per Capita in USD	Global	2017	World Bank	Link	264	62	0.161	Country GDP per Capita in USD.	CC BY-4.0 Link
World Bank's Net Migration in 2017	Global	2017	World Bank	Link	264	5	0.024	Country-level measure of net migration taking into account people arriving and leaving each Country (2017).	CC BY-4.0 Link
Global Burden of Disease Study 2016 (GBD 2016)-Healthcare Access and Quality Index based on Amenable Mortality 1990-2016	Global	1990-2016	Global Health Data Exchange	Link	87,936	11	16.2	Number of amenable deaths (deaths due to curable illnesses that could have been avoided) by country between 1990 and 2016.	Creative Commons Attribution-Non Commercial-No Derivatives 4.0. Data can be used, shared, modified, or built upon by non-commercial users. Link
Fund for Peace's Fragile State Index	Global	2018	Fund for Peace	Link	178	16	0.129	Global dataset measuring a State's fragility level based on a number of indicators including security apparatus, group grievance, public services, etc.	Unknown
Freedom House's Freedom in the World 2018	Global	2018	Freedom House	Link	209	40	0.225	Country-level data measuring a country's freedom level based on a number of indicators including Functioning Government and Rule of Law.	Unknown
WEC's Global Competitiveness Index	Global	2017-2018	World Economic Forum	Link	6,522	160	7.0	World Economic Forum's Global Competitiveness Index based on an executive survey. Index assesses the competitiveness landscape of 137 economies, providing unique insight into the drivers of their productivity and prosperity	Creative Commons' Attribution- Non-Commercial 4.0 International (CC BY- NC 4.0) Link

7.3 Annex 3: Pilot Evaluation Objectives, KPIs and Evaluation Questionnaire

Pilot evaluation objectives

- 1) Evaluate the risk assessment methodology
 - a) Usefulness of questions and ease of understanding;
 - b) Ability to answer questions based on available information/intelligence;
 - c) Appropriateness of the output in Excel and on STRIAD (i.e., Typology Risk Score, Total Risk Score, Impact Score. Comments/notes - report output);
 - d) Usefulness of dashboards for completing the assessment;
- 2) Evaluate STRIAD from a technical perspective:
 - a) User experience and performance – (check loading of risk assessment, answering of questions, saving results and using data insights dashboard is clear and simple, without bugs and/or excessive slowness in loading);
 - b) Additional functionality required.
- 3) Determine the training requirements for using STRIAD and completing the assessment in the future:
 - a) Elements requiring training;
 - b) Types of training preferred.

KPIs for evaluation

- Relevance of risk assessment questions;
- Usefulness of all insights, including dashboards;
- Usability and stability of STRIAD.

Pilot evaluation questionnaire for KPI monitoring

1. Please enter your ‘user story’:

2. What sources did you use to answer the questions?

3. What would you expect to do with the risk assessment after completing it? Who would you send it to?

4. How clear did you find the risk assessment instructions? *Please select from below, 1 means not at all clear and 5 means very clear.*

Not at all clear

1

2

3

4

Very clear

5

Other comments: _____

12. How useful would it be to have a training session on STRIAD? *Please select from below, 1 means not at all useful and 5 means very useful.*

Not at all useful

1

2

3

4

Very useful

5

Other comments: _____

13. Is there anything else you think we should know based on your experience of piloting the risk assessment?
