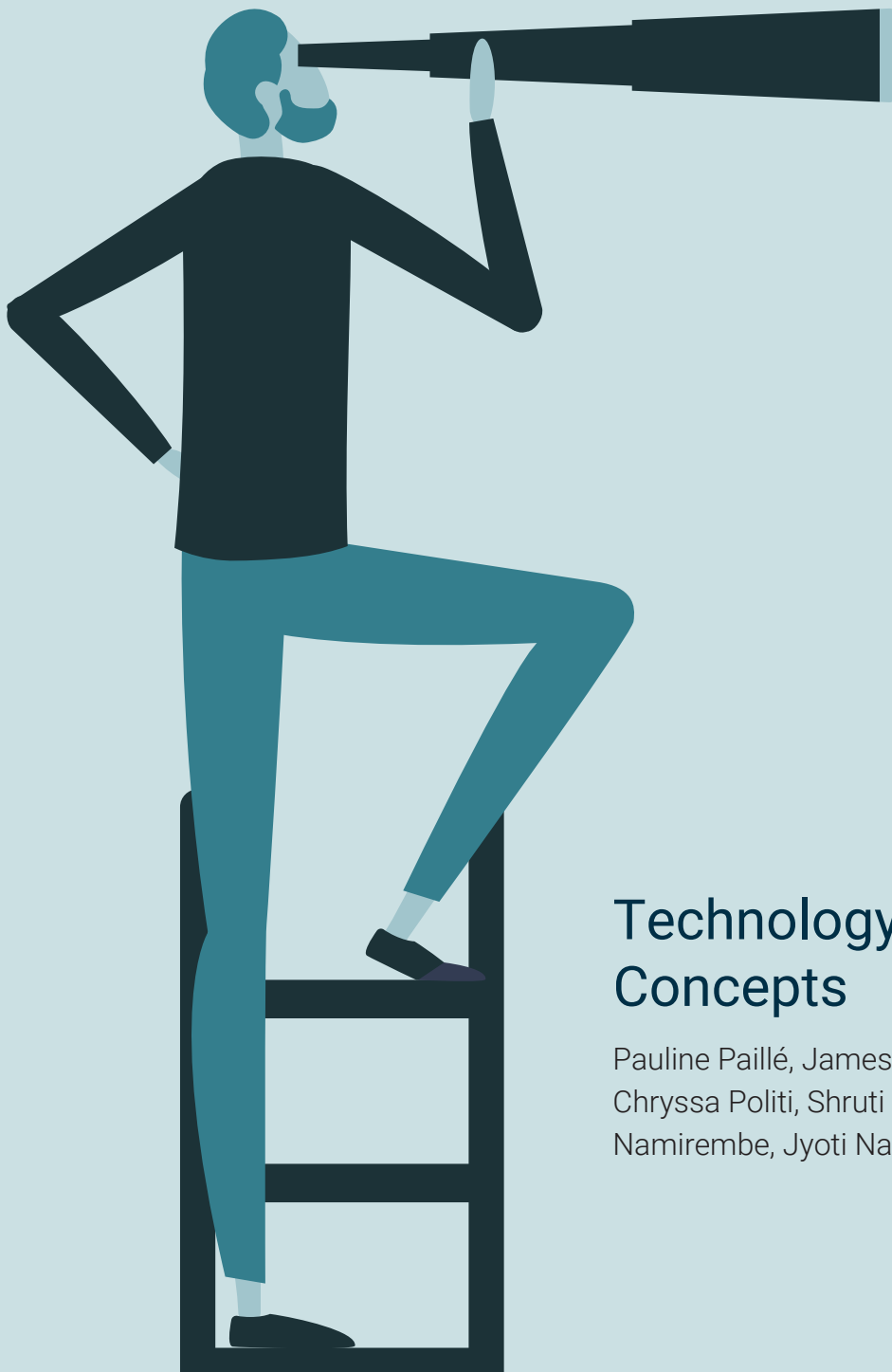




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Opportunities for Supporting Humanitarians



Technology Foresight Concepts

Pauline Paillé, James Besse, Hampton Toole,
Chryssa Politi, Shruti Viswanathan, Eunice
Namirembe, Jyoti Nayak, Jacob Ohrvik-Stott



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Summary

Between November 2023 and April 2024, RAND Europe, in partnership with Athena Infonomics and glass.ai, explored current practices in the use of emerging technologies in the humanitarian sector. As part of a project commissioned by the UK Humanitarian Innovation Hub (UKHIH), the study team investigated opportunities for future responsible adoption of technologies, including by leveraging foresight methods and tools.

This document presents a proposal for an initiative for humanitarian foresight activities, as well as assessing associated risks and challenges. While some humanitarian organisations are active in this space, changes in the humanitarian operating environment – including more frequent and severe crises – foster the need to think about the future of humanitarian response more systematically across the sector.

The document outlines three humanitarian technology foresight concepts, relating to: (i) the establishment of a technology horizon scanning coalition; (ii) visioning for emerging technologies in crisis recovery; and (iii) an emerging technology narrative initiative. Based on exchanges with UKHIH and the humanitarian stakeholder community, the study team selected the third proposed option for further exploration. A summary of the proposed concepts is presented in Table S.1. These concepts could be further explored and implemented by humanitarian actors either on their own or in combination with other foresight activities.

Each concept was developed against three criteria: (i) partnerships (the potential to involve a variety of humanitarian stakeholders, including local humanitarian organisations); (ii) integration with current practices (the potential for the foresight initiative to build upon, or integrate with, existing humanitarian practice); and (iii) ethical sensitivities (cultural sensitivities and potential ethical issues that should be considered when implementing the foresight concept).

These criteria were scored against a basic red-amber-green (RAG) rating to highlight the extent to which they are relevant implementation considerations:

- Green represents high relevance (i.e. partnerships are a prominent and important aspect of the concept methodology, the concept is highly integrated with existing practices, and the concept is associated with a high number of ethical considerations);
- Yellow represents medium relevance (i.e. partnerships are a limited and non-mandatory aspect of the concept methodology, the concept is integrated with existing practices to a limited extent, and the concept is associated with a number of ethical considerations); and
- Red represents low relevance (i.e. partnerships are not necessary as part of the concept methodology, there is limited to no familiarity between the concept and existing practices, and the concept is associated with few ethical considerations).

Table S.1 Summary of foresight concepts

Foresight concept	Audiences and objectives	Partnerships	Integration with current practice	Ethical sensitivities
Technology horizon scanning coalition	<p>This initiative seeks to track and map emerging humanitarian technology use cases across a range of regions, combining central horizon scanning (of external literature) with crowdsourced reports from a network of local partners. Learnings on emerging hazards, trends and adoption case studies are then shared with network partners – the primary audience.</p>	<p>High relevance: This initiative would build a coalition of local humanitarian organisation partners across a range of regions, who collaborate to share insights on if and how emerging technologies are being adopted in their areas. Periodic surveys would also invite participating organisations to share their views on potential future risks and opportunities associated with these technologies and suggest collaborative solutions.</p>	<p>Medium relevance: The United Nations' <i>UN 2.0</i> strategy¹ outlines their plans for developing 'hub and spoke' networks for foresight, as well as wider foresight networks, including the Next Generation Foresight Network,² which could be leveraged in the building of the coalition. More broadly, this approach builds upon 'collective intelligence' practice, which is a nascent area within the humanitarian sector.³</p>	<p>Medium relevance: Diversity of participating organisations and networks is a critical success factor for this initiative. It is also important to design a fair and equitable process, so that participants get more value from insights than the resources required to participate. Sensitivities relating to stakeholders sharing views on potential risks and unethical practice in relation to technologies must also be managed.</p>

1 UN 2.0: Quintet of Change. n.d. 'Evolving for Impact: Skills and Culture for Tomorrow.' As of 20 August 2024: <https://www.un.org/two-zero/en>

2 Next Generation Foresight Practitioners. n.d. 'Home.' As of 20 August 2024: <https://nextgenforesight.org/>

3 Trigwell, R., J. Phillippo-Holmes, E. Zambrano, J. Bahn, P. Hirani & E. Griesmer. 2022. *Validating Humanitarian Data Analysis Through Collective Intelligence: A Pilot Study*. Geneva: International Organization for Migration. As of 20 August 2024: <https://publications.iom.int/books/validating-humanitarian-data-analysis-through-collective-intelligence-pilot-study>

Foresight concept	Audiences and objectives	Partnerships	Integration with current practice	Ethical sensitivities
Visioning for emerging technologies in crisis recovery	This initiative offers a toolkit for humanitarian organisations to partner with crises-affected communities (both primary audiences) to develop a vision for longer-term future recovery roadmaps from crises, with a particular focus on the roles of emerging technologies within these visions.	Medium relevance: Visioning would necessitate the use of participatory futures, with humanitarian delivery agencies partnering with local communities and specialist local facilitators. To explore the role of emerging technologies in future recovery plans, facilitation products that highlight potential use cases and risks would be developed – this could require partnerships with technology developers and experts.	High relevance: This initiative would be able to tap into existing practice and networks in the recovery cluster of the United Nations Office for the Coordination of Humanitarian Affairs' cluster system. Visioning is a feature of the International Federation of Red Cross and Red Crescent Societies and Solferino Academy's <i>Strategic Foresight Book</i> ⁴ and the United Nations Development Programme's <i>Foresight Playbook</i> , ⁵ suggesting these approaches have translated to humanitarian contexts.	High relevance: Crisis recovery is a highly sensitive topic, and care would need to be taken not to inadvertently divert attention away from short-term recovery needs or develop visions that exclude local communities or offer an unrealistic vision of the future. Enabling local facilitators to lead and adapt the processes is also important to ensure cultural sensitivity.
Emerging technology narrative initiative	This initiative seeks to explore how crises-affected populations (or local humanitarian organisations) conceptualise and frame emerging technology issues, with a view to reframing narratives in the interests of these communities. Audiences for outputs include technology developers and humanitarian agencies utilising those technologies.	High relevance: To conduct research on regional emerging technology narratives, partnerships with regional humanitarian organisations and specialist local facilitators or community leaders would be needed. While formal partnerships are not necessarily required, extensive engagement with technology developers and commissioners in the humanitarian sector would be needed to ensure impact.	Medium relevance: While narrative theory and approaches (which research how narratives impact stakeholders' behaviours and beliefs) are not mainstream practices in the humanitarian sector, various humanitarian actors in non-governmental organisations and academia have used it – in particular, in relation to migration, where organisations including the Office of the United Nations High Commissioner for Human Rights ⁶ and International Organization for Migration ⁷ have used these tools.	High relevance: Potential sensitivities relating to participants' views on emerging technology risks and issues should be managed.

Source: Study team analysis.

4 Holt, Ben. 2023. *The Strategic Foresight Book*. Solferino Academy, International Federation of the Red Cross and Red Crescent. As of 20 August 2024: <https://solferinoacademy.com/wp-content/uploads/2024/02/The-Strategic-Foresight-Book-EN-ED02.pdf>

5 United Nations Development Programme. 2022. *UNDP RBAP: Foresight Playbook*. As of 20 August 2024: <https://www.undp.org/asia-pacific/publications/undp-rbap-foresight-playbook>

6 Office of the United Nations High Commissioner for Human Rights. n.d. 'Reframing narratives on migration: OHCHR and migration.' Ohchr.org. As of 20 August 2024: <https://www.ohchr.org/en/migration/reframing-narratives-migration>

7 International Organization for Migration. n.d. 'Migration Narratives.' wmr-policytoolkit.iom.int. As of 20 August 2024: <https://wmr-policytoolkit.iom.int/migration-narratives>

Preface

This report was produced as part of a project commissioned by the UK Humanitarian Innovation Hub (UKHIH) that explored the adoption and use of emerging technologies in the humanitarian sector and associated barriers and challenges. This document presents three foresight concepts for the consideration of humanitarian stakeholders looking to embed emerging technologies into humanitarian projects and programmes.

The underpinning research activities across the three phases of the project were conducted between November 2023 and April 2024. This project also explored specific technology areas with strong potential within the humanitarian sector; developed guidance to help humanitarians seeking to adopt these technologies; and investigated opportunities for foresight initiatives exploring the use of emerging technologies.

This report should be read in conjunction with the other outputs of this study: the

Methodology report,⁸ *Deep Dive series*⁹ and *Guidance opportunity*¹⁰ documents. In addition, the study developed two case studies on Cash and Voucher Assistance (CVA) and biometrics.¹¹

The study was conducted by a multidisciplinary team led by RAND Europe in partnership with Athena Infonomics and glass.ai.

For more information about this study or RAND Europe, please contact:

Pauline PAILLÉ
Senior Analyst – Defence and Security
RAND Europe
Eastbrook House, Shaftesbury Road
Cambridge
CB2 8DR
United Kingdom
e. ppaille@randeurope.org

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- 8 Paillé, Pauline, James Besse, Hampton Toole, Chryssa Politi, Shruti Viswanathan, Eunice Namirembe, Jyoti Nayak, Sergi Martorell, Iain McLaren, Christopher Tyson, Charlie Wilkening & Jacob Ohrvik-Stott. 2024. *Emerging technologies in the humanitarian sector: Methodology report*. Santa Monica, Calif.: RAND Corporation. RR-A3192-2. As of 17 October 2024: www.rand.org/t/RR-A3192-2
- 9 Paillé, Pauline, Pauline Paillé, James Besse, Hampton Toole, Chryssa Politi, Shruti Viswanathan, Eunice Namirembe, Jyoti Nayak, Sergi Martorell, Iain McLaren, Christopher Tyson, Charlie Wilkening & Jacob Ohrvik-Stott. 2024. *Emerging technologies in the humanitarian sector: Technology Deep Dive Series*. Santa Monica, Calif.: RAND Corporation. RR-A3192-1. As of 17 October 2024: www.rand.org/t/RR-A3192-1
- 10 Paillé, Pauline, James Besse, Hampton Toole, Chryssa Politi, Shruti Viswanathan, Eunice Namirembe, Jyoti Nayak & Jacob Ohrvik-Stott. 2024. *Opportunities for Supporting Humanitarians: Technology Guidance*. Santa Monica, Calif.: RAND Corporation. RR-A3192-3. As of 17 October 2024: www.rand.org/t/RR-A3192-3
- 11 Toole, Hampton, Pauline Paillé, Chryssa Politi & Jacob Ohrvik-Stott. 2024. *Humanitarian Technology Adoption Case Study: Technology-enabled Cash and Voucher Assistance*. Santa Monica, Calif.: RAND Corporation. RR-A3192-5. As of 17 October 2024: www.rand.org/t/RR-A3192-5; Paillé, Pauline, Hampton Toole, Chryssa Politi & Jacob Ohrvik-Stott. 2024. *Humanitarian Adoption Case Study: Biometrics*. Santa Monica, Calif.: RAND Corporation. RR-A3192-6. As of 17 October 2024: www.rand.org/t/RR-A3192-6

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Abbreviations

AI	Artificial Intelligence
CFFS	The RAND Europe Centre for Futures and Foresight Studies
IOM	International Organization for Migration
ITI	Information Technology Industry Council
LMIC	Low- and Middle-Income Country
NEAR	Network for Empowered Aid Response
OCHA	United Nations Office for the Coordination of Humanitarian Affairs
OHCHR	Office of the United Nations High Commissioner for Human Rights
RAG	Red-Amber-Green
UKHIH	UK Humanitarian Innovation Hub
UN	United Nations
UNDP	United Nations Development Programme
WHO	World Health Organization

Chapter 1. Introduction

1.1. Study scope and context

In November 2023, RAND Europe, in partnership with Athena Infonomics and glass.ai, launched the *Emerging Technologies for the Humanitarian Sector* project. This initiative, funded by the UK Humanitarian Innovation Hub (UKHIH), is the first stage of the Hub's wider programme of work exploring opportunities to support humanitarian-sector organisations to effectively consider how, or whether, to adopt technologies in their work.

The United Nations (UN) Organisation for the Coordination of Humanitarian Affairs' (OCHA) *Strategic Plan 2023–2026* notes that the humanitarian sector is facing an exponential rise in humanitarian needs while simultaneously 'buckling under its resource constraints'.¹² Technologies offer a vital means of potentially bridging this growing needs–resources gap,¹³ but OCHA cautions that these systems should be people-centred, durable and promote concrete outcomes. Acknowledging

this context, this project included three overarching aims:

1. Understand and define trends in the adoption and use of emerging technologies within the humanitarian sector.¹⁴
2. Identify key emerging technologies that could strengthen humanitarian practice through an online survey.
3. Envisage a future research and innovation journey for the identified key emerging technologies.

To fulfil these objectives, the study team adopted a mixed-methods approach that included a literature review, semi-structured interviews, surveys and questionnaires, workshops, horizon scanning and web reading. These activities are presented in detail in the *Methodology report*.¹⁵

This document was developed during the third and final phase of the study, between March and April 2024, and supplements the

12 Office for the Coordination of Humanitarian Affairs. 2023. *OCHA's Strategic Plan 2023-2026: Transforming Humanitarian Coordination*. As of 20 August 2024: <https://www.unocha.org/publications/report/world/ochas-strategic-plan-2023-2026-transforming-humanitarian-coordination>

13 Foreign Commonwealth and Development Office. 2022. 'Policy paper: UK humanitarian framework.' FCDO Humanitarian and Migration Directorate. As of 20 August 2024: <https://www.gov.uk/government/publications/uk-humanitarian-framework/uk-humanitarian-framework>

14 UKHIH commissioned a distinct project to explore the adoption and use of artificial intelligence (AI) and machine learning (ML) in the humanitarian sector. These technologies were not within the scope of the project presented in this document.

15 Paillé, Pauline, James Besse, Hampton Toole, Chryssa Politi, Shruti Viswanathan, Eunice Namirembe, Jyoti Nayak, Sergi Martorell, Iain McLaren, Christopher Tyson, Charlie Wilkening & Jacob Ohrvik-Stott. 2024. *Emerging technologies in the humanitarian sector: Methodology report*. Santa Monica, Calif.: RAND Corporation. RR-A3192-2. As of 17 October 2024: www.rand.org/t/RR-A3192-2

*Deep Dive series*¹⁶ and *Technology guidance*¹⁷ documents. This document draws upon all project activities, in particular the targeted desk research, a survey, two workshops with humanitarian stakeholders and three semi-structured interviews conducted with humanitarian stakeholders who have relevant knowledge and experience of the use of foresight methods and tools and their application to humanitarian contexts.

1.2. Humanitarian foresight context

The various project activities conducted by the study team highlighted the opportunities as well as the challenges and barriers faced by the humanitarian sector in combining foresight approaches with the use of emerging technologies. While humanitarian activities typically focus on providing immediate and short-term responses in the aftermath of crises, stakeholders in the sector routinely adopt futures-oriented approaches to be able to deploy bespoke responses.¹⁸ As a

'systematic, participatory, future-intelligence-gathering and medium-to-long-term vision-building process aimed at enabling present-day decisions and mobilizing joint action',¹⁹ foresight can help humanitarians develop a forward-looking attitude in an operating environment characterised by increasing uncertainty surrounding the location, frequency and severity of crises. Examples of foresight methods include horizon scanning, scenario development, trends analysis and the Delphi method.²⁰

In the humanitarian sector, foresight aims to explore the range of possible futures that could demand humanitarian response as well as the factors that could impact the realisation of these futures. Foresight methods and tools do not aim at predicting a specific future and associated decisions and responses, but rather investigate the uncertain character of the future to inform decision making.²¹ The International Federation of the Red Cross and the Red Crescent (IFRC), through its Solferino Academy, developed a dedicated foresight

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- 16 Paillé, Pauline, Pauline Paillé, James Besse, Hampton Toole, Chryssa Politi, Shruti Viswanathan, Eunice Namirembe, Jyoti Nayak, Sergi Martorell, Iain McLaren, Christopher Tyson, Charlie Wilkening & Jacob Ohrvik-Stott. 2024. *Emerging technologies in the humanitarian sector: Technology Deep Dive Series*. Santa Monica, Calif.: RAND Corporation. RR-A3192-1. As of 17 October 2024: www.rand.org/t/RRA3192-1
- 17 Paillé, Pauline, James Besse, Hampton Toole, Chryssa Politi, Shruti Viswanathan, Eunice Namirembe, Jyoti Nayak & Jacob Ohrvik-Stott. 2024. *Opportunities for Supporting Humanitarians: Technology Guidance*. Santa Monica, Calif.: RAND Corporation. RR-A3192-3. As of 17 October 2024: www.rand.org/t/RRA3192-3
- 18 RAND Europe interview – March 2024.
- 19 Miles, Ian, Ozcan Saritas & Alexander Solokov. 2016. *Foresight for Science, Technology and Innovation*. Switzerland: Springer Nature.
- 20 World Health Organization. 2024. 'WHO Foresight: Monitoring emerging technologies and building futures-thinking.' As of 20 August 2024: <https://www.who.int/activities/who-foresight---monitoring-emerging-technologies-and-building-futures-thinking>; European Commission. n.d. 'Strategic Foresight.' As of 20 August 2024: https://commission.europa.eu/strategy-and-policy/strategic-planning/strategic-foresight_en
- 21 Holt, Ben. 2023. *The Strategic Foresight Book*. Solferino Academy, International Federation of the Red Cross and Red Crescent. As of 20 August 2024: <https://solferinoacademy.com/wp-content/uploads/2024/02/The-Strategic-Foresight-Book-EN-ED02.pdf>; School of international Futures. 2019. *The SOIF Primer on Strategic Foresight*. As of 20 August 2024: <https://cdn2.hubspot.net/hubfs/5401550/SOIF2019+Primer.pdf>

book with an overview of additional foresight methods that can be used in the sector, including: futures triangles (i.e. between the present, future and past), which can be discussed in small breakout groups; 'icon cards', which can be used to prompt discussions on the future of humanitarian response through storytelling; 2x2 scenarios, which explore how two factors interact and can lead to four different outcomes; and 'future personas', which can be used to try to

understand how individuals are likely to react and feel in future situations.²² These examples showcase that foresight methods are accessible to humanitarians even with limited prior knowledge or experience.

The study team gathered and explored three potential foresight concepts aimed at stakeholders across the humanitarian sector, including UKHIIH, who are looking to further explore foresight approaches.

22

Holt, Ben. 2023. *The Strategic Foresight Book*. Solferino Academy, International Federation of the Red Cross and Red Crescent. As of 20 August 2024: <https://solferinoacademy.com/wp-content/uploads/2024/02/The-Strategic-Foresight-Book-EN-ED02.pdf>

Chapter 2. Humanitarian foresight initiative: Emerging technologies

This chapter outlines potential foresight opportunities (Section 2.1), proposes a framework for the development of a humanitarian foresight initiative, and outlines three foresight concepts with promise for the humanitarian sector (Section 2.2). It also presents a proposed pathway for the implementation of one of these concepts: emerging technology narratives (Section 2.3).

2.1. Opportunities for strengthening humanitarian technology foresight

Across the project,²³ various potential opportunities for the further exploration of foresight were suggested by humanitarian stakeholders. These opportunities relate directly to emerging technologies and to wider foresight initiatives that could include emerging technologies in their scope:

1. Ongoing foresight initiatives that track and report how humanitarian and technology trends are developing over time. Such initiatives could be more valuable than time-limited foresight research that offers a view of technologies at a single point in time. Rapidly changing contexts in the humanitarian sector – for

example, relating to volatility of crises and shifting political views of humanitarian aid – are likely to mean insights from the latter approach become outdated quickly. In relation to global health, the World Health Organization launched a dedicated foresight initiative that included monitoring emerging technology developments.²⁴

2. Foresight initiatives looking at the more distant future (focusing on time horizons greater than five years ahead). Humanitarian conceptions of ‘long-term’ are generally likely to be shorter in terms of time horizon relative to other sectors and the wider foresight field: humanitarian delivery organisations’ short-term focus on their core responsibilities for responding to urgent present crises mean it is less likely they will have the cultural inclination or structural capacity to engage with longer-term futures outputs.²⁵ One interviewee stated humanitarians would typically see ‘five years as long-term’²⁶; another noted that lots of work focuses on six-month horizons.²⁷ Current audiences for longer-term foresight are primarily actors whose activities are focused on influencing systemic issues aligned with these time horizons, such as donors or academia

23 Paillé, Pauline, James Besse, Hampton Toole, Chryssa Politi, Shruti Viswanathan, Eunice Namirembe, Jyoti Nayak, Sergi Martorell, Iain McLaren, Christopher Tyson, Charlie Wilkening & Jacob Ohrvik-Stott. 2024. *Emerging technologies in the humanitarian sector: Methodology report*. Santa Monica, Calif.: RAND Corporation. RR-A3192-2. As of 17 October 2024: www.rand.org/t/RR-A3192-2

24 World Health Organization. 2024. ‘WHO Foresight: Monitoring emerging technologies and building futures-thinking’. As of 20 August 2024: <https://www.who.int/activities/who-foresight---monitoring-emerging-technologies-and-building-futures-thinking>

25 RAND Europe interview – March 2024.

26 RAND Europe interview – March 2024.

27 RAND Europe interview – March 2024.

(e.g. to understand how vulnerability profiles of affected populations could shift).²⁸ However, there could be an opportunity to engage other humanitarian stakeholders around the potential benefits of looking beyond five-year time horizons. In a technology context, these benefits could, for example, include enabling the development of private–public partnership and governance initiatives, which typically take many years to nurture and implement, to address ethical risks and improve real-world functionality.

- 3. Trained local partner organisations supporting collaborative horizon scanning** reporting ‘signals’ of change observed in their communities.²⁹ These signals could, for example, include evidence of how technologies are taking on secondary uses, the degree to which technologies are being adopted in their local context, or wider emerging issues relevant to the humanitarian operating environment. This could draw on collective crisis intelligence approaches that gather information from communities affected by crises and frontline responders using artificial intelligence (AI) for more effective crisis mitigation, response and recovery.³⁰ One interviewee felt that local stakeholders could be particularly effective at identifying

‘weak signals’³¹ – early, not easily visible, signals of emergent change.³²

- 4. ‘Visioning’ approaches** that seek to explore common aims for a field and what the future will be like if they are met, supporting humanitarian organisations to envisage how they could develop their own future technology systems.³³ To facilitate this process, foresight practitioners could work in collaboration with service design departments within humanitarian organisations that are owning the development of technology services and systems.³⁴
- 5. ‘Decision intelligence’**, which was seen by one interview participant as a current gap in humanitarian foresight practice.³⁵ This broadly involves identifying specific strategic decisions and associated decision-making structures (e.g. planning, budgeting and risk instruments) that could be supported and influenced by the foresight intelligence produced. Standards for evidence and data could then be developed in partnership with senior decision makers to ensure they have senior buy-in and credibility. Decision intelligence outputs can be tested across various futures and informed by technologies,

28 RAND Europe interview – March 2024.

29 RAND Europe, Athena Infonomics and glass.ai, ‘Ethical implications of emerging humanitarian technologies’ workshop, 29 February 2024.

30 Peach, Kathy, Aleks Berditchevskaia, Issy Gill, Oli Whittington, Eirini Malliaraki & Nasra Hussein. 2021. ‘Collective crisis intelligence for frontline humanitarian response.’ As of 20 August 2024: https://www.ukhih.org/documents/3/collective_crisis_intelligence_for_frontline_humanitarian_response.pdf

31 RAND Europe interview – March 2024.

32 van Veen, Barbara L., & J. Roland Ort. 2021. ‘Unifying weak signals definitions to improve construct understanding.’ *Futures* 134: 102837.

33 Government Office for Science. 2024. ‘The Futures Toolkit.’ As of 20 August 2024: <https://assets.publishing.service.gov.uk/media/66868cd8d9d35187868f4496/futures-toolkit-edition-2.pdf>

34 RAND Europe interview – March 2024.

35 RAND Europe interview – March 2024.

including AI-enabled algorithms and machine-learning processes.³⁶

6. Using design foresight to develop prototypes of alternatives to technologies that carry risks to humanitarian actors.

This combines design and foresight techniques to explore future possibilities through creative design processes, often to design manifestations and representatives of possible futures.³⁷ One interviewee cited an example of developing removable contact lenses with registration details positioned as a future alternative solution to iris-scanning biometrics.³⁸

7. Foundational research on how different humanitarian communities of practice, and regions, conceptualise future issues.

Multiple interviewees highlighted that many organisations conducting work with a focus on future issues do not use the language of the futures and foresight field to explain or design this work,³⁹ suggesting an opportunity for translational programmes or awareness-raising around foresight tools.

8. Foresight initiatives tailored to crisis recovery and aftermath, for example,

to research the second-order impacts of crises and develop visions for future pathways to recovery.⁴⁰

9. Technical literacy building products around emerging technologies

(e.g. explainer content on technical characteristics and hypotheses) that are accessible to humanitarians who could be making decisions about if and how to use them in service delivery.⁴¹

10. Initiatives to track if and how emerging technologies are scaling and developing after pilot programmes.

Several programmes support the piloting and testing of emerging humanitarian technologies (e.g. the World Food Programme’s Innovation Accelerator,⁴² Elrha’s Humanitarian Innovation Fund⁴³ and Innovation Norway’s Humanitarian Innovation Programme⁴⁴) and evaluate the impacts within the boundaries of technology pilots. There is less evidence, however, on how technologies are translated and scaled across different regions after these pilots, or research that systematically analyses the picture across different stakeholders’ programmes.

36 Tellius Inc. 2024. ‘Beyond Analytics: How Decision Intelligence Transforms Information into Action’. As of 20 August 2024: <https://medium.com/@telliusua12/beyond-analytics-how-decision-intelligence-transforms-information-into-action-2b46702510f7>

37 Fu, Zhiyong, & Qing Xia. ‘Design Foresight: A Design Approach that Marries the Futurization and De-Futurization.’ As of 20 August 2024: <https://jfsdigital.org/design-foresight-a-design-approach-that-marries-the-futurization-and-de-futurization/>

38 RAND Europe interview – March 2024.

39 RAND Europe interview – March 2024.

40 RAND Europe interview – March 2024.

41 RAND Europe, Athena Infonomics and glass.ai, ‘Ethical implications of emerging humanitarian technologies’ workshop, 29 February 2024.

42 United Nations World Food Programme. 2024. ‘INNOVATION TO #DISRUPTHUNGER.’ As of 20 August 2024: <https://innovation.wfp.org/>

43 Elrha. 2024. ‘HUMANITARIAN INNOVATION FUND.’ As of 20 August 2024: <https://www.elrha.org/programme/hif/>

44 Innovation Norway. ‘The Humanitarian Innovation Programme.’ As of 20 August 2024: <https://hip.innovationnorway.com/>

2.1.1. Good practice and challenges in humanitarian foresight

Good practice in humanitarian foresight

- Several themes relating to good practice in humanitarian foresight were highlighted by humanitarian stakeholders engaged across project activities, including: **Partnerships with community leaders** (including, for example, religious leaders) could be an important vehicle for engaging crises-affected communities and communities exposed to risks of humanitarian crisis around emerging technology issues.⁴⁵ In the context of foresight, these local partnerships could be extended to '*participatory futures*' – the practice of engaging affected communities in the exploration of future trends, scenarios and visions, often for the purpose of developing an inclusive, shared vision of a desired, or to-be-avoided, future.⁴⁶ One interviewee saw the use of local facilitators – who are stakeholders with critical cultural, contextual and emotional awareness – as vital for all humanitarian foresight processes.⁴⁷ Multiple interviewees highlighted the potential for local facilitators to increase engagement by using local storytelling practices and frames.⁴⁸

- **Technology foresight could better integrate with, or draw inspiration from, adjacent fields of practice**, including:

- » **Design justice** – a design approach led by marginalised communities with the aim to explicitly challenge structural inequalities in existing technologies and wider systems.⁴⁹
- » **Systems change and thinking**⁵⁰ – 'an interdisciplinary approach to understanding how different parts of systems relate to each other, how systems work and evolve over time and what outcomes they produce'.⁵¹
- » **Climate justice** – practices that 'identif[y] climate change as a symptom of unfair and unrepresentative economic, social and political institutions, drawing links to other issues like rising global inequality'.⁵²

In relation to justice-orientated fields, these approaches could be integrated in the scope of the foresight initiative (e.g. by focusing on emerging technologies whose development carry risk of injustices or could foster inequality) or practice (e.g. by involving historically marginalised communities).

45 RAND Europe, Athena Infonomics and glass.ai, 'Ethical implications of emerging humanitarian technologies' workshop, 5 March 2024.

46 UN Global Pulse. n.d. 'Participatory Futures Glossary.' As of 20 August 2024: <https://foresight.unglobalpulse.net/blog/glossaries/participatory-futures/>

47 RAND Europe interview – March 2024.

48 RAND Europe interviews [2] – March 2024.

49 Costanza-Chock, Sasha. 2020. *Design Justice: Community-Led Practices to Build the Worlds We Need*. Cambridge: MIT Press.

50 RAND Europe interview – March 2024.

51 OECD Observatory of Public Sector Innovation. 2024. 'Toolkit Navigator: Systems Change.' As of 20 August 2024: <https://oecd-opsi.org/guide/systems-change>

52 Grantham Research Institute on Climate Change and the Environment. 2022. 'What is meant by "climate justice"?' As of 20 August 2024: <https://www.lse.ac.uk/granthaminstitute/explainers/what-is-meant-by-climate-justice/>

- » **‘Anticipatory Action’ practice** (defined by OCHA as ‘acting ahead of predicted hazards to prevent or reduce acute humanitarian impacts before they fully unfold’)⁵³ could provide a set of established tools and language for framing foresight initiatives, as this is an established area of practice within the humanitarian sector. The experiences of practitioners who have grown this field could also be relevant for considering how to build awareness and support for foresight in the humanitarian sector.⁵⁴
- » **Foresight initiatives risk being unethical in contexts characterised by deep conflict and fragility.**⁵⁶ Inviting audiences to prioritise or consider potential future issues could be seen as unhelpful or a diversion of organisational resources and attention from critical present-day issues in those areas.
- » **Global trend analyses in the humanitarian sector risk being undermined by a lack of cultural specificity or sensitivity if such analyses do not directly involve local researchers,** who can adequately critique if and how such trends translate to local contexts.⁵⁷
- » **‘Visioning’ processes inherently reflect the values and preferences of both participators and facilitators.** Inclusive practice in this context was highlighted as particularly important.

Risks and challenges of humanitarian foresight

Stakeholders also highlighted several delivery challenges and areas where foresight initiatives risk being unethical or counterproductive:

- **Participatory futures approaches** and more experimental foresight approaches utilising serious gaming may not currently be credible in the eyes of senior policymakers working in the humanitarian space. These audiences are more likely to prioritise commissioning or utilising foresight that focuses on evidencing emerging humanitarian risks, or, more broadly, fund programmes that position organisations as relevant actors in conversations around emerging technologies.⁵⁵

2.2. Concepts for humanitarian technology foresight

Across the project research activities, it is notable that participants generally declined to cite specific technology areas as they felt it was more important to focus on the approaches and inclusion in foresight processes.⁵⁸ In participatory workshop conversations, issues identified by participants as priority areas to address

53 Office for the Coordination of Humanitarian Affairs. n.d. ‘Anticipatory Action Toolkit.’ As of 20 August 2024: <https://anticipatory-action-toolkit.unocha.org/>

54 Office for the Coordination of Humanitarian Affairs. n.d. ‘Anticipatory Action Toolkit.’ As of 20 August 2024: <https://anticipatory-action-toolkit.unocha.org/>

55 RAND Europe interviews [2] – March 2024.

56 RAND Europe interview – March 2024; RAND Europe, Athena Infonomics and glass.ai, ‘Ethical implications of emerging humanitarian technologies’ workshop, 5 March 2024.

57 RAND Europe interview – March 2024.

58 RAND Europe interview – March 2024.

over the next decade were also broadly technology-agnostic.⁵⁹ As a result, the study team proposes technology-neutral foresight concepts that can be tailored to identify and explore a range of emerging humanitarian technologies.

Building on the potential opportunities for humanitarian foresight initiatives identified in the previous section, three high-level foresight concepts are presented in Table 2.1. These concepts can be delivered as standalone initiatives, but could also be integrated where their activities are mutually supportive – for example, using the technology horizon scanning initiative to identify specific emerging technologies to be explored through the emerging technology translation and post-crisis visioning initiatives. These concepts were developed with a view to engaging the UKHIH around the concept that is most relevant to their organisational priorities (this is presented in more detail in Section 2.3).

The study team developed the three concepts in line with the following characteristics, based on previous project activities and in consultation with UKHIH:

- **Audiences and objectives:** which stakeholder groups will be the intended users and beneficiaries of initiatives, and the nature of these potential benefits. This includes consideration of typical timelines and time horizons of the initiative.
- **Partnerships:** the potential to involve humanitarian stakeholders in the development of insights and strategic actions, with a particular emphasis on local humanitarian organisations.

- **Integration with current practices:** the potential for the foresight initiative to build upon, or integrate with, existing humanitarian networks, schools of humanitarian practice (e.g. anticipatory action) and other research and foresight communities (e.g. systems thinking or climate justice).
- **Ethical sensitivities:** cultural sensitivities and potential ethical issues that should be considered when implementing the foresight initiative, for example, relating to sensitivities of participant engagement or topic areas.

These four areas aim to collectively reflect the good practice considerations highlighted by stakeholders and presented in Section 2.1, including the central importance of local partnerships and regional equity, the risks of negative ethical externalities when designing and implementing foresight programmes, and the importance of building on existing communities of practice, language and decision-making fora to achieve impact in humanitarian foresight work. Criteria were developed in consultation with UKHIH, based on factors that would be useful to consider when implementing the foresight initiatives.

Three criteria – partnerships, integration with current practices, and ethical sensitivities – were scored against a basic red-amber-green (RAG) rating to highlight the extent to which they are relevant implementation considerations. Green represents high relevance (i.e. partnerships are a prominent and important aspect of the concept methodology, the concept is highly integrated with existing practices, and the concept is associated with

⁵⁹ Participants in the project's workshops cited issues including power asymmetries between technology developers and local users, ensuring there is a 'human in the loop' when using automated systems, managing privacy risks, addressing data extractivism, and supporting humanitarians to consider the unintended secondary uses and consequences of deploying emerging technologies. Technologies that were explicitly cited are out of scope of this project: AI solutions (including automation of humanitarian activities) are not a focus for this project.

a high number of ethical considerations, respectively); amber represents medium relevance; and red represents low relevance. These assessments were informed by the expert judgement of project team members from RAND Europe's Centre for Futures and Foresight Studies (CFFS), based on their experiences of projects using the methodologies outlined in the concepts, and evidence on current humanitarian practice gathered through stakeholder consultation and desk research throughout this project. The study team does not offer a value judgement about these criteria and

relevance scores, as there are trade-offs associated with all of them. The second criterion, integration with current practices, is assessed as follows: high integration has the benefit of project delivery and outputs being familiar to potential humanitarian partners and project audiences, which in turn increases the likelihood that it can be delivered successfully. Low overlap and integration with existing humanitarian practices, however, has the potential benefit of advancing humanitarian practices, and demonstrating new ways for foresight to offer value to the sector.

Table 2.1 Summary of foresight concepts

Foresight concept	Audiences and objectives	Partnerships	Integration with current practice	Ethical sensitivities
Technology horizon scanning coalition	This initiative seeks to track and map emerging humanitarian technology use cases across a range of regions, combining central horizon scanning (of external literature) with crowdsourced reports from a network of local partners. Learnings on emerging hazards, trends and adoption case studies are then shared with network partners – the primary audience.	High relevance: This initiative would build a coalition of local humanitarian organisation partners across a range of regions, who collaborate to share insights on if and how emerging technologies are being adopted in their areas. Periodic surveys would also invite participating organisations to share their views on potential future risks and opportunities associated with these technologies and suggest collaborative solutions.	Medium relevance: The United Nations' <i>UN 2.0</i> strategy ⁶⁰ outlines their plans for developing 'hub and spoke' networks for foresight, as well as wider foresight networks, including the Next Generation Foresight Network, ⁶¹ which could be leveraged in the building of the coalition. More broadly, this approach builds upon 'collective intelligence' practice, which is a nascent area within the humanitarian sector. ⁶²	Medium relevance: Diversity of participating organisations and networks is a critical success factor for this initiative. It is also important to design a fair and equitable process, so that participants get more value from insights than the resources required to participate. Sensitivities relating to stakeholders sharing views on potential risks and unethical practice in relation to technologies must also be managed.

60 UN 2.0: Quintet of Change. n.d. 'Evolving for Impact: Skills and Culture for Tomorrow.' As of 20 August 2024: <https://www.un.org/two-zero/en>

61 Next Generation Foresight Practitioners. n.d. 'Home.' As of 20 August 2024: <https://nextgenforesight.org/>

62 Trigwell, R., J. Phillippo-Holmes, E. Zambrano, J. Bahn, P. Hirani & E. Griesmer. 2022. *Validating Humanitarian Data Analysis Through Collective Intelligence: A Pilot Study*. Geneva: International Organization for Migration. As of 20 August 2024: <https://publications.iom.int/books/validating-humanitarian-data-analysis-through-collective-intelligence-pilot-study>

Foresight concept	Audiences and objectives	Partnerships	Integration with current practice	Ethical sensitivities
Visioning for emerging technologies in crisis recovery	This initiative offers a toolkit for humanitarian organisations to partner with crises-affected communities (both primary audiences) to develop a vision for longer-term future recovery roadmaps from crises, with a particular focus on the roles of emerging technologies within these visions.	Medium relevance: Visioning would necessitate the use of participatory futures, with humanitarian delivery agencies partnering with local communities and specialist local facilitators. To explore the role of emerging technologies in future recovery plans, facilitation products that highlight potential use cases and risks would be developed – this could require partnerships with technology developers and experts.	High relevance: This initiative would be able to tap into existing practice and networks in the recovery cluster of the United Nations Office for the Coordination of Humanitarian Affairs' cluster system. Visioning is a feature of the International Federation of Red Cross and Red Crescent Societies and Solferino Academy's <i>Strategic Foresight Book</i> ⁶³ and the United Nations Development Programme's <i>Foresight Playbook</i> , ⁶⁴ suggesting these approaches have translated to humanitarian contexts.	High relevance: Crisis recovery is a highly sensitive topic, and care would need to be taken not to inadvertently divert attention away from short-term recovery needs or develop visions that exclude local communities or offer an unrealistic vision of the future. Enabling local facilitators to lead and adapt the processes is also important to ensure cultural sensitivity.
Emerging technology narrative initiative	This initiative seeks to explore how crises-affected populations (or local humanitarian organisations) conceptualise and frame emerging technology issues, with a view to reframing narratives in the interests of these communities. Audiences for outputs include technology developers and humanitarian agencies utilising those technologies.	High relevance: To conduct research on regional emerging technology narratives, partnerships with regional humanitarian organisations and specialist local facilitators or community leaders would be needed. While formal partnerships are not necessarily required, extensive engagement with technology developers and commissioners in the humanitarian sector would be needed to ensure impact.	Medium relevance: While narrative theory and approaches (which research how narratives impact stakeholders' behaviours and beliefs) are not mainstream practices in the humanitarian sector, various humanitarian actors in non-governmental organisations and academia have used it – in particular, in relation to migration, where organisations including the Office of the United Nations High Commissioner for Human Rights ⁶⁵ and International Organization for Migration ⁶⁶ have used these tools.	High relevance: Potential sensitivities relating to participants' views on emerging technology risks and issues should be managed.

Source: Study team analysis.

63 Holt, Ben. 2023. *The Strategic Foresight Book*. Solferino Academy, International Federation of the Red Cross and Red Crescent. As of 20 August 2024: <https://solferinoacademy.com/wp-content/uploads/2024/02/The-Strategic-Foresight-Book-EN-ED02.pdf>

64 United Nations Development Programme. 2022. *UNDP RBAP: Foresight Playbook*. As of 20 August 2024: <https://www.undp.org/asia-pacific/publications/undp-rbap-foresight-playbook>

65 Office of the United Nations High Commissioner for Human Rights. n.d. 'Reframing narratives on migration: OHCHR and migration.' Ohchr.org. As of 20 August 2024: <https://www.ohchr.org/en/migration/reframing-narratives-migration>

66 International Organization for Migration. n.d. 'Migration Narratives.' wmr-policytoolkit.iom.int. As of 20 August 2024: <https://wmr-policytoolkit.iom.int/migration-narratives>

Figure 2.1 Overview of the foresight process



Source: Adapted from Voros (2003).

2.2.1. Process framework for foresight concepts

This section outlines how the high-level concepts for UKHIH-coordinated humanitarian foresight initiatives could be implemented, using Voros' foresight process framework⁶⁷ to articulate their scope and activities (see Figure 2.1 below). This is an established and accessible high-level framework for defining the key features and activities of a given foresight project. When considered alongside the practical implementation considerations and recommendations in the next section, the frameworks outlined here represent a playbook for developing foresight concepts that meet the opportunities identified in Section 2.1 of this document.

For each proposed concept, the study team considered the following foresight elements:

- **Inputs** include the data sources that will support the foresight initiative research processes, relating both to externally available data in humanitarian literature and activities and data that will be generated through the foresight process.
- **Foresight** outlines how these inputs will be analysed and utilised using tailored futures and foresight methodologies. While we envisage these processes being coordinated by UKHIH (or an appropriate sub-contractor), they will be co-designed and delivered in partnership with wider humanitarian stakeholders.

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Voros, J. 2003. 'A generic foresight process framework.' *Foresight* 5(3): 10–21. As of 20 August 2024: <https://doi.org/10.1108/14636680310698379>

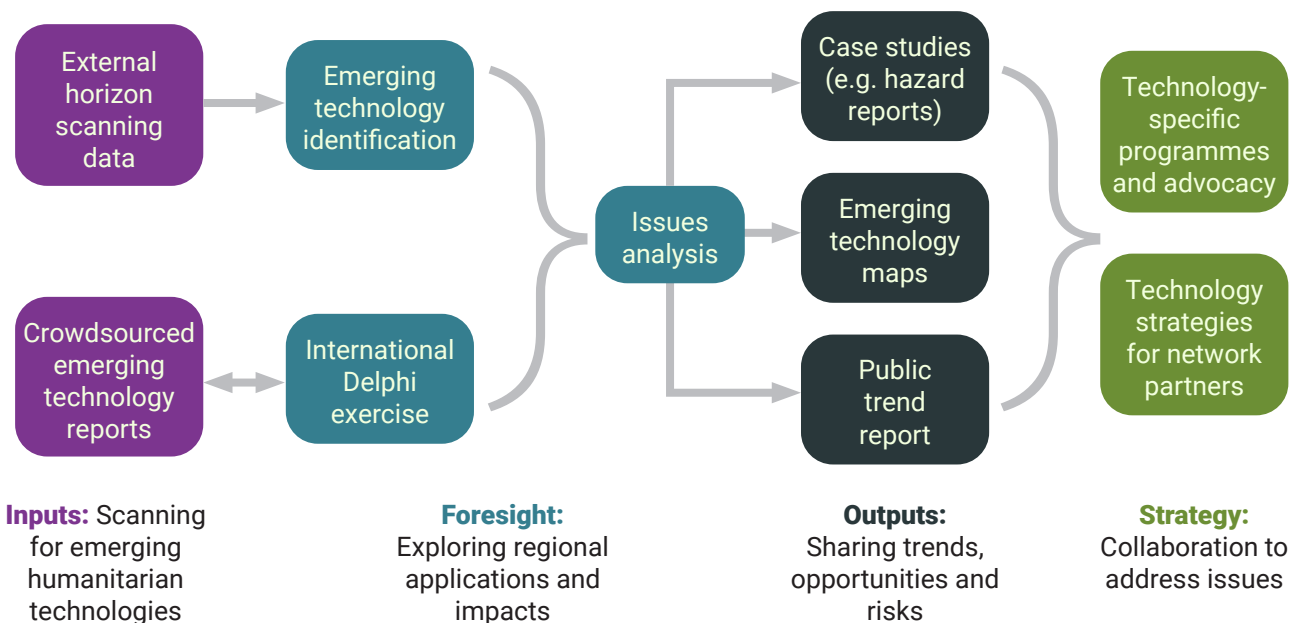
- **Outputs** include artefacts to engage audiences with key themes resulting from the analysis of foresight activities. These outputs will be public-facing by default where they are of relevance to the humanitarian sector, with the caveat that some sensitive details (e.g. where they relate to specific organisations or case studies of harm) may need to be anonymised or omitted.
- **Strategy** covers initiatives that could be developed to respond to the issues and provocations within the foresight analysis and outputs. These initiatives could relate to the strategies of UKHIH, participating organisations, and the wider humanitarian sector (where outputs relate to policy recommendations and other advocacy).

Humanitarian foresight concept 1: Technology horizon scanning coalition

For this concept, a participating network of partners, including national and local humanitarian service delivery organisations across a range of geographies, contribute to all phases of the foresight initiative. They report examples of emerging technology applications in their areas, and share views on the potential impacts (risks and opportunities) and feasibility of emerging technologies, explored through an online Delphi exercise. For the identification of emerging technologies, the views of local actors, including on frugal and community-led innovations, will be complemented by centralised horizon scanning (looking at data sources including global patents, academic research and technology investments) that identifies technologies at an earlier stage of maturity, before they've been locally applied. Once specific technology-related issues are identified and prioritised by the partner network,

Figures 2.2, 2.3 and 2.4 outline how these three foresight concepts could work in practice, building on these four foresight stages and the content outlined in Section 2.1.

Figure 2.2 High-level process framework for technology horizon scanning coalition concept



Source: Study team analysis.

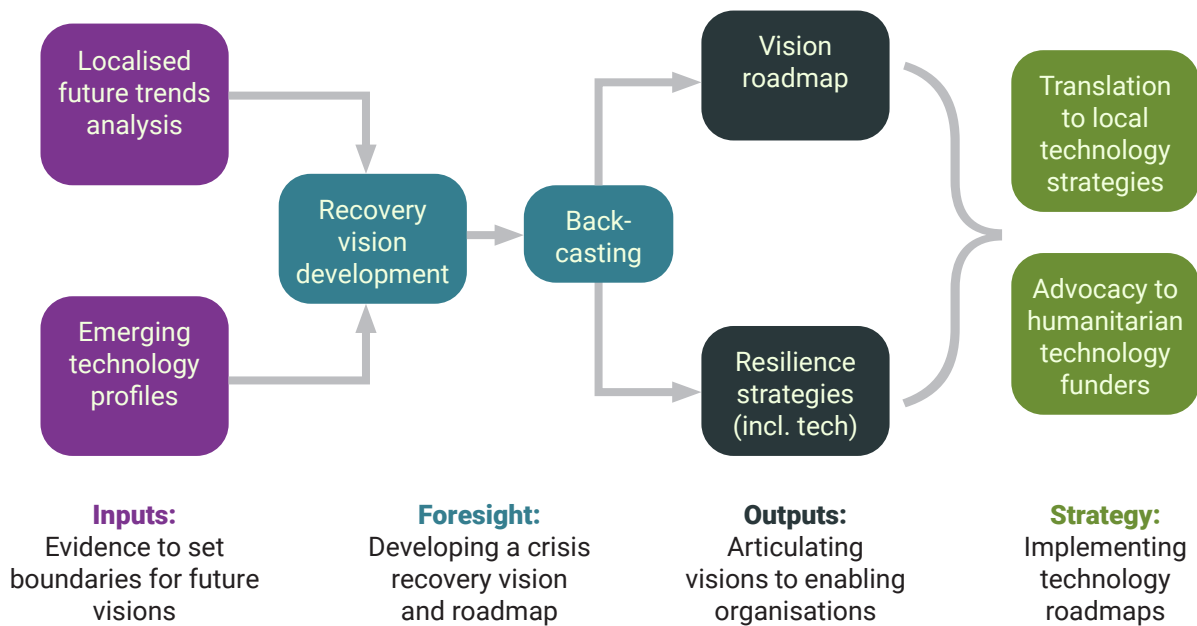
participants will receive and co-develop associated outputs. These might include case studies on potential emerging technology risks or adoption lessons, emerging technology ‘maps’ that outline if and how technologies are being applied across different regions over time, and public-facing trends reports to share relevant insights with the wider sector. These outputs will enable the further development of issue-specific technology strategies, research programmes or advocacy initiatives by funders, non-governmental organisations (NGOs) and international humanitarian organisations invited as network observers.

Humanitarian foresight concept 2: Visioning for emerging technologies in crisis recovery

For this concept, foresight specialists work in partnerships with local communities and trusted local facilitators to develop long-term and medium-term visions for

post-crisis recovery, and critically consider the role emerging technologies could play in these visions as both enablers and barriers. Partnerships would be convened by trusted institutions with a clear role in post-crisis recovery – their make-up will vary depending on regional institutional dynamics, but could include faith leaders, policymakers or civil society. Inputs include technology profiles summarising emerging technologies that could be used to support, or pose potential risks to, regional recovery, and region-specific trends analyses that help to set the background context for the development of recovery visions. A participatory ‘visioning’ process concludes with ‘back-casting’ to produce roadmaps for recovery: a set of development steps and milestones that would need to be achieved to realise the preferred vision (e.g. relating to local economies, health, infrastructure or civic engagement). Once this vision is developed, facilitators work

Figure 2.3 High-level process framework for visioning for emerging technologies in crisis recovery concept



Source: Study team analysis.

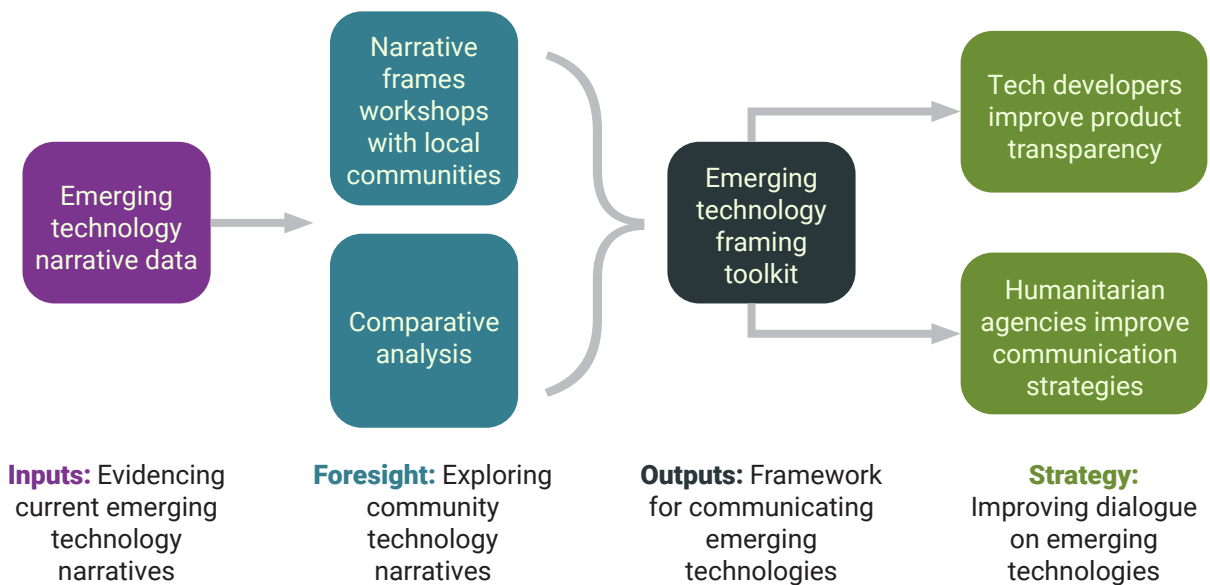
with participants to identify risks to roadmap implementation and develop ‘resilience strategies’ to manage them. Particular focus is given to the role of emerging technologies within these outputs – including identifying opportunities for technologies to positively support resilience and community-building, or considering where emerging technologies could undermine these efforts (e.g. where technologies could increase cyber-threats or enable disproportionate community surveillance). These outputs inform the strategies of stakeholders involved in crisis recovery processes, including local policymakers and civil society and humanitarian funders operating in the region.

Humanitarian foresight concept 3: Emerging technology narratives initiative

This concept seeks to improve dialogue between local communities, technology developers and humanitarian service organisations around emerging technology

issues, through evidencing how conceptualisations of these technologies differ across these stakeholder groups and developing alternative narratives. As an input, data on technology developers’ and humanitarian institutions’ emerging technology narratives (e.g. from media articles, technology sales brochures, policy papers or press releases) is analysed to understand how they currently frame emerging technologies. The foresight process then utilises participatory workshops facilitated by local partners to explore how communities currently understand and frame technology-related issues – for example, including common terms, narratives, metaphors and analogies, trusted (and distrusted) messengers, and values. These institutional and community narratives can then be compared to understand where there is consensus and divergence, which informs the development of a technology-specific ‘framing toolkit’. This output could

Figure 2.4 High-level process framework for emerging technologies narratives initiative concept



Source: Study team analysis.

include content on how to reframe unhelpful narratives relating to emerging technologies, guidance and resources on how to effectively engage communities, and insights on technology risks and opportunities identified by communities. This resource can be used by NGOs, public advocates, media outlets, humanitarian organisations and technology developers to support them to have a better dialogue with local communities around the development and use of technologies (e.g. informing communications and advocacy strategies for NGOs or aiding the design of more transparent and values-sensitive products by technology developers).

2.3. Concept outline: Emerging technology narratives initiative

Following the scoping of the three foresight concepts outlined in Section 2.2, the project team consulted with UKHIIH to prioritise one for further development and iteration. This consultation considered these concepts' potential value to the humanitarian sector, their alignment with the Hub's strategic priorities, and the potential for the Hub to support their implementation. The **emerging technology narratives initiative** concept was prioritised,

with a recommendation to also consider how aspects of the technology horizon scanning coalition could support the identification of emerging technologies to be included within the scope of this initiative.

This initiative is grounded in 'narrative change' theory and methodologies that explore how narratives influence personal and institutional beliefs, behaviours and norms.⁶⁸ Saez and Bryant define humanitarian policy narratives as 'stories and frames constructed and deployed to shape beliefs, attitudes and ultimately decisions relating to humanitarian crises and humanitarian aid – in particular, to justify why, when and where humanitarian aid is needed, who should deliver it and how, and who should receive it'.⁶⁹ These in turn have the potential to influence how policies, emerging technologies and organisational strategies are developed.

NGOs, think tanks and academics operating in the humanitarian sector have previously led narrative change projects across a range of thematic areas, including on the relationship between conflict narratives and policy in Ukraine,⁷⁰ how crisis narratives in indigenous settings risk echoing colonial logic,⁷¹ and how political narratives impact public views on balancing humanitarian aid with domestic

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- 68 Prevention Institute. n.d. 'What is narrative change and why is it different from strategic communications?' [preventioninstitute.org](https://www.preventioninstitute.org). As of 20 August 2024: <https://www.preventioninstitute.org/health-equity-practice-module-2-narrative-change-framing-and-communications-section-1-foundational>
- 69 Kreidler, Corinna, Sonja Hovelmann and Alexandra Spencer. 2023. 'Germany's rise as a humanitarian donor: the interplay of narratives, new foreign policy ambition and domestic interests.' HPG working paper. London: ODI. As of 20 August 2024: <https://odi.cdn.ngo/media/documents/HPG-WP-narratives-GermanyCS-final.pdf>
- 70 Moallin, Zainab, Karen Hargrave and Patrick Saez. 2023. 'Navigating narratives in Ukraine: humanitarian response amid solidarity and resistance.' HPG working paper. London: ODI. As of 20 August 2024: https://odi.cdn.ngo/media/documents/Narratives_in_Ukraine_WP_HPG_final1909_tNvmSZR.pdf
- 71 Mosurska, Anuska, Aaron Clark-Ginsberg, James Ford, Susannah M. Sallu & Katy Davis, J. Ford, S. M. Sallu & K. Davis. 2023. 'International humanitarian narratives of disasters, crises, and Indigeneity.' *Disasters* 47(4): 913–41. As of 20 August 2024: <https://doi.org/10.1111/disa.12576>

spending.⁷² In the technology space, similar approaches have been used to explore issues such as the impact of AI-related narratives on public risk perception⁷³ and governance approaches.⁷⁴

There has, however, been comparatively little focus on how narratives around humanitarian action and technologies intersect historically, although some recent conference events and academic articles (e.g. exploring how AI-related narratives impact conflict-affected communities,⁷⁵ and how multi-national technology companies impact ideas of humanitarian action⁷⁶) suggest this could be a growing area of concern. The proposed initiative is summarised in Box 2.1 below.

2.3.1. Initiative aims

The emerging technology narratives concept seeks to capitalise on these growing communities of practice and interest to develop a flexible methodology for identifying problematic narratives relating to emerging technologies in the humanitarian sector. It also seeks to develop alternative framings that reflect the values and needs of crises-affected populations and local humanitarian actors who work with them – the two stakeholder groups who are the ultimate beneficiaries of this

initiative. This concept centres the individuals and communities who will be using, and who will be impacted by, the emerging technologies.

Other audiences for the initiative who could also benefit from the outputs include: technology developers, who can use them to develop more transparent, user-friendly and trustworthy products; advocacy groups, who can draw inspiration from them for community building and strategic campaigns; and international humanitarian agencies, who can ensure their community engagement and partnership approaches are culturally sensitive. To realise these benefits, this initiative has two core aims:

- To evidence how narratives relating to emerging technologies in the humanitarian sector are understood and framed by at-risk or crises-affected communities and other humanitarian institutions relevant to the local and thematic context.
- To develop guidance and resources that support the reframing of narratives relating to emerging technologies in the humanitarian sector towards the interests of crises-affected communities.

While the activities outlined for the concept could be applied to established, mature technologies, their potential impact on

72 Kreidler, Corinna, Sonja Hovelmann and Alexandra Spencer. 2023. 'Germany's rise as a humanitarian donor: the interplay of narratives, new foreign policy ambition and domestic interests.' HPG working paper. London: ODI. As of 20 August 2024: <https://odi.cdn.ngo/media/documents/HPG-WP-narratives-GermanyCS-final.pdf>

73 Global AI Narratives. n.d. 'About the Global AI Narratives Project.' [ainarratives.com](https://www.ainarratives.com/about). As of 20 August 2024: <https://www.ainarratives.com/about>

74 Global Insight team, United Nations Children's Fund. n.d. 'Technology and the power of narratives in times of uncertainty: A conversation with innovation and forecasting expert Mr. Nicholas Davis.' [Unicef.org](https://www.unicef.org/innocenti/stories/technology-and-power-narratives-times-uncertainty). As of 20 August 2024: <https://www.unicef.org/innocenti/stories/technology-and-power-narratives-times-uncertainty>

75 CDAC Network. 2023. 'Who shapes global narratives in today's AI-enabled world – and what do conflict-affected communities and humanitarians need to know?' [cdacnetwork.org](https://www.cdacnetwork.org/news/who-shapes-global-narratives-in-todays-ai-enabled-world). As of 20 August 2024: <https://www.cdacnetwork.org/news/who-shapes-global-narratives-in-todays-ai-enabled-world>

76 Schläpfer, Isabelle. 2023. 'Humanitarian Technologies as Sociotechnical Imaginaries. How Multi-National Companies Impact on the Idea of Humanitarian Action Through Technologies.' [Researchmanchester.ac.uk](https://research.manchester.ac.uk/en/studentTheses/humanitarian-technologies-as-sociotechnical-imaginaries-how-multi). As of 20 August 2024: <https://research.manchester.ac.uk/en/studentTheses/humanitarian-technologies-as-sociotechnical-imaginaries-how-multi>

Box 2.1 Emerging technology narratives initiative summary

Aims

- To evidence how narratives relating to emerging technologies in the humanitarian sector are understood and framed by at-risk or crises-affected communities and humanitarian institutions relevant to the local and thematic context.
- To develop guidance and resources that support the reframing of narratives relating to emerging technologies in the humanitarian sector towards the interests of crises-affected communities.

Core activities

- Scoping to identify and define the emerging technology area to be explored through the initiative.
- Partnership building and participant recruitment, to reach local delivery partners and participants from relevant at-risk or crises-affected populations, which are both integral for project delivery.
- Technology developers narrative analysis, to analyse how these stakeholders currently frame and explain the technologies they develop.
- Technology narratives workshop(s), co-designed with local partners to explore how participants currently understand and talk about the relevant emerging technology and develop alternative narratives in the interests of participants.
- Emerging humanitarian technology narratives toolkit development, comprising of resources that help reorientate emerging technology narratives towards the interests of the local communities in scope of the project.
- Targeted capacity-building, communications, policy and advocacy campaigns, considering interventions such as community engagement, media training or technology company advocacy that help to realise the toolkit's recommendations.

Additional extension activities

- Non-technology stakeholder narrative analysis, to explore how other stakeholders, such as policymakers, social media users or academics, frame the technology area.
- Narrative frames testing, to further validate outputs of the technology narratives workshop(s).
- Open-source publication of workshop tools, to enable others to engage communities around emerging technology narratives in their regions.

Resource and capability requirements:

- Key activities would take a minimum of ten months (an estimated 77 project team days), to deliver.
- Integration of additional extension activities, and increasing the depth and breadth of all activities, could take up to 22 months (an estimated 182 project team days), to deliver.
- Potential additional costs include fair compensation for narratives workshop participants, data access licenses for narrative analyses, graphic design and report publication and printing (e.g. to distribute physical copies for local community participants).
- Technical research skills and expertise required include desk research, horizon scanning, community-informed participatory research, research participant recruitment, qualitative thematic analysis, participatory workshop design and narrative change theory (although open-source resources are available, as highlighted in implementation considerations).
- Wider capability requirements include research report scoping and writing, recommendation formulation and analysis, graphic design for visual resources, copy-editing, workshop transcribing and analysis, facilitator recruitment and training, partnership building, stakeholder mapping, network building, and engagement planning and delivery.

Source: Study team analysis.

emerging technology areas are greater, as outputs can shape the public debate before it has taken place (and thus before narratives have become entrenched and markets shaped).⁷⁷

2.3.2. Foresight process framework for emerging technology narratives initiative

This section outlines how this initiative can be delivered in practice, drawing on the four overarching stages of Voros' foresight framework (see Figure 2.1). For the purpose of this exploratory activity and based on discussions with UKHH, the study team envisaged a nine-month timeframe for the initiative. For each of these stages, the following is outlined across Tables 2.2 to 2.5:

- **Activities** that fall under each framework stage.
- **Implementation considerations** for activities, encompassing relevant good practice, scoping decisions, potential partner networks and relevant external resources.

- **Estimated resource requirements** associated with each activity, in terms of monetary costs, estimated time requirement and required technical capabilities.

Additional scaling activities that could also be conducted to broaden the initiative scope and outputs, but are not essential or feasible to deliver within a nine-month delivery window, are also outlined for each framework stage. These activities are labelled as additional activities within the tables.

Information and recommendations across these four areas draw on the study team's experience of delivering similar activities, good practice recommendations from humanitarians engaged throughout project phases, and referenced external good practice recommendations.

The process outlined is intentionally adaptable and scalable to different emerging technology and geographic areas, although considerations for deciding on the scope of these areas are included within the inputs section.

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Bonnin, Gaël. 2018. 'Narratives' role in shaping new markets.' As of 20 August 2024: <https://www.impgroup.org/uploads/papers/9826.pdf>

Table 2.2 Overview of inputs for emerging technology translation initiative

Initiative phase: Inputs			
Activity	Outline and rationale	Implementation considerations	Estimated resource requirements
Scoping	<p>The scope of emerging technology areas and geographical reach are first iteratively defined. This process could be participant-led or based on futures research. For the former this entails first selecting regions (at a national or local level), then engaging prospective workshop participants or crises-affected/at-risk populations to identify and prioritise emerging technology applications (such as through an online survey or preparatory workshop, e.g. by adapting the Delphi Method).</p> <p>For a futures-led approach this dynamic is reversed: targeted literature reviews or technology horizon scanning (such as the networked horizon scanning process outlined in Table 2.1) could be utilised to identify technologies of interest. Regions of interest are defined based on their exposure to technology-related risks or potential for regional adoption. Priority stakeholder groups will also need to be scoped for the narrative analyses and targeting of process outputs through stakeholder mapping – this includes major technology developers and potentially also humanitarian agencies or academic institutions with programmes related to the technologies.</p>	<ul style="list-style-type: none"> Trade-offs between participant-led versus futures-led technology identification should be considered: the former is helpful for ensuring participant engagement in subsequent stages and is in the spirit of the humanitarian localisation agenda, but is likely to limit scope to technologies that are more mature (which have more visibility at community level) relative to horizon-scanning approaches that detect early signals of change. Development of bespoke prioritisation criteria⁷⁸ can support a participant-led technology identification process/survey. Criteria could, for example, include technologies' potential impact on communities and levels of understanding and awareness of technology. For geographic scope, conducting foresight across multiple regions enables cross-cultural comparisons and more inclusive research, but increases delivery complexity through the need for additional coordination, analysis and partnership building. 	<p>These phases, conducted in parallel, should collectively take 2–3 months. For participant-led issues identification, the majority of this time will be needed for building partnerships and reaching potential participant communities. For futures-led issues identification, horizon scanning can be scoped and delivered in a similar timeframe (the horizon-scanning phase for this project, for instance, spanned 2 months).</p> <p>A participant-led technology identification approach would require an estimated 16–20 project team days for partnership building and engagement with local communities. A futures-led</p>

78

See for example: Department for Business, Energy & Industrial Strategy. 2020. 'The Prioritisation of Future Innovations: A Consultancy Study for the Department for Business, Energy and Industrial Strategy (BEIS). BEIS Research Paper Number 2020/042.' Assets.publishing.service.gov.uk. As of 20 August 2024: <https://assets.publishing.service.gov.uk/media/5f870c4bd3bf7f633cfcdbd3c/prioritisation-of-future-innovations.pdf>

Initiative phase: Inputs			
Activity	Outline and rationale	Implementation considerations	Estimated resource requirements
Partnership building and participant recruitment	<p>Once scope is confirmed, the foundations for delivering foresight processes outputs should be laid. Partnerships with local humanitarian organisations in the region(s) identified during scoping are essential to ensure foresight methodologies are designed and delivered to be sensitive to cultural context. These partnerships would also support participant recruitment for technology narrative workshops where partners have relationships with local communities and beneficiaries (see Table 2.3). Wider engagement approaches – through community organisations or research recruitment agencies – may also be needed.</p>	<ul style="list-style-type: none"> For partnership building, humanitarian networks including START,⁷⁹ Network for Empowered Aid Response (NEAR)⁸⁰ and Africa Humanitarian Organisation⁸¹ could facilitate access to project delivery partners (particularly in Low- and Middle-Income Countries (LMICs). Humanitarian organisations that support direct engagement with crises-affected communities could also be appropriate partners. Project interviewees with expertise in delivering participatory workshops in LMICs advise that the use of local facilitators who have a nuanced understanding of participant culture, language⁸² and context are essential for ethical and effective delivery. There is also a need to consider the benefits for communities participating in these engagements, communication of these benefits, and processes to present the findings from the initiatives to participating communities and individuals. 	<p>technology identification approach would take a similar amount of time for partnership building and emerging technology trends desk research. Resource requirements for technology identification through networked horizon scanning would take a substantial amount of time.</p> <p>Technical skills required include partnership building, desk research and horizon scanning, experience in community-informed participatory research, and research participant recruitment (although the latter could be outsourced to research recruitment agencies).</p>

79 Start Network. n.d. 'About.' Startnetwork.org. As of 20 August 2024: <https://startnetwork.org/about>

80 NEAR. n.d. 'Who We Are.' Near.ngo. As of 20 August 2024: <https://www.near.ngo/who-we-are-copied>

81 Africa Humanitarian Organisations Network. 2023. 'Solidarity of the African Humanitarian actors is growing.' Reliefweb.int. As of 20 August 2024: <https://reliefweb.int/report/world/solidarity-african-humanitarian-actors-growing>

82 RAND Europe interview – March 2024.

Initiative phase: Inputs			
Activity	Outline and rationale	Implementation considerations	Estimated resource requirements
Technology developer narratives analysis	<p>This activity examines how organisations leading the development of identified emerging technologies frame their innovations. This will first require identification and prioritisation of relevant organisations, for example through interviews with technology market experts or desk research to identify organisations with the largest market shares in the relevant technology market.</p> <p>Narratives used by these organisations to publicly explain their emerging technology (e.g. using technology readiness level)⁸³ are then analysed.⁸⁴ This could be delivered through a combination of automated web reading of these companies' public-facing websites (as utilised for the sector mapping within this project),⁸⁵ interviews with organisational representatives, quantitative semantic analysis⁸⁶ or qualitative discourse analysis⁸⁷ methods.</p>	<ul style="list-style-type: none"> Relevant data sources that reflect technology developers' emerging technology narratives include technology sales brochures, user terms of reference, public-facing websites, annual reports and shareholder reports, policy engagement documents (including consultation responses and transcripts of parliamentary committee hearing witness statements), marketing campaigns and social media account content. Ensure that sample of technology developers includes some organisations based in LMICs, if available. This could enable regional comparisons. Quantitative semantic analysis would only be needed for larger datasets, which in this context is only likely to be where many organisations are actively developing the emerging technology (e.g. AI solutions)⁸⁸. 	<p>Depending on the analysis methodologies used and the scale of the scope, these activities should collectively take 1.5–3 months.</p> <p>Technology developer narratives analysis would require an estimated 14–28 project team days depending on the number of organisations reviewed and range of data sources covered.</p> <p>Additional costs may be incurred where data licences are required. VOSviewer is free to use, although other platforms for wider narrative analyses may have bespoke costing.</p>

83 Technologies presented by organisations could be assessed based on their Technology Readiness Level (TRL). There are nine TRL levels – at the first level are technologies at the stage of principles and concepts and at the highest level are technologies successfully applied in the field.

84 National Aeronautics and Space Administration. 2020. *Technology Readiness Assessment: Best Practices Guide*. As of 20 August 2024: <https://ntrs.nasa.gov/citations/20205003605>

85 Paillé, Pauline, James Besse, Hampton Toole, Chryssa Politi, Shruti Viswanathan, Eunice Namirembe, Jyoti Nayak, Sergi Martorell, Iain McLaren, Christopher Tyson, Charlie Wilkening & Jacob Ohrvik-Stott. 2024. *Emerging technologies in the humanitarian sector: Methodology report*. Santa Monica, Calif.: RAND Corporation. RR-A3192-2. As of 17 October 2024: www.rand.org/t/RR-A3192-2

86 Smith, R. 2011. 'Book Review: Quantitative Narrative Analysis.' *The International Journal of Entrepreneurship and Innovation* 12(1): 78–79. As of 20 August 2024: <https://doi.org/10.5367/ijei.2011.0021>

87 Science Direct. 2023. 'Discourse Analysis'. Scencedirect.com. As of 20 August 2024: <https://www.sciencedirect.com/topics/social-sciences/discourse-analysis>

88 Maslej, Nestor, Loredana Fattorini, Erik Brynjolfsson, John Etchemendy, Katrina Ligett, Terah Lyons, James Manyika, Helen Ngo, Juan Carlos Niebles, Vanessa Parli, Yoav Shoham, Russell Wald, Jack Clark & Raymond Perrault. 2023. *The AI Index 2023 Annual Report*. AI Index Steering Committee, Institute for Human-Centered AI, Stanford University, Stanford, CA. As of 20 August 2023: <https://aiindex.stanford.edu/ai-index-report-2023/>

Initiative phase: Inputs			
Activity	Outline and rationale	Implementation considerations	Estimated resource requirements
Wider narratives analysis (additional scaling activity)	<p>In addition to researching the narratives and frames used by developers of emerging technologies, it may also be desirable to understand how other stakeholders who may have a significant impact on the emerging technology area frame these issues. These stakeholders could, for example, include policymakers developing governance initiatives for the emerging technology area, humanitarian agencies leading relevant pilot or innovation programmes, academic research networks developing relevant discovery research, or public communities. Approaches used for technology developer narrative analysis could be applied to this activity, as could methodologies tailored to specific stakeholder groups – including sentiment analysis of social media⁸⁹ for social narratives, and topic modelling-based bibliometric analysis for academic narratives.⁹⁰ Geographical diversity in the identified stakeholders will be important in understanding if and how narratives change across different countries or regions. This will help develop a more nuanced analysis that gives adequate focus to narratives emerging from LMICs.</p>	<ul style="list-style-type: none"> Commercial tools and services can expedite and support methodologies tailored to specific stakeholder groups – for example, VOSviewer⁹¹ for conducting and visualising bibliometric analyses, glass.ai for sectoral mapping⁹² or Rootcause for social media sentiment analysis.⁹³ Where possible, a consistent analysis framework should be used across different narrative analyses, to enable effective comparisons. This should be semi-structured to ensure areas of known interest (e.g. key terms, visual metaphors, stated company values) are covered while leaving space to identify other themes that emerge from the data. 	<p>Technical skills required potentially include quantitative thematic modelling, qualitative thematic analysis, and desk research (or automated web-reading capabilities) for market analysing and organisation mapping. The skills required will depend on the approach selected.</p> <p>This step can be conducted either through a qualitative or a quantitative approach and does not necessarily require large-scale data.</p>

Source: Study team analysis.

89 Xu, Qianwen Ariel, Victor Chang & Chrisina Jayne. 2022. 'A systematic review of social media-based sentiment analysis: Emerging trends and challenges.' *Decision Analytics Journal* 3: 100073. As of 20 August 2024: <https://doi.org/10.1016/j.dajour.2022.100073>

90 Silwattananusarn, Tipawan, & Pachisa Kulkanjanapiban. 2022. 'A text mining and topic modeling based bibliometric exploration of information science research.' *IAES International Journal of Artificial Intelligence* 11(3): 1057–65. As of 20 August 2024: <http://doi.org/10.11591/ijai.v11.i3.pp1057-1065>

91 VOSviewer. n.d. 'Home.' [vosviewer.com](https://www.vosviewer.com/). As of 20 August 2024: <https://www.vosviewer.com/>

92 glass.ai. n.d. 'Home.' [glass.ai](https://www.glass.ai/). As of 20 August 2024: <https://www.glass.ai/>

93 Rootcause. n.d. 'Services.' [Rootcause.global](https://rootcause.global/services/). As of 20 August 2024: <https://rootcause.global/services/>

Table 2.3 Overview of foresight for emerging technology translation initiative

Initiative phase: Foresight			
Activity	Outline and rationale	Implementation considerations	Estimated resource requirements
Technology narratives workshop(s)	<p>These workshops explore how workshop participants understand and frame the emerging technology area, and technologies in general. While workshop format and agenda should be co-designed with local delivery partners and tailored to the specific thematic context of the emerging technology area, as a starting point it can include:</p> <ol style="list-style-type: none"> 1. Introductions and ice-breaker: Participants are introduced to workshop aims, ground rules and format, and introduce themselves to other participants. The format of workshops is likely to differ based on location (e.g. language of delivery, in-person versus online, presentations of emerging technologies) 2. Eliciting 'cultural frames' for technologies: In breakout groups, participants will discuss how they typically describe technologies, spanning common 'frame elements' (e.g. attitudes and reactions to events or actions)⁹⁴ described in the comparative analysis activity below. This would also include any insights into the 'language' used to frame technologies, and how this might differ depending on the context. The FrameWorks Institute's 'What's in a Frame?' guidance provides a theoretical explanation of the frame elements outlined in session 2 of the workshop agenda, and case studies of leading workshops to explore them.⁹⁵ 	<ul style="list-style-type: none"> Recruitment of local expert facilitators should be overseen by local partner organisations who can lead recruitment and training of these experts. Other networks, such as UNESCO's Global Network of Facilitators,⁹⁶ could also provide access to regional facilitation experts. Participants are people from at-risk or crises-affected populations in the in-scope region(s), or individuals working directly with these communities and acting as advocates on their behalf if recruitment within these communities is challenging (e.g. due to ongoing humanitarian crises). Participant consent forms should be co-developed with local partners to ensure appropriateness. A clear communication plan that outlines the benefits of participation and includes a process to share results of the study with the participants will be important. This helps communities understand the implications of technology being used, and empowers them with an informed understanding of potential risks and opportunities. 	<p>This activity, depending on the number of workshops conducted, can be delivered in 2–3 months.</p> <p>Delivery of a workshop would take 8–12 project team days for workshop design and recruitment. Workshop delivery would require an estimated six project team days per workshop for facilitator capacity and logistics.</p> <p>Workshop participants should also be offered compensation for their time – appropriate amounts will vary, but fees should exceed the regional national living wage standards and be set in consultation with local community project partners.</p>

94 Lempiälä, Tea, Eeva-Lotta Apajalahti, Teresa Haukkala & Raimo Lovio. 2019. 'Socio-cultural framing during the emergence of a technological field: Creating cultural resonance for solar technology.' *Research Policy* 48(9). As of 20 August 2024: <https://doi.org/10.1016/j.respol.2019.103830>.

95 FrameWorks. 2020. 'What's in a Frame?' [Frameworksinstitute.org](https://www.frameworksinstitute.org/article/whats-in-a-frame/). As of 20 August 2024: <https://www.frameworksinstitute.org/article/whats-in-a-frame/>

96 United Nations Educational, Scientific and Cultural Organization. n.d. 'Global network of facilitators.' [ich.unesco.org](https://ich.unesco.org/en/facilitator). As of 20 August 2024: <https://ich.unesco.org/en/facilitator>

Initiative phase: Foresight			
Activity	Outline and rationale	Implementation considerations	Estimated resource requirements
	<p>3. Exploring current narratives for emerging technologies: Participants are introduced to examples of stakeholder narratives relating to chosen emerging technology area(s), developed using insights from the narrative analysis activities at the inputs stage (see Table 2.2.). In breakout groups, they will first do a 'talkback' exercise, where they are asked to share their interpretation of the narratives to explore what was taken away from the message compared to what may have been intended.⁹⁷ They then have an open discussion about aspects of narratives that are unclear, problematic or unhelpful.</p> <p>4. New narratives for emerging technologies: In breakout groups, participants will then come up with alternative narratives to helpfully engage their local communities around emerging technology areas – developing solutions that address problematic aspects of current stakeholder narratives. This could first entail collaborative 'storyboarding', where images and/or text are sequenced to express a narrative,⁹⁸ then an open discussion on other frame elements to consider (e.g. trusted community messengers, language compatibility or relevant cultural values).</p>	<ul style="list-style-type: none"> • The limiting factor for number of participants per workshop will be availability of facilitators. Given the complexity and sensitivity of discussions, all participants should be given opportunities to engage in a dialogue with each other and make substantial contributions throughout – three to six participants per facilitator should be recruited. • Participants should be given tangible, simple examples and definitions of technologies and frame elements through all aspects of the workshop to promote understanding of these unfamiliar concepts. • While agenda items can be scaled up to facilitate more in-depth discussions, as a minimum this format would require half a day to deliver. 	<p>Technical skills required include participatory workshop design, facilitator recruitment and training, narrative change theory (although open-source resources are available, as highlighted in implementation considerations), and workshop transcribing and analysis (this could also be outsourced).</p>

97 Topos. 2019. 'The Topos Approach: The methodology and Science underlying Topos' Taxlandia.' Topospartnership.com. As of 20 August 2024: <https://www.topospartnership.com/wp-content/uploads/2016/04/Topos-Approach-and-Methods.pdf>

98 Cross, Ruth, & Louise Warwick-Booth. 2015. 'Using storyboards in participatory research.' *Nurse researcher* 23(3): 8–12. As of 20 August 2024: <https://doi.org/10.7748/nr.23.3.8.s3>

Initiative phase: Foresight			
Activity	Outline and rationale	Implementation considerations	Estimated resource requirements
Comparative analysis	<p>Post-workshop(s), research insights from the narrative analyses and technology narrative workshop(s) are developed and compared to identify opportunities to reframe current narratives relating to emerging technologies. This analysis framework could be semi-structured, and as a starting point include⁹⁹:</p> <ul style="list-style-type: none"> • Context: The sociocultural and environmental conditions that impact the interpretation and meaning of narratives (e.g. relationship dynamics between humanitarian stakeholders, or crisis and conflict contexts). • Cultural values: Shared principles and ideals that reflect what's important for participants, which may be promoted or risked by emerging technology applications. In the context of technology developers and other stakeholders, organisational values are analogous to communities' cultural values. • Explanatory chains: How narrative ideas and concepts are sequenced and organised, illustrating cognitive models of causes and effects (e.g. how emerging technologies lead to purported benefits and risks). • Explanatory examples, stories, visuals and metaphors: Depictions of particular instances, stories or analogies that illustrate and explain emerging technologies and related issues. 	<p>Development of the analysis framework could be enhanced by asking workshop participants to suggest additional areas they believe are important to consider during analyses (e.g. the role of faith and religion in narratives).</p>	<p>This activity should take one month. Comparative analysis would take 8–24 project team days, depending on the number of workshops.</p> <p>Technical skills required include narrative change theory (although open-source resources are available, as highlighted in implementation considerations), experience working across different cultural and regional contexts, analysis framework development, and relevant data analysis skills for workshop and narrative analysis outputs.</p>

Initiative phase: Foresight			
Activity	Outline and rationale	Implementation considerations	Estimated resource requirements
	<ul style="list-style-type: none"> • Messengers: Institutions or individuals that are prominent in associated debates, and views on their position (e.g. whether they are trustworthy, credible or represent particular political or institutional interests). • Numbers: Quantifications of some aspect of an emerging technology issue that can provide insight into the perceived scale or scope of an emerging technology's development and associated challenges or opportunities. • Tone: The way narratives seek to convey or elicit emotion and sentiments. • Solutions: Proposed approaches to addressing challenges relating to emerging technologies and their narratives. 		
Narrative frames testing (additional scaling activity)	<p>The narratives developed by workshop participants in the 'New narratives for emerging technologies' session of the technology narratives workshop(s) could be further developed and validated through frames testing. Methodologies to be used for this include focus groups or surveys with in-scope communities to test the effectiveness of frames developed in terms of their legibility, coherence and appropriateness.</p>	<ul style="list-style-type: none"> • At the smallest scale, the survey and testing could be conducted with participants from the narrative workshops. Alternatively, recruitment of additional participants could increase the scale and rigour of this activity. • Participant recruitment for surveys could be facilitated by the humanitarian networks and groups identified in the 'Partnership building and participant recruitment' stage. 	<p>Small-scale survey testing with workshop participants could take 2–3 weeks, with a larger-scale public survey taking 2–3 months for design, delivery and analysis.</p> <p>This could take 4–16 project team days, depending on how testing is delivered (i.e. workshop participant engagement or survey).</p> <p>Technical skills required include participant recruitment, survey design and analysis.</p>

Source: Study team analysis.

Table 2.4 Overview of outputs for emerging technology translation initiative

Initiative phase: Outputs			
Activity	Outline and rationale	Implementation considerations	Estimated resource requirements
Emerging humanitarian technology narratives toolkit	<p>Outputs and insights from the foresight and wider research processes are brought together to develop a 'toolkit' on the emerging technology area, comprising resources that help reorientate emerging technology narratives towards the interests of the local communities in-scope of the project. While the final form of this toolkit should be confirmed with local project partners and will depend to some extent on analysis results, this toolkit could include:</p> <ul style="list-style-type: none"> • Guidance on vocabulary and terms that are or are not appropriate to use when discussing emerging technologies.¹⁰⁰ • 'Metaphor cards' and examples of constructive or unconstructive narratives.¹⁰¹ • Guidance on approaches and tools for discussing the impacts of emerging technologies with public communities, and levers for addressing concerns raised. • Examples of participant-led alternative emerging technology narratives developed through foresight workshops. • Profiles and examples of narrative challenges¹⁰² relating to the emerging technology area that should be addressed. • Recommendations for culturally sensitive and appropriate communications on emerging technologies. • Wider recommendations for technology developers, policymakers, donors and other humanitarian stakeholders that arise from project insights. 	<ul style="list-style-type: none"> • A session to discuss helpful outputs to include within the toolkit could be integrated into the agenda of the technology narratives workshop(s), to ensure they reflect the needs and interests of participants. • Where workshops and activities have taken place across multiple regions and cultural contexts, care should be taken to highlight which insights and components are relevant to each region. • Testing of toolkit with workshop participants could enhance and validate included outputs and recommendations. 	<p>Depending on the breadth of the toolkit, it could be developed in 1.5–3 months.</p> <p>Development of the toolkit could take 15–30 project team days, depending on the breadth of content.</p> <p>Additional costs for graphic design and report publication and printing (e.g. to distribute physical copies for local community participants) may be required.</p> <p>Technical skills required include research report scoping and writing, recommendation formulation and analysis, graphic design for visual resources and copy-editing.</p>

100 FrameWorks. n.d. 'Words to Watch toolkit.' Frameworksinstitute.org. As of 20 August 2024: <https://www.frameworksinstitute.org/toolkit/aapvaccine-words-to-watch/>

101 FrameWorks. n.d. 'Reframing Transition Age Foster Youth: A Communications Toolkit.' Frameworksinstitute.org. As of 20 August 2024: <https://www.frameworksinstitute.org/toolkit/reframing-transition-age-foster-youth/>

102 Office of the United Nations High Commissioner for Human Rights. n.d. 'Countering Toxic Narratives About Refugees and Migrants.' MUN Refugee Challenge. Unhcr.org. As of 20 August 2024: <https://www.unhcr.org/media/model-un-refugee-challenge-background-guide-countering-toxic-narratives-about-refugees-and>

Initiative phase: Outputs			
Activity	Outline and rationale	Implementation considerations	Estimated resource requirements
Open-source publication of workshop tools (additional scaling activity)	To enable other local humanitarian organisations and stakeholders to explore how emerging technology narratives could be reorientated to reflect the interests of their local communities, the structure, methodologies and facilitation resources developed for the technology narrative workshop(s) could be published as open-source resources for others to use without cost.	When considering open-source publication of resources, it is vital to gain the consent of local project partners to protect their intellectual property and wider interests. Similarly, it is vital to ensure resources published do not contain any information relating to sensitive participant discussions that take place during the workshop.	To review toolkit and engage partners to ensure they consent to open-source publication, an estimated 4 project team days would be required. This could be delivered in parallel with toolkit development, and would not require additional delivery time.

Source: Study team analysis.

Table 2.5 Overview of strategy for emerging technology translation initiative

Initiative phase: Strategy			
Core activity	Outline and rationale	Implementation considerations	Estimated resource requirements
Targeted capacity-building, communications, policy and advocacy campaigns	<p>To ensure the toolkit and project outputs lead to tangible impacts, it is important to reserve resources to engage key project audiences. While the final form of this strategic engagement should be confirmed with local project partners and will depend on the recommendations and substances of the toolkit, this could include:</p> <ul style="list-style-type: none"> • Community-building initiatives supporting in-scope local organisations to engage their communities around emerging technology issues. • Engagement of communities and/or individuals who have contributed to the workshops, clearly communicating relevant findings. • Scoping of communications campaigns to address unproductive or harmful narratives relating to in-scope emerging technologies. • Scoping of training programmes for humanitarian media professionals and advocates working in in-scope regions and/or technology areas. • Development of ‘theories of change’¹⁰³ and engagement strategies for influencing technology developers to change how emerging technology products are designed, explained and marketed. • Advocacy and engagement campaigns to reflect the wider recommendations for technology developers, policymakers, donors and other humanitarian stakeholders that arise from project insights. 	<ul style="list-style-type: none"> • Training and capacity-building efforts could be integrated with, or draw inspiration from, current and previous programmes, such as WACC’s ‘changing the narrative’¹⁰⁴ initiatives. • Networks to support engagement with technology developers and industry include, for example, IEEE working groups,¹⁰⁵ TechUK,¹⁰⁶ the Internet Society¹⁰⁷ and the Information Technology Industry Council (ITI).¹⁰⁸ 	<p>Depending on the nature of strategic initiatives scoped, these activities could take 2–6 months to deliver (some of which could take place in parallel with outputs development). Initiatives grounded in developing new programmes and delivering engagement campaigns will take longer to deliver.</p> <p>This could take an estimated 10–30 project team days to deliver.</p> <p>Technical skills required will vary depending on the nature of interventions, but stakeholder mapping, network building, and engagement planning and delivery are important horizontal capabilities. Depending on the nature of interventions, local and international knowledge of political, media and technology development networks may be advantageous. Specific methodological capabilities include training design and development and theory of change mapping.</p>

103 Barbrook-Johnson, Pete, & Alexandra S. Penn. 2022. ‘Theory of Change Diagrams.’ In *Systems Mapping*: 33–46. Palgrave Macmillan, Cham. As of 20 August 2024: https://doi.org/10.1007/978-3-031-01919-7_3

104 WACC Europe. 2022. ‘Changing the Narrative on Migration.’ Waccueurope.org. As of 20 August 2024: <http://www.waccueurope.org/projects/changing-the-narrative-on-migration/>

105 IEEE. n.d. ‘IEEE Standards Group Web Hosting.’ As of 20 August 2024: <https://sagroups.ieee.org/>

106 TechUK. n.d. ‘Home.’ Teckuk.org. As of 20 August 2024: <https://www.techuk.org/>

107 Internet Society. n.d. ‘Home.’ internetociety.org. As of 20 August 2024: <https://www.internetsociety.org/>

108 Information Technology Industry Council. n.d. ‘About.’ Itic.org. As of 20 August 2024: <https://www.itic.org/about/>

Initiative phase: Strategy			
Core activity	Outline and rationale	Implementation considerations	Estimated resource requirements
Knowledge sharing with other technology and humanitarian communities (additional scaling activity)	Depending on the nature of the outputs, there may also be scope to draw lessons for a wider range of emerging technology areas and humanitarian activities, such as insights to inform the development of technology governance policies (at organisational or sectoral levels) or developments of standards for technological transparency.		

Source: Study team analysis