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FORUM: Economic and Social Council (ECOSOC)

TOPIC: Embracing innovation and adapting new technology in humanitarian assistance

STUDENT OFFICER: Alexandra-Elpida Zisi

POSITION: Deputy President

PERSONAL INTRODUCTION

Dear Delegates,

My name is Alexandra-Elpida Zisi, I'm 16 years old and I'm currently a 10th grade student at Avgoulea-Linardatou Private School. Over the past year and a half I have actively participated in a total of 5 MUNs, mainly on Economic or Financial committees, and therefore it is an honor to serve as a Deputy President at ECOSOC on this year's AML-MUN conference. Even though it is my first time co-chairing, I must assure you that you are in good hands.

My aim for this conference is to make sure that all of you guys get a chance to participate, have fun and overall enjoy yourselves throughout the two days we will be collaborating, while engaging into enthralling debates. I'm looking forward to meeting each and every one of you and I hope my study guide helps you get a better understanding of the topic we will be discussing.

Should you have any questions, do not hesitate to contact me via my email: alexandrazisi849@gmail.com

Kind Regards,

Alexandra-Elpida Zisi

TOPIC INTRODUCTION

Humanitarian crises, including armed conflicts, natural disasters, pandemics, and forced displacement, are getting more complex, therefore it is essential that we have more rapid, extensive, and flexible responses. Innovation and new technologies are currently revolutionizing humanitarian aid for that matter. Technologies such as artificial intelligence (AI) and machine learning are able to assist in predicting future outcomes while drones can quickly deliver supplies, and blockchain can make aid distribution more accessible. These offer chances to improve how fast, accurate, and well humanitarian operations work.

The application of these technologies has proven to be very promising. For instance, artificial intelligence-enabled data analysis enables organizations to forecast disaster impact and invest before the disaster occurs. Unmanned aerial vehicles (UAVs) can be employed to deliver

medical kits into war areas or other remote areas. Biometric systems facilitate the registration of refugees, avoid fraud, and direct aid to those in need. Blockchain can also contribute in making funding more transparent and cut down on corruption in large aid programs.

However, embracing these innovations is not without problems. Ethically concerned issues such as algorithmic bias and data privacy become a concern around the use of technology on marginalized communities. The digital divide complicates matters since certain demographics are unable to obtain the necessary tools to fully benefit from new tech effectively. Additionally, placing excessive focus on tech could lead us to overlook the skills people already have, potentially leading to over-reliance on technology as opposed to acting autonomously.

If technology is to be applied for human development assistance in the best manner, there needs to be an even approach. This approach ought to give more emphasis to ethical standards, equitable access, and prolonged partnerships between governments, NGOs, private sector businesses, and beneficiaries. There needs to be strong norms within the international community so that technology is applied with regard to primary humanitarian tenets such as neutrality, impartiality, and humanity.

DEFINITION OF KEY TERMS

Innovation

"A term used to describe the process of developing and implementing new ideas, methods, or products to solve problems or create value. It encompasses everything from small improvements to groundbreaking changes that transform industries and societies. Innovation requires creativity, risk-taking, and often collaboration across disciplines"[1]

Humanitarian Innovation

"A term used to describe the systematic development and adaptation of new approaches to improve humanitarian response. This involves creating better solutions for delivering aid, whether through new technologies, processes, or partnerships, while emphasizing local needs and stakeholder involvement**"**[2]

Humanitarian assistance

"the aid and action designed to save lives, alleviate suffering, and maintain and protect human

[1] *Oslo Manual 2018* | *OECD*, www.oecd.org/en/publications/oslo-manual-2018_9789264304604-en.html Accessed 09 Aug. 2025.

[2] "Innovation in Humanitarian Action." *ALNAP*, alnap.org/help-library/resources/more-than-just-luck-innovation-in-humanitarian-action/ Accessed 10 Aug. 2025.

dignity during and in the aftermath of man-made crises and natural disasters, as well as to prevent and strengthen preparedness for the occurrence of such situations"[3]

Emerging Technologies

"A term used to describe new or rapidly advancing technologies that have significant potential to impact society and industries. These include AI, biotechnology, and quantum computing, which are transforming how we live and work while raising important ethical and regulatory questions"[4]

Data-Driven Decision Making

"A term used to describe the practice of basing important decisions on data analysis rather than intuition. By systematically collecting and interpreting relevant information, organizations can make more objective, evidence-based choices that improve outcomes"[5]

Blockchain Technology

"A term used to describe a secure, decentralized digital ledger system that records transactions transparently. While known for powering cryptocurrencies, its applications now include supply chain management, smart contracts, and secure data sharing, offering tamper-proof record-keeping"[6]

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[3] "Humanitarian Assistance." *INEE*, inee.org/eie-glossary/humanitarian-assistance. Accessed 27 June 2025.

[4] "Top 10 Emerging Technologies of 2023." *World Economic Forum*, www.weforum.org/publications/top-10-emerging-technologies-of-2023/ Accessed 10 Aug. 2025.

[5] Lee, Sarah. "Data-Driven Humanitarian Response." *Number Analytics // Super Easy Data Analysis Tool for Research*, www.numberanalytics.com/blog/data-driven-humanitarian-response-forced-displacement#:~:text=A%3A%20Data-driven%20humanitarian%20response%20refers%20to%20the%20use,decisions%20and%20respond%20more%20effectively%20to%20humanitarian%20crises Accessed 10 Aug. 2025.

[6] Susnjara, Stephanie, and Ian Smalley. "What Is Blockchain?" *IBM*, 9 July 2025, www.ibm.com/think/topics/blockchain Accessed 10 Aug. 2025.

BACKGROUND INFORMATION

Nature of Humanitarian Crises

Figure 1: People affected by Tropical Cyclone Chido in Mozambique[7]

Ongoing conflicts alongside climate change have increasingly politicized regions of the world and shaped them into emergencies. A case in point are the cyclones Mozambique suffered from in 2019. Cyclones Idai and Kenneth caused the displacement of over 2 million people. The surveying and damage assessment mapping post-cyclone was rudimentary aiding in humanitarian work. With modern technology, the use of drones was an unparalleled advancement as they provided video surveillance.

There is an unparalleled modern advancement in the use of drones and video surveillance aiding in surveying and damage assessment post natural disasters. Disbased on cyclones Idai and Kenneth yield a multi-thousand displaced population. The continuous conflicts alongside the climate shocks in Somalia have been posing more problems and combined with the hostility of Mexico, are displaced in the hostility. Urban warfare in Yemen poses more problems because of the large-scale destruction of essential buildings in densely populated areas.

Modern crises are said to have structural purposes. The humanitarian collapse which is worsened by the covert hostility poses a challenge to the average 20 year displacement crisis. The traditional categories as to which they are contained are deemed hard to separate as opposed to the long term development and crisis left to be executed post emergency response.

[7] "Un Responds to Cyclone in Mozambique, Earthquake in Vanuatu | UN News." *United Nations*, news.un.org/en/story/2024/12/1158356 Accessed 10 Aug. 2025.

The covid 19 has on the humanitarian target response goals.— Monitor Sustainability Initiatives led to a 85% drop in the active targets, unveiling the structural purpose of the plan.

Traditional Limitations

Difficulties such as delays, cost, and access severely restrict humanitarian aid. The Haiti earthquake in 2010 exemplified this, as congested ports ceased operations. Transport and overhead can eat up to 30% of aid money taking funds away from actual help. At the same time, danger and rough terrain make it tough to reach far-off places like South Sudan. These ongoing issues make tech solutions crucial. Now, drones, blockchain tracking, and AI evaluations offer ways to tackle old problems while teaming up with local responders. The goal is to use new tools that back up current aid systems rather than replace them.

Technological Innovations in Use

Drones for Assessment & Mapping AI-Powered Analysis

Changes in drone systems and artificial intelligence are transforming how humanitarian groups evaluate relief work and understand world problems. Putting special sensors on drones, along with high-definition cameras, allows quick measuring of areas hit by emergencies, like the floods in Pakistan or cities in Ukraine. These drones can produce maps right away, showing routes that can be used, where people have moved to, and the damages that have occurred to buildings. Another example of this is the drones which were able to quickly map out more than 1000 square kilometers in Mozambique, after the Cyclone Idai disaster in 2019.

When computers examine this information, it helps even more Machine learning satellite and drone photos translate into algorithms that learn to recognize devastated structures, predict human movement, and measure crop damage from droughts. The U.N. Global Pulse is applying artificial intelligence to screen social media postings. It is helpful to know, in languages of persons, what a crisis-ridden state needs. The Red Cross, on its part, is applying predictive analytics that employ past patterns and contemporary conditions to predict cholera epidemics following flooding.

Figure 2: Drones take flight to aid humanitarian work in Ethiopia[8]

Data & Cash Technology

Blockchain in Cash Transfers

Blockchain could potentially change how aid is distributed to those in need. A great example of this argument is the WFP's program called Building Blocks. Since 2017, they've used it to give money safely to over 100,000 Syrian refugees in Jordan. More specifically, people are authenticated with an iris scan, so they can avoid the need for traditional banking services. This cuts costs by 98%. The system also allows for tracking what happens in real-time and keeps user data safe.

Despite many challenges whatsoever, the technology is now being put to use in Bangladesh and Lebanon as well. The biometric needs could exclude some vulnerable people, and the energy needed for verification raises sustainability questions. To deal with this, WFP uses private blockchains, which need less energy than public ones.

[8] *Drones Take Flight to Aid Humanitarian Work in Ethiopia | WFP Drones*, drones.wfp.org/updates/drones-take-flight-aid-humanitarian-work-ethiopia Accessed 09 Aug. 2025.

Figure 3: The first successful test of Building Blocks at field level carried out in January 2017 in Pakistan[9]

Digital Platforms & Connectivity

Today, humanitarian work depends heavily on digital access during crises for both organization and cash transfers. PlugPAY, for example, has decreased the cost of cash aid in Zambia and Sri Lanka by over 80% by using mobile money instead of regular banks, speeding up the process. Additionally, groups like R2C2 (Rapid Response Connectivity Cluster) use Wi-Fi drones to set up urgent communication networks after catastrophes damage the infrastructure. Following Hurricane Maria in Puerto Rico, drones helped reconnect 50,000 people in just three days.

Ethical, Legal & Technical Considerations

As with emerging technologies, there is an emancipatory potential for humanitarian work, their application must be subject to ethical governance in a bid to manage risks as much as protect rights. Data protection is bound to be a top priority, particularly in the instance of refugee biometric registration, where admissibility of evidence before frameworks such as the UNHCR's PRIMES must balance against possible efficiencies but extend the quality of GDPR-like protections to data security and privacy.

[9] "Building Blocks." *WFP Innovation*, innovation.wfp.org/project/building-blocks Accessed 10 Aug. 2025.

The humanitarian field has created guidelines like the IASC's Operational Guidance on Data Responsibility, which states that data can only be gathered in crises with community approval. Still, some problems exist. For example, AI may favor urban areas over rural ones when assessing needs. Sustainable innovation should place people affected by it first, as Red Cross participatory development of early-warning apps for flood-prone Bangladesh has done, where local input resulted in apps that were accessible to low-literacy users

MAJOR COUNTRIES AND ORGANIZATIONS INVOLVED

Luxembourg

Luxembourg plays a behind-the-scenes but critical role in humanitarian innovation. The government has funded partnerships with organizations like WFP and CERN to develop cutting-edge tools such as AI-driven decision support systems. These investments help amplify technological assistance in global crises, especially in development of forecasting models and satellite analysis that underpin timely aid.

Germany

The German Aerospace Center (DLR) constructs essential innovation infrastructure for humanitarian aid. DLR has been working with WFP on unmanned logistics vehicles and data analysis systems. These are projects such as AHEAD (automated delivery) and Data4Human that connect satellite imagery with social media and geographic information service (GIS) tools to offer real-time situational awareness during an emergency.

Malawi

Malawi was one of the first countries in Africa to test humanitarian drone operations. In 2016, the government worked with UNICEF to create a drone corridor in Kasungu for testing in mapping, medical transportation and connectivity. This project served as a training center and built local community capacity through bodies like the African Drone and Data Academy, using technology as a core in the national plan for hazard response.

Kazakhstan

Kazakhstan hosts one of the internationally recognized humanitarian drone corridors set up by UNICEF and local authorities. This corridor allows safe drone testing for connectivity, medical sample transport, and disaster mapping. Its location and regulatory framework make Kazakhstan an important testbed for adaptability of drone technology in Central Asian contexts.

Sierra Leone

In Sierra Leone, drone corridors and data pilots have been explored in coordination with UNICEF to support mapping and health logistics in remote regions. As a country prone to flooding and with limited infrastructure, Sierra Leone's involvement demonstrates the potential of UAVs to bridge service gaps in public health and disaster zones.

Vanuatu

Vanuatu, a small Pacific island nation vulnerable to cyclones, has hosted humanitarian drone trials to test emergency supply drops, connectivity devices, and tsunami mapping. These collaborations, overseen by UNICEF and tech partners, aim to build resilience and rapid response capacity in isolated island contexts.

World Food Programme (WFP)

The WFP is the foremost UN agency implementing humanitarian innovation. Operating in over 120 countries, it manages drone networks, AI imaging platforms, and blockchain initiatives like Building Blocks. It designs pilot programs such as SKAI, DEEP and plugPAY to process data, deliver aid quickly, and enhance transparency. WFP also runs the Innovation Accelerator to scale tech solutions globally.

United Nations Children's Fund (UNICEF)

UNICEF spearheads drone and digital access pilots focused on child health and equity. Its breakthroughs include humanitarian UAV corridors in Malawi, Kazakhstan, Sierra Leone, and Vanuatu. Through its Innovation Fund, UNICEF also supports start-ups in drone technology and mobile voting systems. Vaccination logistics and digital learning platforms are other key areas where UNICEF is deploying new tools.

European Organization for Nuclear Research (CERN)

The European Organization for Nuclear Research, known as CERN, contributes expertise in advanced computing and data science into the mix of brainpower working to resolve humanitarian quandaries. In partnership with Luxembourg and WFP, CERN has already been a driving force behind some of the unique AI frameworks and earth observation tools now being employed to monitor emergencies. Best known for its physics research, CERN is the heart of global early-warning systems and crisis data processing.

United Nations Economic and Social Council (ECOSOC)

The United Nations Economic and Social Council (ECOSOC) is a central actor in the organization of the international tech and development field. ECOSOC supports policy frameworks such as its 2021 Resolution on science, technology and innovation, and promotes ethical standards for humanitarian tech. It enables discussions between member states, UN agencies, NGOs and the private sector to engage in the use of innovation in an inclusive and sustainable way.

United Nations (UN)

The wider UN system, including United Nations Office for the Coordination of Humanitarian Affairs (OCHA), United Nations High Commissioner for Refugees (UNHCR) and United Nations agency for digital technologies (ITU), assists in global policy setting as well as coordinating and delivering technology-based solutions to crisis settings. The General Assembly and the Security Council have approved digital rights, data and protection of humanitarian workers resolutions. Programmes such as UN-SPIDER and the AI for Good initiative show that

the UN is committed to weaving cutting-edge technology into disaster risk reduction and the work of humanitarian action.

TIMELINE OF EVENTS

DATE	EVENT
10th September 1982	The first search-and-rescue mission was completed using the Cospas-Sarsat satellite programme, which had been initiated in 1979 and formally established on 1 July 1988. This system uses satellite-aided beacons to detect and locate distress signals from vessels, aircraft, and individuals in need
1st November 2000	The International Charter on Space and Major Disasters becomes operational. A collaborative initiative among ESA, CNES (France), and CSA (Canada), it enables rapid satellite imagery acquisition to support humanitarian response—first used in a Slovenian landslide
29th October 2007	UN-SPIDER opens its first office in Bonn, Germany, creating a global hub to support countries in accessing space-based data for disaster response and management
January 2017	The World Food Programme (WFP) launches a pilot project called *Building Blocks* in Pakistan, using blockchain to deliver cash-based transfers to 100 participants in a refugee camp.
23rd June 2017	Malawi opens the first humanitarian drone testing corridor in Africa, in collaboration with UNICEF and the government of Malawi, allowing companies and NGOs to test drones for humanitarian purposes.

April 2020	Building Blocks is deployed in Lebanon following the Beirut port explosion, enabling secure digital cash assistance to over 130,000 affected individuals.
February 2022	WFP rolls out Building Blocks in Ukraine during the early months of the conflict. The platform supports coordinated digital payments totaling over $337 million to nearly 1 million households
18th January 2024	Google.org provides $2.8 million in new funding to the WFP Innovation Accelerator to further scale cutting-edge humanitarian technologies
16th February 2024	WFP and the German Aerospace Center (DLR) sign a partnership during the Munich Security Conference to develop *FamPred*, an AI-powered food insecurity forecasting tool

RELEVANT UN TREATIES, CONVENTIONS AND RESOLUTIONS

United Nations General Assembly Resolution 78/160 – "Science, technology and innovation for sustainable development"

Adopted by the General Assembly on 19 December 2023, the resolution reaffirms the importance of STI to realise the SDGs. The call encourages support for development in the Global South through digital public goods, open-source technology, and capacity building. It also solidifies recovery from crises and the humanitarian imperative as core functions.

Economic and Social Council Resolution E/RES/2021/29 – "Science, technology and innovation for development"

Adopted on 22 July 2021, this resolution calls for national STI strategies, digital inclusion, and cooperation between countries. It promotes equitable access to innovation tools, especially in LDCs, and supports women and youth in science-related sectors.

United Nations Security Council Resolution 2286 (2016) – Protection of medical personnel and humanitarian workers

Adopted on 3 May 2016, this resolution condemns attacks on medical and aid workers in conflict zones. It calls for accountability and the safeguarding of humanitarian missions, including tech-enabled protection measures like medical data systems or UAV use.

ITU Resolution 36 (2006) – "Telecommunications/information and communication technologies in the service of humanitarian assistance"

First adopted in 2006, this ITU resolution supports using telecom and ICT tools in disaster preparedness and response. It calls for infrastructure sharing and cooperation to ensure communication access during emergencies.

UN General Assembly Resolution 61/110 (2006) – Establishment of UN-SPIDER

Adopted on 14 December 2006, this resolution created UN-SPIDER, enabling access to satellite and space-based info for disaster and humanitarian response, especially for countries without their own space tech.

PREVIOUS ATTEMPTS TO SOLVE THE ISSUE

UNICEF's HIV Diagnosis Drone Pilot

UNICEF introduced the use of drones for the transfer of dried blood samples from remote clinics to centralized labs for early diagnosis of HIV in infants in a project they piloted in Malawi in 2016. It significantly shortened the interval between getting test results and switching to treatment — from weeks to days — for vulnerable infants. The pilot was one of the first trials that used drones for health-related humanitarian aid.

Malawi Humanitarian Drone Corridor

Established in 2017, this was the first humanitarian drone testing corridor in Africa, created through a partnership between Malawi's government and UNICEF. The corridor is open to private sector and academic partners to test drone applications in imaging, connectivity, and cargo delivery for humanitarian purposes.

World Food Program's "Building Blocks" Blockchain Pilot

WFP runs its Building Blocks pilot on one of the most-advanced blockchain platforms, Ethereum. WFP's "Building Blocks" program was launched in 2017 to provide cash-based transfers for Syrian refugees in Jordan's Azraq camp using blockchain technology. It added transparency, reduced transaction fees, and the aid would be guaranteed to reach its recipient with no banks or intermediaries necessary.

UN Women Blockchain for Cash-for-Work

In 2020, UN Women partnered with WFP to deploy blockchain tech in cash-for-work programs in Jordan, allowing women to receive and manage payments securely through blockchain wallets. The project increased financial inclusion for women and improved accountability in aid delivery.

POSSIBLE SOLUTIONS

Establishing Humanitarian Technology Governance Frameworks

As new technologies are adopted in crisis response work, the need grows more pressing to establish international rules on how they should be used. These regulations should safeguard people's data, ensure consent is always obtained, and block abuse of tools such as AI and drones, especially in fragile places. And we want these rules to work across borders, so aid can get to where it's needed quickly in big emergencies. Well-established starting points are ECOSOC's Commission on Science and Technology for Development based on examples such as UNESCO's AI ethics guidelines. Without clear guardrails, we will use these tools in ways that harm the very communities they are intended to serve.

Expanding Drone Delivery Corridors in Emergency Settings

Drones for making deliveries in Malawi have helped illustrate the remarkable potential of technology in hard-to-reach areas. Taking this concept further, establishing both permanent and emergency-use drone lanes in high-risk areas could revolutionize disaster response. If governments, aid groups and private tech companies combine forces, these drone thoroughfares could be crucial lifelines, especially in areas like the mountains of Vanuatu or the remote paths of Sierra Leone, where it's hard to deliver aid. Drones shave off delivery times significantly and can go where other vehicles simply can't, making this method both feasible and life-saving.

Promoting Digital Cash Aid Using Blockchain

When an organisation like the World Food Programme unleashes a blockchain cash transfer solution (such as with Building Blocks), it proves what's possible and demonstrates the potential impact of blockchain. Reproduction of this model will need to focus on the less established financial infrastructure regions, with integration of mobile payments and offline features to take into account ubiquitous access to information. Blockchain's permanent distributed ledger provides a level of transparency in aid distribution never before possible, constraining proof of on-the-ground use of aid with reliance on the claimants being actually targeted. Savvy programs might consist of conditional mechanisms of assistance with the possibility of being programmed, useful especially post-conflict rehabilitation. This technology approach targets head on the deficiencies inherent in traditional aid models: vulnerability to

diversion, delays in processing, and high administrative costs, enhancing the direct empowering of recipients.

Investing in Digital Literacy and Technology Training (e.g. EMPACT Model)

Teaching digital skills to people in crisis areas represents one of the most strategic investments we can make. WFP's EMPACT program demonstrates that teaching practical technology skills to displaced people starting with computer basics and coding leads to job opportunities that help them reconstruct their lives. A greater number of learning centers established within refugee camps and post-disaster regions would enable thousands to obtain essential skills for their success. Programs like this convert emergency help into lasting resilience because they enable individuals to become self-sufficient while strengthening their communities thus creating genuine prospects beyond mere survival.

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