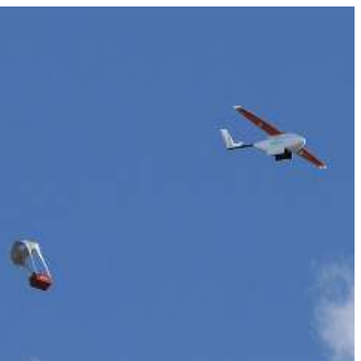
In 2013, Kodjo Afate Gnikou, a resourceful inventor from Togo in West Africa, made a $100 3D printer which he constructed from parts he scrounged from broken scanners, computers, printers and other e-waste. Organisations such as Field Ready are working with makerspaces and fablabs to locally manufacture humanitarian supplies in conflict settings.

GiveDirectly, a charity known for its cash transfer programs, has launched a pilot version of what will become the largest basic income experiment in history. From early 2017, people in 40 villages will receive roughly $22.50 per month for 12 years.

Momala is a smartphone app that uses artificial intelligence (AI) to automatically detect parasites in microscopic images of thick blood smears. Advancements in machine learning and big data are helping to bring AI to the forefront of healthcare, changing how diseases are diagnosed and treated.

The Red Cross is piloting forecast-based financing. This approach uses scientific data to indicate elevated risks of events such as flooding. Humanitarian funding is then released before a potential disaster to help reduce its impact.



In October 2016 Zipline launched fixed-wing drones to deliver blood products to hospitals and health centres across rural Western Rwanda. Health workers place orders by SMS and within minutes a Zip is launched by catapult carrying the medical products ordered.

Hyper-frugality

It's 2030 and the world is affected by multiple crises, driven by climate change and conflict. Fragile states in Africa are particularly affected. Migration flows have been stemmed by hard borders. Development and humanitarian efforts focus on in-place resilience for at-risk communities and chronically displaced people. Leveraging traditional cultures of self-sufficiency and repair or reuse, communities are creating networked frugal circular economies.