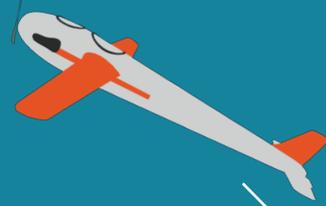


Drones in Humanitarian Action



A guide to the use of airborne systems in humanitarian crises

Executive summary

This in-depth investigation of the use of drones in humanitarian crises is the first of its kind to determine if, how, and under what circumstances drones can add value to humanitarian operations in disaster areas. The most promising uses of drones include:

- Mapping
- Delivering lightweight essential items to remote or hard-to-access locations
- Supporting damage assessments
- Increasing situational awareness
- Monitoring changes

Mapping is the most evolved form of drone use in the humanitarian sector today. The technology is mature and skilled users can quickly produce information products that are of immediate use for humanitarian programmes. Lightweight, consumer-friendly designs and automated work flows make the use of drones for mapping a possibility even for non-technical users. Mapping drones have shown their greatest potential during the recovery phase after a disaster, or for disaster risk reduction work.

The delivery of cargo with drones is a rapidly emerging field that may offer the option to transport small items with high frequency, thus complementing traditional means. Most cargo drone models under development are still prototypes, and pilot projects are currently limited to lightweight, high-value goods.

The use of drones in monitoring and in the delivery of real-time information remains controversial, and the humanitarian community is taking a cautious look at the prospects. Small drones have streamed live video mostly in tactical situations to provide an understanding about potential road blockages or to quickly assess structures and infrastructure.

Interest within the humanitarian community in functions that would allow the assessment and monitoring of large areas is balanced by concerns about perceptions. These applications would require mid- to large-sized drones, which are often associated with military uses. The protection of people's privacy is a separate concern related to monitoring, regardless of the size of the drone.

Interest is building in the use of drones to assist in search and rescue, particularly when drones can be equipped with infrared or other specialized cameras. In the United Kingdom, the use of drones by fire-fighters is catching on. The initial results are promising, but this application is still experimental with too few concrete examples from which to draw general conclusions.

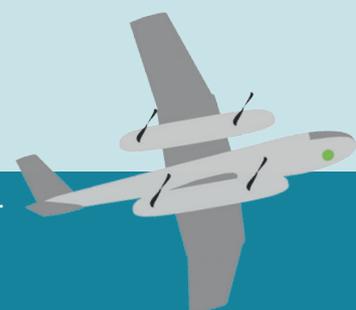
In many situations, drone deployments can deliver a better return on investment than satellite images or aerial photography from helicopters or planes. This is particularly true when detailed imagery of localized events is needed and in cases where imagery has to be taken repeatedly.

As drones are becoming easier to use, the main challenges are shifting from flying the drones to processing, analysing and storing the data that the drones capture. This requires capacity-building within humanitarian organizations or cooperation agreements with NGOs or companies that provide these services. Presently, humanitarian organizations are choosing to work with service providers or in partnership with other non-profit actors or local communities that have an active field capacity for drone deployments.

Drones frequently arrive too late to be useful in the immediate aftermath of a disaster. Organizations can address this issue by building local or regional capacity and integrating drones into their emergency response toolkits.

Inadequate regulations can be a substantial hindrance to deploying drones in crises. In many countries, regulations do not exist and where they do exist, they typically do not include provisions for emergencies.

The full report "Drones in Humanitarian Action - A guide to the use of airborne systems in humanitarian crisis" is available at drones.fsd.ch.



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