Humanitarian Aid and Artificial Intelligence: Where is Social Justice?

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1. Introduction

Something has shifted in how humanitarian aid reports talk about their own field: political and security concerns now sit at the centre of decisions that used to be framed almost purely around need. International organisations look more bureaucratic and more politicised than they did a decade ago, and that shift makes it harder for them to deal with the structural roots of conflict rather than just its symptoms (Harvard Humanitarian Initiative, 2026).

Part of the problem is sheer numbers. More actors are involved than ever, needs keep rising, and the money never quite keeps pace – a combination that quietly erodes how effective any single response can be. This challenge

is also closely related to the growing scale and complexity of humanitarian crises. The number of people requiring assistance continues to increase, while humanitarian operations involve an expanding range of international organisations, governments, local actors and other stakeholders. Despite this growing demand, available financial resources remain limited. The gap between needs and funding places considerable pressure on humanitarian organisations and can affect their ability to provide assistance in a timely and equitable manner. As a result, humanitarian action increasingly depends on decisions about how limited resources should be distributed, which populations should be prioritised, and where interventions are likely to have the greatest impact.

Artificial intelligence has entered this picture as a tool for coping with that complexity: a way to stretch scarce resources further and respond faster in conflict zones where older operational models keep falling short. It can genuinely help on the efficiency side. But efficiency isn't the same as fairness, and AI tools raise serious ethical questions. Thus, aid organizations/the international community/whoever should consider issues of inequality, aid selection, and human rights violations in their pursuit of optimisation. (Global Humanitarian Overview 2026: A Collective Push to Protect Millions of Lives, 2026).

Ultimately, the value of AI in humanitarian contexts should not be measured only by how much time or money it can save. Its contribution should also be assessed in terms of whether it strengthens equitable access to assistance, protects the rights and dignity of affected populations and supports rather than replaces human judgment. In conflict zones, where humanitarian decisions can directly affect people's safety and survival, technological efficiency must therefore remain subordinate to humanitarian principles.

2. Bureaucratisation and the limits of humanitarian aid

As the international humanitarian system has grown, so has the machinery around it. Coordination has improved, but so has the paperwork.

Professionalising humanitarian organisations has given them more capacity to act, but it has also tied them more tightly to bureaucratic procedures, to accountability regimes, and to the priorities of whoever is funding them. That dependency puts real pressure on the principles of neutrality and independence that are supposed to define the sector.

The growing diversity of participants on the global stage, from classical international organisations and NGOs to private foundations and corporations, makes for a highly fragmented setting which generates structural friction and inefficient work on the ground. Due to the lack of coordination of numerous players operating in the same fields, there is always some overlap of initiatives and money wasted, which leads to the imposition of various bureaucratic procedures on the local population. On the other hand, with the arrival of new players who have financial means to back their

operations, the competition for resources gets stronger, and the emphasis shifts from the effectiveness of actions to the visibility and speedy raising of funds. Furthermore, all this is aggravated by the fragmentation of technology, with more and more incompatible systems emerging and keeping information locked up inside corporate and institutional fences and thus preventing the formulation of any coherent strategy. The absence of proper governance structures that could incorporate all these operational methods into a single one causes international response to be highly fragmented (Parsa et al., 2026).

It is in this crowded and complex landscape that artificial intelligence (AI) is increasingly presented as a technology that can help organisations do more with less and manage available resources more intelligently. AI provides tools for analysing information, forecasting events, supporting decision-making, and improving the way tasks are carried out. Within the field of humanitarian action, these capabilities can help organisations operate more efficiently and effectively throughout the different phases of a crisis (Lythreatis et al., 2026).

Overall, AI offers clear possibilities for improving the way humanitarian organisations manage information and resources. As Lythreatis et al. (2026) demonstrate, its ability to support forecasting, analysis, and decision-making can be useful across different stages of a crisis. Nevertheless, the effectiveness of these technologies depends on the organisational context in which they are introduced. AI may help organisations do more with limited resources, but it does not by itself resolve the deeper issues of bureaucracy, dependence on donors, fragmentation, or coordination that characterise the international humanitarian system. Its contribution therefore needs to be considered as part of a broader discussion about how humanitarian organisations can use new technologies while maintaining their responsibilities towards the populations they are intended to assist.

At the same time, the argument that AI can help organisations "do more with less" should be considered carefully. Greater efficiency does not necessarily mean that humanitarian needs will be addressed more fairly or that organisational problems will disappear. AI depends on the quality of the information available to it and on the way organisations choose to use its outputs. Nevertheless, as Lythreatis et al. (2026) demonstrate, AI has the potential to become an important support tool for humanitarian organisations, particularly when they have to manage large amounts of information and make decisions under considerable time and resource constraints.

3. Artificial Intelligence in humanitarian aid

AI's footprint in humanitarian operations has grown fast. Satellite imagery analysis, predictive modelling, early warning systems, algorithms that route resources, and tools that process information automatically: all of it now

feeds into decisions that used to rest entirely on human judgment, often in real time (Lythreatis et al., 2026; Efe, 2022).

These systems can sharpen disaster forecasting, flag which populations are most at risk, tighten up logistics chains, and support recovery work on the ground (Lythreatis et al., 2026; Omidiji et al., 2026). None of that guarantees social justice, though. A system can be technically excellent and still get the ethics wrong.

That gap is exactly why leaning so heavily on algorithms to make decisions that affect the lives of millions of vulnerable people deserves serious scrutiny (Coppi et al., 2021).

At least, the growing presence of AI in humanitarian operations presents both opportunities and challenges. The work discussed by Lythreatis et al. (2026) and Efe (2022) suggests that AI can make certain humanitarian activities faster and more efficient. However, the concerns raised by Coppi et al. (2021) and Omidiji et al. (2026) show that efficiency alone is not enough. The use of AI needs to be accompanied by transparency, human oversight, and careful consideration of the limitations of the data and models being used. In humanitarian contexts, where decisions can have significant consequences for people's lives, technological efficiency should therefore remain connected to human responsibility and judgement.

AI can help in speeding up humanitarian aid delivery and being more reactive by forecasting humanitarian crisis situations and allocating the required resources to where they are most needed. However, using AI is not without dangers, including wrong data input, discriminatory algorithms, and invasion of privacy. This is why we need responsible use of AI, ensuring human rights are respected and the "do no harm" principle is adhered to. The literature neither suggests that the use of AI should be unconditional nor that AI must be shunned from every aspect of society. The key idea is that the value of AI is determined by its design and implementation (Beduschi, 2022).

AI may contribute to the prediction of a crisis, resource allocation, mapping, and even communication with those who have been affected. At the same time, bad data, biases, and lack of protection of privacy may lead to these technologies becoming tools of exclusion, discrimination, or even harm.

Consequently, responsible AI implementation means the consideration of risks, data protection, transparency, accountability, and community concerns (Beduschi, 2022).

The use of AI cannot be governed merely by efficiency and technological advancement, but also by the consequences of decisions made through these tools. Data and algorithms used for decision-making processes need to be evaluated according to the circumstances in which they operate, the rights of those who may be impacted, and any possible risks of damage that might occur even when the decisions are complex and hard to contest. This means that it is crucial to facilitate transparency, data protection, account-

ability, and community involvement in the design of such technologies. In conclusion, both articles state that AI can play an important role in humanitarian intervention, but only under the condition that its application is based on ethical standards and safeguards (Coppi et al., 2021; Beduschi, 2022).

3.1 Ethics of Artificial Intelligence and social justice in humanitarian contexts

Using AI in humanitarian work forces us to confront questions about transparency, equity, and human rights that the sector has not fully worked out yet (Coppi et al., 2021).

Algorithms are often opaque, and that opacity cuts against basic humanitarian principles. Coppi et al. (2021) argue for explainability as the answer to a mix of transparency, interpretability, and accountability that lets people actually understand and challenge the decisions a system makes about them.

Bias is another big concern. AI systems learn from historical data, and historical data carries historical inequality with it. Left unchecked, these systems can discriminate against certain groups or quietly exclude the people who most need help.

There is also the data question. Mass data collection, biometric tools, and partnerships between humanitarian organisations and big tech firms risk turning aid recipients into data sources and test subjects, creating new dependencies and inequalities on top of those aid is supposed to address.

None of the above is to say that artificial intelligence should be denied use in humanitarian activities. Rather, the deployment of AI should be strategic and done through safeguards such as mechanisms that ensure transparency, reduction of bias, proper human oversight, and privacy (Omidiji et al., 2026).

The adoption of AI should not occur in a vacuum, isolated from social realities and local power dynamics. As Kumar and Vidolov (2016) argue, humanitarian effectiveness is intrinsically linked to the quality of community engagement. If the introduction of new technologies is not accompanied by an ethical re-evaluation of how we interact with affected communities, it risks replacing human dialogue with distant algorithmic models. The danger lies not merely in the technology itself, but in the possibility that the pursuit of "technological efficiency" might silence local agency and overlook the cultural nuances that only direct engagement can capture.

Nonetheless, in all this change, social justice has to be a principle at the heart of things. Artificial intelligence can assist humanitarian decision-making, but it should not undermine the reasoning and judgment of human beings.

AI in humanitarian action should only be developed and used in a manner consistent with humanitarian principles, ensuring that decisions

can be understood, evaluated, and challenged, and that harm to vulnerable populations is prevented. The adoption of automated systems requires transparency, explainability, auditability, and accountability. The literature argues that humanitarian principles should guide not only human decisions but also the development and use of technologies (Coppi et al., 2021).

3.2 Institutional readiness, local agency, and the digital divide

Beyond abstract ethical principles, the practical implementation of artificial intelligence in humanitarian aid encounters formidable structural barriers related to institutional readiness and the global digital divide. While major international non-governmental organizations and United Nations entities possess the financial capital and technical infrastructure required to experiment with predictive analytics, machine learning, and not to forget satellite mapping, and local front-line responders who, to stress this point overwhelmingly execute operational delivery on the ground are frequently excluded from this digital transformation process (Kumar & Vidolov, 2016). This pronounced technical asymmetry risks deepening existing power imbalances between the Global North, where the vast majority of humanitarian algorithms are engineered, and the Global South, where these automated systems are actively deployed (Coppi et al., 2021).

When algorithmic architectures are developed in isolation from local knowledge, they regularly fail to account for informal protection networks, cultural nuances, and community-level coping mechanisms. For instance, a purely data-driven model might classify a contested border area as entirely inaccessible based on historical conflict metrics, thereby recommending the suspension of relief distributions. However, local civil society actors on the ground often possess the historical trust, diplomatic rapport, and contextual awareness necessary to navigate those exact spaces safely and deliver critical assistance. Consequently, uncritical reliance on automated decision-making can inadvertently disenfranchise local leadership, silence community voices, and actively undermine the broader "localization agenda" aimed at transferring operational autonomy and funding directly to local organizations (Global Humanitarian Overview, 2026).

Furthermore, the physical and digital infrastructure needed to maintain advanced AI models—such as high-speed connectivity, secure cloud servers, and uninterrupted power supplies—is precisely what is most fragile or absent in acute conflict settings. Expecting humanitarian operations to depend on high-tech computational models in resource-scarce environments introduces severe operational vulnerabilities (Omidiji et al., 2026). If an aid agency becomes overly reliant on automated resource allocation platforms, any technical malfunction, cyber security breach, or telecommunications blackout risks paralyzing emergency relief efforts at the exact moment populations face catastrophic danger.

To overcome these structural pitfalls, the integration of AI must prioritize institutional capacity building for local organizations, incorporating co-design methodologies, open-source software frameworks, and shared technical governance (Beduschi, 2022; Lythreatis et al., 2026). Rather than imposing top-down technological fixes that reinforce donor dependency, the international community must ensure that digital innovation directly supports community-led resilience and preserves local agency.

4. Conclusion

AI gives humanitarian organisations a real chance to respond faster and more effectively to crises that keep getting more complicated (Lythreatis et al., 2026; Efe, 2022).

That opportunity only holds up if it comes with serious governance: ethical oversight, transparency, accountability, and humans who stay in the loop (Coppi et al., 2021; Omidiji et al., 2026). The use of artificial intelligence in humanitarian crises can improve efficiency, but these benefits depend on how the technology is governed. Coppi et al. (2021) highlight the importance of explainability when AI is used in humanitarian settings. People affected by humanitarian decisions, as well as field workers, should have a reasonable understanding of why an algorithm reaches a particular decision. This is especially important in situations involving the distribution of resources or the identification of populations at risk. When these decisions cannot be adequately explained, it becomes more difficult to hold the system and those responsible for it accountable, which can also affect trust in humanitarian organisations.

Omidiji et al. (2026) further emphasise that the effectiveness of an AI system should not be assessed only through its technical performance. Human oversight remains important, particularly when algorithms produce biased results or fail to account for local circumstances. In practice, human-in-the-loop approaches can provide an opportunity to review and question algorithmic decisions before they have serious consequences. Human judgement is therefore still necessary, as it can take into account factors that may not be represented in the available data. In humanitarian contexts, where decisions can directly affect people's lives, this human oversight is an important safeguard against the limitations of automated systems.

No efficiency gain is worth trading away humanity, impartiality, neutrality, and independence – principles the whole system is built on.

Kumar and Vidolov (2016) argue that humanitarian effectiveness lies not merely in the technical precision of the systems adopted, but in the depth of interaction with local populations. The danger of an overly technology-centric or "technicist" approach is the reification of affected communities; they cease to be viewed as active partners and are instead treated as mere data points or passive recipients of interventions. When technology replaces direct dialogue, the opportunity to integrate local knowledge and

cultural nuances, elements essential for any intervention to be truly relevant, is lost.

However, the growing use of AI should also be understood in relation to the institutional problems that already exist within humanitarian action. If humanitarian organisations are already dealing with complex bureaucratic structures, funding pressures, and difficulties in coordinating different actors, introducing AI does not automatically remove these problems. In some cases, it may even add another layer of complexity. Organisations need to decide which systems to use, what data should be collected, who should have access to them, and how decisions supported by AI should be evaluated. Lythreatis et al. (2026) therefore provide an important starting point for understanding AI as a tool that can improve efficiency, while also requiring organisations to consider how it fits within the wider structure of humanitarian action.

So the real question is no longer whether AI belongs in humanitarian aid. It is whether its development and use actually push toward social justice, cut inequality, and protect the rights and dignity of the people who need protecting most.

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