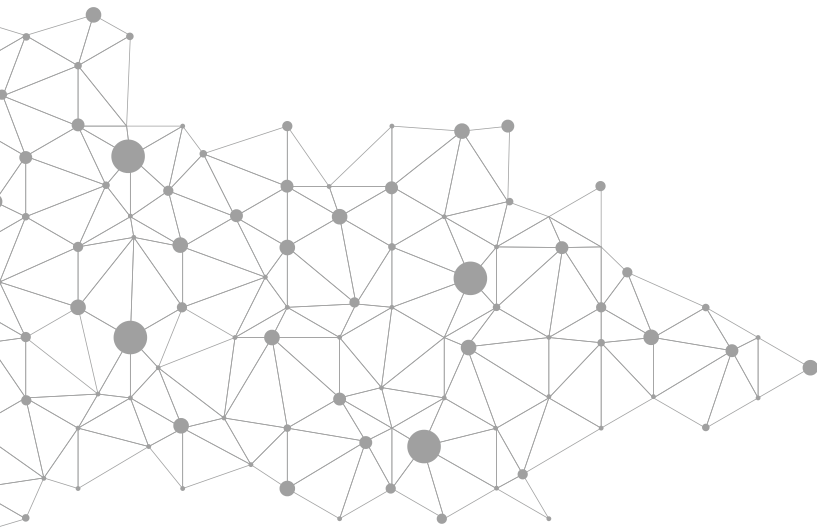




The Rise of Armed Drones

Roadmap and Action Framework
for Coordinated Action to Protect
Humanitarian Operations



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Acknowledgements

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Introduction

The use of drones in conflict and fragile environments has become a persistent and rapidly evolving risk to civilians and humanitarian personnel alike. In 2025, more than 1,800 drone-related incidents affected key humanitarian areas of concern were recorded, marking an increase of 150 per cent compared to 2024, when 734 such incidents impacting food systems, education, health care, access to water, security and safety in IDP and refugee settings were reported. This escalation includes a sharp rise in direct impact on humanitarian operations, which increased from 20 incidents in 2024 to 73 in 2025, contributing to the deaths of at least 159 aid workers.[1] What was once an exceptional threat is now a routine feature of many humanitarian environments, with direct implications for access, security and safety for staff and operations, programme design, humanitarian-military engagement and humanitarian principles. This Roadmap and Action Framework has been developed by GISF, UNHCR, Insecurity Insight and WFP, to support a coordinated, sector-wide approach to mitigating the impact of drones on humanitarian action, whilst also supporting engagement and advocacy for protection of operations in this rapidly changing threat landscape.

The Roadmap and Action Framework is a practical mapping of current and emerging activities across the humanitarian, diplomatic, security, civil-military, technical, and policy spheres. It identifies gaps and overlaps and provide a shared reference point for collaboration and action areas. Effective mitigation of drone-related risks cannot sit with any single actor or constituency and requires broad, sustained input from NGOs, UN agencies, international organisations, governments, militaries, donors, researchers, and the private sector, each bringing different tools, authorities, and perspectives. This roadmap is intended to support that collective effort by making visible what is already underway and signalling where additional leadership, investment, resourcing, or coordination is needed.

This initiative emerged from initial interagency discussions between GISF, UNHCR, Insecurity Insight and WFP, recognising the urgency of the issue, followed by a one-day multi-stakeholder meeting in Geneva in September 2025. That meeting highlighted the extent to which a wide range of initiatives are already in motion, from operational guidance and training, advocacy, policy engagement, legal analysis, security risk management and technical research. At the same time, it became clear that without a light-touch coordination mechanism, there is a risk of duplication, missed opportunities, and fragmented approaches to a multi-dimensional and multi-stakeholder challenge. This roadmap responds to that need by providing a loose but deliberate coordination framework that organisations and stakeholders can align with, contribute to, and build upon.

Finally, this is explicitly a living document. The threat landscape, available mitigations, advocacy and policy environment are all evolving quickly. The roadmap is therefore designed to be updated periodically, reflecting new initiatives, lessons learned, and shifts in context. Its value will depend on continued engagement from across the sector, and on a shared willingness to address the challenges of drone risk not as a niche technical security risk management problem, but as a collective challenge requiring sustained, coordinated policy, research and advocacy action.

[1] Insecurity Insight. 2026. 2025 Explosive Weapons Data. Data retrieved on 04 February 2026.

Objectives

To reduce the harmful impact of drones on humanitarian personnel, operations, and programmes through coordinated, evidence-based action and efforts.

This will be achieved by:

Pillar 1: Establishing a shared data foundation on the humanitarian impact of drones

Systematic data collection and analysis on patterns of drone-related harm affecting humanitarian action

Pillar 2: Practical security risk management guidance

Actionable security risk management guidance, compiling existing material including awareness raising tools and training initiatives, to support humanitarian actors in adapting operations to drone-affected environments.

Pillar 3: Anticipating and shaping innovation and future use

Structured engagement with key stakeholders including UN agencies, NGOs, governments, donors, militaries, researchers, and industry, to drive system-level changes that enable safe and sustained humanitarian access, and delivery.

Pillar 4: Humanitarian advocacy, policy norms, and compliance in the use of drones

Advocacy and engagement to promote the application of international humanitarian law and relevant ethical principles in the development and use of drone and related technologies.

Cross-Cutting Action: Coordination and Stewardship

Light-touch coordination and convening to align initiatives, avoid duplication, and support shared learning across the sector.

The Rise of Armed Drones:

Roadmap and Action Framework for Coordinated Action to Protect Humanitarian Operations



Pillar 1: Establishing a shared data foundation on the humanitarian impact of drones

Build a shared data foundation to understand, prevent, and mitigate the harmful impact of drones on humanitarian personnel, operations, and programmes.

Context

A strong data base of the patterns of harm enables the understanding when, where, and how drones create risks for staff, facilities, operations, humanitarian access and affected communities. Systematic data allows us to distinguish between accidental, negligent, and intentional harm. In a dynamically changing environment, data monitoring and analysis allows for the identification of patterns of use that escalate insecurity and changing nature of threats and risk. With reliable data, organisations can design more effective security risk management measures, advocate for responsible drone governance, and engage with armed actors and regulators from an informed position. Ultimately, data strengthens prevention, improves operational decision-making, and helps ensure that life-saving assistance can reach communities and continue safely and impartially.

Key Actions

- **Monitor and analyse** the evolving harmful impacts of drones on humanitarian personnel, operations, and programmes.
- **Track and assess trends** in drone capabilities, availability, distribution, tactics, and users, with a focus on implications for humanitarian access and safety.
- **Produce regular analytical synthesis products** to ensure that developments in this fast-changing environment are captured, understood and fed back into the response loop, including an annual sector-wide overview of drone-related risks and trends and where necessary periodic or context specific analysis to support operational decision-making, advocacy, and collective learning.
- **Maintain regular information-sharing mechanisms** between NGOs, UN entities, international organisations, and relevant industry actors to identify incidents, patterns, and emerging risks.
- **Support advocacy efforts** by ensuring credible, well-documented data is available for engagement with appropriate actors, authorities and stakeholders.
- **Develop and promote common definitions, taxonomies, and data standards** to ensure interoperability and aggregation of drone-related incident data across organisations and contexts.

Pillar 2: Practical security risk management guidance

Enable immediate and practical approaches to managing drone-related risks, focusing on security risk management measures that humanitarian actors can implement to protect personnel, assets, operations, and programmes.

Context

Drone-related risks are already affecting humanitarian operations, and many organisations are having to adapt in real time, often without clear guidance or shared learning. This makes the rapid identification and exchange of workable, industry leading security risk management approaches and measures, critical. Short- and medium-term measures, including operational adaptations, security risk management practices, and clearly bounded counter-UAV approaches, may reduce risk, exposure and harm even in the absence of longer-term regulatory, political, or technological solutions.

Focussing on what can be implemented now allows organisations to benefit from field experience and best practice, avoid repeating ineffective or high-risk approaches, and apply practical measures that are cost effective, proportionate, lawful, and compatible with humanitarian principles. Collective learning in this space helps the sector keep pace with changing drone tactics, supports more consistent practice across organisations, and strengthens immediate operational decision-making. In doing so, it provides a necessary bridge between current operational realities and longer-term efforts to address the root causes of drone-related risks to humanitarians.

Key Actions

- **Create and maintain a shared resource hub** for humanitarian organisations that curates existing guidance, tools, training materials, lessons learned, and good practice on risk management practice.
- **Synthesise existing practice into practical, field-facing guidance** on drone related security risk management measures, collecting and documenting current mitigation approaches, and key gaps to inform immediate operational risk management and decision-making.
- **Develop or adapt tailored guidance** for different actor groups (NGOs, UN entities, and local partners), reflecting differing mandates, risk profiles, and operational constraints related to security risk management and drone exposure.
 1. Develop a **field-focused training guide** to support staff in identifying drone types and behaviours, strengthening situational awareness and actions to take in environments with drone use.
 2. Develop and refine **guidance for consistent field reporting** on drone activity and analysis on potential impact to ensure information feeds effectively into security risk management processes, risk assessments and decision-making.
- **Strengthen information-sharing arrangements** between relevant actors to allow the exchange of more detailed, context-appropriate information on drone incidents and emerging risks, with clear safeguards for data sensitivity.
- **Strengthen relationships between the NGO community and the UN Interagency Security Management Network (IASMN)** to improve mutual awareness, information exchange, and alignment on emerging drone-related risks, security risk management approaches, and policy discussions.
- **Support informed engagement with various actors with relevant expertise** without endorsement, to track developments in training and service provision.

- **Engage specialist technical partners** (including commercial experts and organisations with UXO/EOD expertise where relevant) to inform practical guidance on risks associated with downed or crashed drones and appropriate safety responses.
- **Develop field guidance and training on safe behaviour around downed drones**, building on existing UXO awareness procedures, to reduce the risk of secondary harm for humanitarian personnel and civilians.
- **Strengthen frontline threat identification and reporting capacity.**
 1. **Explore the feasibility of a secure, AI-supported identification and security incident reporting tool** that allows humanitarian actors to submit images or videos of drones, alongside contextual information (e.g. location, observed behaviour), to support identification, improve data quality, and strengthen aggregated security analysis with clear safeguards on data protection, access controls, and responsible use.
 2. **Use aggregated technical inputs to support rapid updates to security risk management, risk assessments and guidance**, ensuring that emerging drone types, behaviours, and failure modes are reflected in near-term security risk management advice.
 3. These actions also support Pillar 1 by improving the quality, timeliness, and consistency of data feeding into shared data and analysis systems.

Pillar 3: Anticipating and shaping innovation and future use

Anticipate and influence the development and use of emerging technologies, including autonomous and semi-autonomous systems, to prevent harmful impacts on humanitarian operations and personnel, through structured engagement with humanitarian organisations, the commercial sector, militaries, and member states.

Context

Technological innovation in drone and autonomous systems, including AI-enabled, semi-autonomous and fully autonomous functions, is advancing faster than the legal, policy, and operational frameworks intended to regulate their use and govern their impact on humanitarians. Many of the most rapid developments are occurring outside traditional defence and military-industrial actors, driven by commercial and dual-use technology ecosystems that are often unfamiliar with international humanitarian law or civilian protection obligations. Whilst established defence actors may innovate more slowly, they are at least accustomed to engaging, with normative expectations around international humanitarian law and operating in the same environment with humanitarian organisations.

Crucially, the design, testing, and training of future autonomous systems is currently occurring. Data, assumptions, and operational logics being embedded at this stage will shape how these systems behave once deployed, including how they perceive risk, distinguish civilian from military activity, and respond to uncertainty. Without early engagement, harmful practices and permissive norms risk becoming locked in by default to system design.

Proactively shaping the conversation around autonomy allows humanitarian actors, policymakers, and technical developers to identify protection risks before they become systemic, promote safeguards, and encourage the integration of international humanitarian law principles, including distinction, proportionality, and precaution, into system design, training data, testing and operational doctrine. Anticipatory engagement also strengthens advocacy surrounding international humanitarian law by clarifying expectations and responsibilities as autonomous capabilities expand. A forward-looking approach is therefore essential to reducing future harm and protecting humanitarian access in increasingly technology-driven environments.

Key Actions

Early engagement with innovation ecosystems

- **Engage early with military, defence and dual-use technology innovation ecosystems** (e.g. innovation hubs, accelerator programmes, hackathons, and research networks) to understand emerging capabilities, advocate and influence design assumptions before they become embedded to consider humanitarian actors.
- **Support humanitarian participation in military and innovation ecosystems** by enabling NGOs, UN entities, and technical experts to act as mentors, advisors, or contributors, ensuring humanitarian protection considerations are introduced at the point of concept development and during training and exercises.

Design-phase safeguards and standards

- Convene targeted technical briefings with manufacturers, aviation and standards bodies, humanitarian security practitioners, and IHL experts to identify concrete, technically feasible design and operational safeguards that can be built into drone and counter-drone systems to reduce risks to civilians and humanitarian operations.

- **Introduce IHL and civilian protection considerations “by design”** through targeted workshops, briefings, and challenge framing within innovation and military forums, particularly where AI-enabled, semi-autonomous, and autonomous systems are being developed and trained.

Applied innovation for humanitarian use

- **Engage developers of counter-drone technologies through a humanitarian-led innovation challenge** to shape IHL-compliant products suitable for humanitarian use, with NGOs and UN agencies defining real-world operational problems and constraints, and innovators developing detection, alerting, and risk-reduction solutions that are usable, cost-effective, proportionate, and avoid secondary harm to civilians, staff, infrastructure, and humanitarian operations.
- **Identify opportunities for field testing and structured user feedback** by humanitarian actors on relevant prototypes, where appropriate, to steer development towards practical, proportionate, and context-appropriate applications.

Downstream effects and system implications

- **Engage innovators working in high-risk capability areas**, including autonomy and swarming, counter-drone systems, GPS-denied navigation, electronic-warfare resilience, and detection technologies, to surface risks to humanitarian actors early and promote safeguards.
- **Engage with manufacturers, militaries, technology firms, and research institutions** to improve understanding of anticipated technological developments and their potential humanitarian impact.

Pillar 4: Humanitarian advocacy, policy norms, and compliance in the use of drones

Advocacy and engagement to promote the application of international humanitarian law and relevant ethical principles in the development and use of drone and related technologies.

Context

International humanitarian law already applies to the use of drones and related systems; the central challenge is not the absence of legal frameworks, but inconsistent compliance, weak accountability, and limited enforcement. The increasing use of drones by both state and non-state actors has introduced characteristics, including remoteness, anonymity, disposability, and decentralised operation, that can weaken command-and-control structures and dilute understandings of responsible use in practice. This creates heightened risks to civilians and humanitarian operations, particularly where distinction, proportionality, and precaution are poorly understood or inadequately implemented.

Concurrently, existing arms control, export regulations, and aviation governance mechanisms have been stretched with the rapid diffusion of drone technologies, especially where systems are dual-use, modular, or assembled from widely available components. Gaps in transparency, traceability, and oversight allow harmful practices to persist and, in some cases, become normalised. Without sustained advocacy and coordinated engagement across legal, diplomatic, regulatory, and industry-facing forums, there is a risk that emerging norms around drone use will continue to evolve in ways that undermine civilian protection and humanitarian access.

Key Actions

Reinforce IHL compliance and normative expectations

- Frame collective advocacy and humanitarian diplomacy around compliance with existing international humanitarian law, emphasising that drones are fully covered by IHL and that the core challenge lies in implementation of distinction, proportionality, and precaution in practice, not legal ambiguity.
- Leverage existing political and normative instruments (including UN Security Council resolutions and political declarations on the protection of humanitarian personnel) as accountability levers, pressing for operational follow-through rather than symbolic endorsement.

Strengthen accountability and command responsibility

- Promote clearer expectations around command-and-control responsibility for drone operations, recognising evidence that decentralised drone use can bypass senior-level IHL checks and dilute accountability along the chain of command.
- Support approaches that reduce anonymity and deniability in drone use, including transparency and traceability measures that enable responsibility to be established, without assigning investigative or enforcement roles to humanitarian actors.

Use and adapt existing arms control, trade, and regulatory frameworks

- Engage with existing arms control and export control mechanisms relevant to drones and key components (e.g. UNROCA, ATT, Wassenaar, MTCR) to assess where definitions, thresholds, and reporting practices fail to reflect current patterns of dual-use production and proliferation.

- Advocate for improved transparency in production, transfer, and use, including consideration of identifiers, registration regimes, and aviation-linked controls where feasible, drawing on lessons from earlier weapons regulation efforts.
- Promote coherence between arms control, aviation regulation, and humanitarian protection frameworks, addressing current siloes rather than creating new standalone regimes.

Engage industry and standards-setting bodies

- Engage manufacturers, suppliers, militaries, and industry regulators to promote responsible practices, including safeguards against misuse, clearer end-use considerations, and alignment with IHL and civilian protection norms throughout the product lifecycle.
- Encourage early “red-teaming” and standards engagement with industry and militaries, to stress-test safeguards, anticipate misuse pathways, and reduce downstream harm to civilians and humanitarian operations.

Reinforce compliance by non-state armed groups

- Engage established humanitarian mechanisms for dialogue and humanitarian diplomacy with non-state armed groups to reinforce that NSAGs, as parties to armed conflict, are bound by international humanitarian law, and to explore voluntary, IHL-aligned normative commitments on drone use aimed at reducing harm to civilians and humanitarian actors.
- Develop consistent minimum-expectations language for humanitarian dialogue with armed actors regarding drone use, surveillance, and intimidation practices that erode civilian protection and humanitarian space.
- Explore the feasibility of a normative commitment mechanism to reinforce that all parties to armed conflict, including non-state armed groups, are bound by IHL in their use of drones, and to articulate clear, voluntary commitments that clarify expectations and reduce harm.

Link evidence to policy without overreach

- Ensure that credible operational evidence and analysis (from Sections 1–3) is systematically channelled into diplomatic, legal, and policy forums, enabling accountability and advocacy
- Coordinate NGO advocacy positions to avoid fragmented messaging and maximise influence with states, donors, and multilateral institutions.

Cross-Cutting Action: Coordination and stewardship

Establish a light-touch coordination and stewardship function for the roadmap, led initially by UNHCR, GISF, WFP, and Insecurity Insight, and open to other organisations willing to contribute resources or funding, to sustain momentum, track progress across actions, facilitate coordination between actors, and support delivery of agreed priorities.

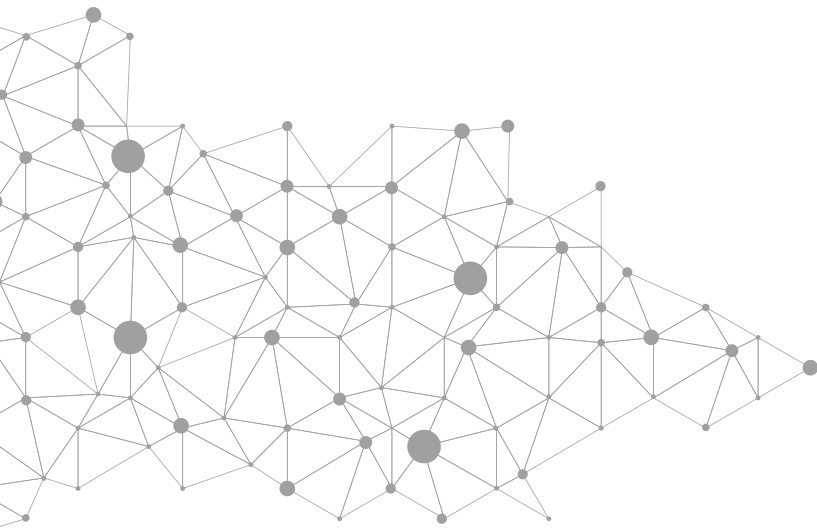
This coordination function would:

- **Maintain oversight of actions across all four thematic areas**, tracking who is doing what and identifying gaps, overlaps, and opportunities for collaboration.
- **Support information flow and learning between workstreams**, ensuring data, security risk management, innovation, and policy efforts inform each other.
- **Convene periodic check-ins or coordination moments** (virtual or in person) to review progress, share experiences and lessons learned, and update the roadmap.
- **Facilitate a dedicated Drone Community of Practice (CoP)** to provide a semi-structured platform for NGOs and non-NGO actors to deepen work on priority themes, maintain momentum between events, and keep resources up to date.
- **Serve as a neutral facilitation platform**, rather than an implementing or enforcement body, enabling others to lead specific actions while avoiding duplication.
- **Manage the roadmap as a living document**, incorporating updates, lessons learned, and new initiatives over time.



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