

Humanitarian Digital Innovation Challenge

About Kenya Red Cross and ICHA.

The Kenya Red Cross Society (KRCS) is set up through an Act of parliament (cap256) in 1965 to be auxiliary to the government of Kenya by providing humanitarian assistance to the most vulnerable communities, thus alleviating human suffering. In relation to its mandate, KRCS maintains an autonomy which allows us to always act in accordance with the fundamental principles of the movement. The National Society has been present in providing humanitarian assistance in both Natural and Man-Made disasters by providing relief support in preparedness, mitigation, emergency response and recovery situations.

ICHA: The International Center for Humanitarian Affairs (ICHA) is a research and knowledge hub hosted by the Kenya Red Cross Society, dedicated to saving lives through evidence based humanitarian action. Its vision is to be a global reference center that invests in generating ideas that influence humanitarian work towards strengthening communities. ICHA'S mission is to build resilient and sustainable communities through the generation of knowledge, capacity strengthening and influencing policy change. ICHA has six different units namely: Innovation, Research and Data, Climate data and Resilience, Global Migration Lab and Policy and Advocacy.

About Taita Taveta University.

(TTU) is an institution of higher learning whose mission is to conduct education, research, teaching and community outreach. A young and progressive university of resources located in the vicinity of Kenya's strategic and transnational transportation routes, TTU occupies a region rich in rare gemstones and industrial minerals. It commands a vantage position in offering quality teaching and society-facing research in mining and engineering disciplines; natural resource management; natural sciences, IT and geoinformatics; economics, business and social sciences; and environmental, agricultural and earth sciences. The University has an impressive record of organic commitment to development and capacity-building projects in Taita Taveta County and Kenya at large. In a post-pandemic education landscape experiencing borderless competition for strategic skills and research in a globalised marketplace, institutional and multidisciplinary collaborations are indispensable for sustainable competitiveness. The relative youth of TTU accompanies a disproportionate advantage in her extensive international presence, earning her a place of equivalent impact with old and legendary universities.

TTU will offer both the human capital and space/labs for quality research geared towards meeting the project objectives.

Context

The rise of digital technologies has revolutionized humanitarian action, driving greater efficiency and reducing costs through innovations such as digital cash transfers and mobile health solutions. However, alongside these benefits come significant risks that must be carefully managed. Increased surveillance, misinformation, and digital exclusion can undermine the dignity, security, and rights of the very population humanitarian efforts seek to protect.

Climate change has caused extreme events that threaten Kenya's development as recognized in the Kenya's Vision 2023. Consequently, the country has made national commitments to combat climate change through the National Climate Change Response Strategy and the National Climate Change Action Plan. While these commitments are national documents, their implementation will be made at county level, and thus, the need to mainstream climate change perspectives in programs and development plans at this level.

Relevance to Humanitarian Action:

- Vulnerable populations in humanitarian contexts, such as refugees and internally displaced persons (IDPs), are at risk of having their personal data exposed or misused. Ensuring **data protection and privacy** is essential to safeguarding their dignity and security.
- **Digital exclusion** can deepen existing inequalities, particularly for those in remote areas, women, and marginalized groups who may lack access to technology or digital literacy. Bridging the digital divide is critical to ensuring that all individuals benefit from technological advancements.
- As the Red Cross Red Crescent Movement adopt digital tools, there is a need for greater **accountability** in how these tools are used, particularly concerning the "do no harm" principle. This includes being transparent about data use, ensuring cybersecurity, and maintaining the trust of affected populations.

Innovation Challenge Overview

This Innovation Challenge aims to empower (15 local innovators in developing AI and Machine Learning solutions that address climate change and environmental degradation in Taita Taveta County. The initiative is led by the Kenya Red Cross Society (KRCS), the International Center for Humanitarian Affairs (ICHA), and Taita Taveta University. Over six weeks, selected teams will develop and refine their solutions, with successful innovations receiving support for further incubation and testing within real-world community settings.

Objectives

1. Develop AI-driven tools and strategies to mitigate and adapt to climate change impacts.
2. Empower communities with knowledge, skills, and technology to drive climate adaptation and environmental conservation efforts.
3. Enhance the impact of existing Red Cross and Red Crescent resilience projects in Taita Taveta County.
4. Raise awareness among youth and Women about climate action and environmental degradation.
5. Promote creative thinking to develop community-driven solutions for sustainable urban development.

6. Pilot the winning solution in Taita Taveta County under ongoing climate and digital transformation projects, ensuring scalability and long-term impact.
7. Address gender disparities by empowering women in leveraging AI for climate information access and dissemination.
8. Develop AI-powered tools for sustainable agriculture and promote digital literacy and skills development among women.

Focus Areas

- **Disaster Alert & Response:** AI-powered solutions to support the existing or fill in missing elements of early warning systems for floods, droughts, and other climate-related events.
- **Agricultural Optimization:** AI-powered solutions applied in monitoring for early detection of agricultural losses including but not limited to crop yields. The novelty of the solution should demonstrate across the monitoring of crop life-cycle and application in a risk mitigation of the crop-loss.
- **Water Resource Management:** AI-driven platforms for monitoring water usage, predicting shortages, and optimizing distribution.

We are not looking for overarching and broad solutions that replace existing initiatives. Therefore, care and review have to be undertaken to understand and propose solutions that build on existing initiatives. It should be based on freely available resources, leading to open-source solutions. The innovation challenge will focus on all the above three thematic areas, due to the strength from our academia partner the Taita Taveta University in the various thematic areas and can use various resources to support the initiatives on AI and ML from their current capabilities under the Small Scaled Crop Mapping Using AI and ML for agriculture optimization and them being the Research Chair in Operational Space weather with the Kenya Space Agency for the Disaster Alert and Responses. The proposed challenge outputs will not only support the Taita Taveta County for IFSL but also Flood and Soil Erosion risks in Tana River and Garissa County.

When to Apply

1st Level of Applicants. (Application deadline)	By 26 th September 2025.	Participants to submit justification on the thematic Area of Interest. The summary of the idea should be • 200 words OR • 1 Minute Video
1 st Round Judging (30 applicants to be selected)	On 1st October 2025	• Panel Selection.
2 nd Round Judging. Pitching. (15 applicants will be selected)	On 15 th October 2025.	Virtual • 3-minute pitch • 2-minute Q&A
Mentorship for Final pitch.	27 th – 31 st October.	Physical event at Taita Taveta County. Venue- Taita Taveta University Fab-Lab.
Solution development period.	1 st November- 28 th November.	Hybrid.

Pitch Day (Finalists)	On 5 th December.	Physical event at Taita Taveta County Venue-TBD
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A 5-day mentorship program will provide hands-on training, field trips, and workshops on:

- Understanding climate and environmental challenges with input from experts.
- AI-driven ideation and problem-solving approaches.
- Prototyping techniques with access to datasets, AI development tools, and cloud computing.
- User-centered product development strategies.
- Intellectual property protection and commercialization.
- Pitching techniques and presentation skills.

How to Apply/Register

Applications will be received primarily through the [ICHA Website](#) , and co hosted at the [Kenya Red Cross Society](#) . Applicants can apply by submitting a short 2 –3 minute video and/ or write-up of upto 250 words explaining your solution.

Application Link:

What To Build

We are calling on you to imagine and create solutions to address pertinent humanitarian challenges in one of the following themes:

Theme	Description
Disaster Preparedness and Response	Kenya is prone to natural disasters like floods, droughts, and landslides. This year during the March-April-May Floods, over 100,000 households were affected leaving many Kenyans needing humanitarian assistance. AI-powered solutions to support the existing or fill in missing elements of early warning systems for floods, droughts, and other climate-related events.
Agricultural Optimization:	AI-powered solutions applied in monitoring for early detection of agricultural losses including but not limited to crop yields. The novelty of the solution should demonstrate across the monitoring of crop life-cycle and application in a risk mitigation of the crop-loss.
Water Resource Management:	AI-driven platforms for monitoring water usage, predicting shortages, and optimizing distribution.

Who should participate

Participants can be in groups of not more than 3 members, individual applicants are also encouraged. You can choose to have a larger group, but only 1 will be invited to represent the team in mentorship session at Taita Taveta County.

1. University Students (Preferably from Taita Taveta County Branch.)
2. Young professionals
3. Tech enthusiasts
4. Volunteers of the Kenya Red Cross Society.

Women are highly encouraged to apply.

Judging Criteria

- The solution should recognize and address the potential negative impacts of digital technologies in humanitarian settings. It must prioritize the protection of the rights, dignity, and security of affected populations while ensuring that technological advancements are inclusive, accountable, and responsive to the communities they serve.
- The solution should present innovative approaches to humanitarian challenges, be sustainable in resource-limited settings, scalable to larger populations, and integrate seamlessly with existing humanitarian technologies.
- It must be technically feasible, reliable, and adaptable to environments with constrained resources.
- It should address critical humanitarian needs and be adaptable to future risks, including data security challenges.
- The development stage should be clearly defined, with a roadmap for future progress, whether it's in the early idea phase or a more advanced prototype.

Awards

Winning Teams	• Cash prize of 350,000/- • Mentorship support by I.O.Me and TTU
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Note: Terms and Conditions Apply

Intellectual Property (IP) Rights

- 1. Ownership of Ideas and Solutions:**
Participants will retain full ownership of the ideas and solutions they develop during the hackathon. However, by taking part, participants grant Kenya Red Cross a non-exclusive, royalty-free license to use, display, and promote the submissions in relation to the hackathon and its outcomes.
- 2. Encouragement of Open Collaboration:**
Kenya Red Cross encourages collaboration and open innovation. Participants are free to build their solutions using existing open-source tools and resources, but they must ensure they have the necessary rights to use and modify any third-party materials.
- 3. Protection of Confidential Information:**
While Kenya Red Cross values innovation, participants are responsible for the confidentiality of

any sensitive information they choose to share during the hackathon. The organization will not be held liable for the protection of intellectual property disclosed during the event.

4. Future Development and Partnerships:

In cases where Kenya Red Cross or its partners wish to collaborate with participants to further develop solutions, additional IP agreements may be made to clearly define ownership and rights for future development.

By participating in the challenge, the Entrant agrees to these [Terms and Conditions](#)

Communication/ Support

For any inquiries, reach out to innovation@redcross.or.ke and include “*AI Innovation Challenge*” in the subject line.