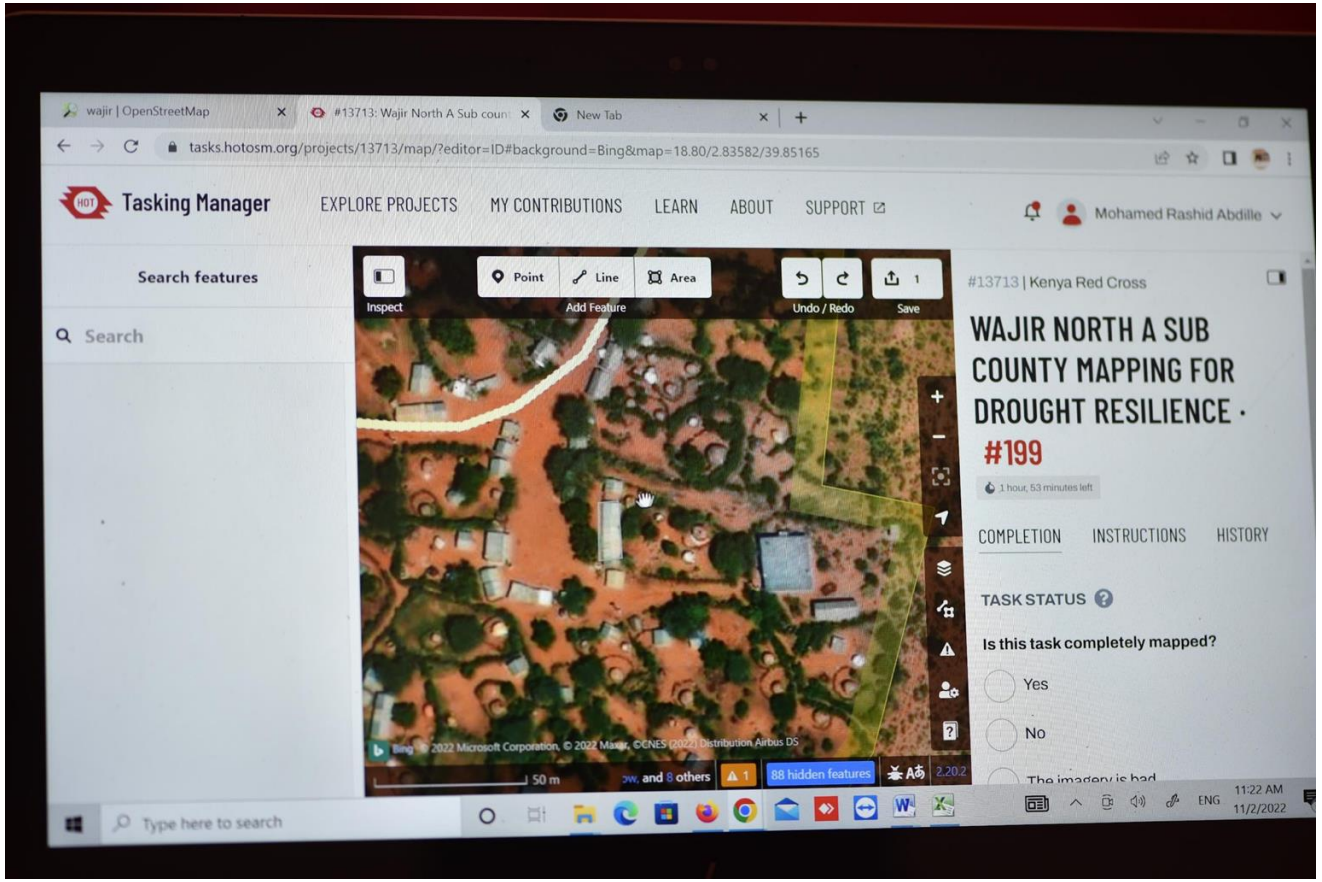
Use of Technology in Disaster Risk Management

Kenya Red Cross

INTRODUCTION

- Extreme weather condition and variations are becoming the norm in many regions of the world
- Arid and semi-arid regions are particularly impacted by these climate hazards, posing a significant risk to the lives and livelihoods of millions of households
- According to climate change projections, frequency and intensity of extreme weather events are expected to rise globally, exacerbating existing humanitarian crises and creating new ones
- Understanding disaster risk is everyone's business
- To know where and how to make investments before disaster strike: we need to identify risks rapidly, rigourously, regularly
- Use of technology has made access to risk information more accessible than ever
- You do not have to be a disaster risk expert to make a difference, we can all work together to better understand our risks

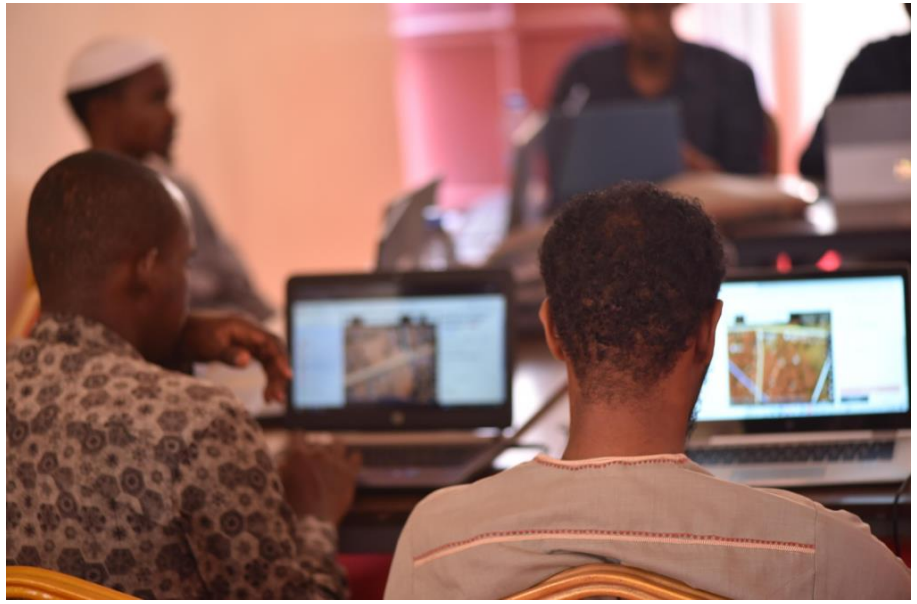
COMMUNITY PARTICIPATORY MAPPING FOR DISASTER RESILIENCE PROJECT



OBJECTIVES

- Increased community understanding of their risk, vulnerabilities and capacities. through CMDRR trainings
- Enrich OpenStreetMap (OSM) data by increasing contributions from new community members. This included adding building footprints, roads and social amenities features
- Foster use of data-driven decision making through use of data for proactive response to disasters

MAPATHONS



Data use cases:

- **Enhance preparedness & response efforts**- support disaster response teams to navigate the affected areas, locate survivors, and prioritize areas for relief efforts
- **Enable efficient resource allocation:** identify gaps in the location of critical infrastructure such as hospitals, schools, and roads
- **Promote open data:** Mapathons contribute to the creation of open data resources that can be used by anyone for research, development, and disaster risk reduction efforts

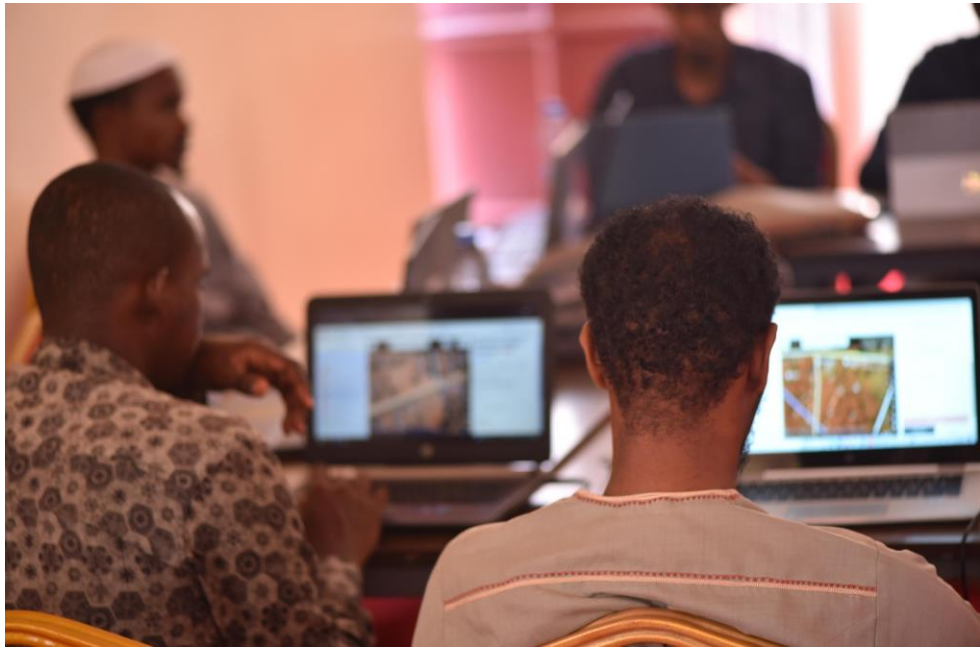
PROJECT ACHIEVEMNT

3 MAPATHONS CONDUCTED

The project was able to add **65,000 building footprints and 1000 kms of road** on OpenStreetMap data. Increasing the accuracy and completeness of Wajir GIS data

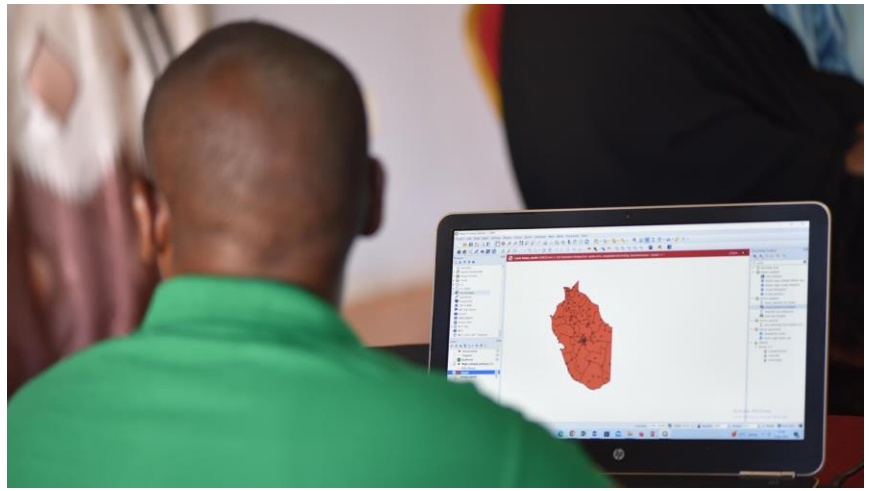
Key outcome

- ***One community member have used OSM to reach and rescue girls at risk of FGM through mapping of buildings and routes***



STRENGTHENING CAPACITIES IN DATA COLLECTION- KOBO AND OSMAND, ORGANIC MAPS, GIS AND MAPPING

- 10 key county staff trained on Kobo survey programming and deployment
- 30 (community members, volunteers, staff) trained on the use of Organic maps to directly update point data on OSM
- 10 key county stakeholders trained on GIS visualization (dashboards and web maps), GIS Analysis



Trainings were critical to ensure that the county is prepared to collect and anayze data that can inform county programming and disaster early warning and early response initiatives

Key outcomes

- ***Dept of water successfully developed digital data collection for water resources that will enable them to capture various attributes related to water facilities***

STRENGTHENING CAPACITIES-COMMUNITY MANAGED DISASTER REDUCTION TRAINING

- Trained 30 Sub county admins who are part of the CMDRR committees
- Training focused on understanding of community risk; Exposure, vulnerability and adaptive capacities and impacts of climate change to livelihoods

Key Outcome

Development of community action plans

Kenya Red Cross

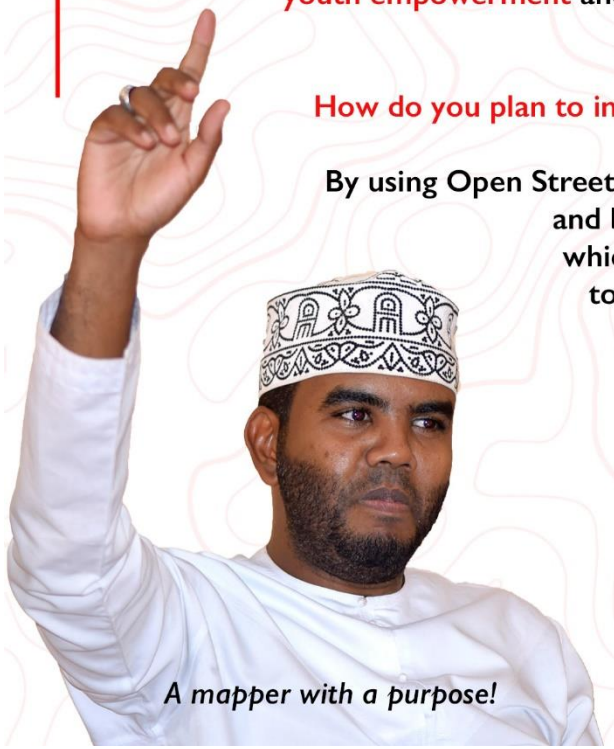
ICHA International Center for Humanitarian Affairs
At the Kenya Red Cross Society
• Inquire • Understand • Influence

What made you start an organization that addresses FGM?

Wayda (Wajir Youth Development Association) was formed to provide support for the needs that advocate for women and youth empowerment and provide solutions to the issues affecting the youths.

How do you plan to incorporate mapping in your organization?

By using Open Street Map (OSM) mapping tools to map roads and buildings making the area more navigable which will allow for tracing allowing rescuers to provide help to stranded girls and youth affected by FGM/GBV/SGBV/ and Drugs & Substance abuse



A mapper with a purpose!

Open Mapping Hub
EASTERN & SOUTHERN AFRICA

ICHA International Center for Humanitarian Affairs
At the Kenya Red Cross Society
• Inquire • Understand • Influence

How did you get into mapping?

I got into mapping after I got introduced to it by my mentor, Dr.Francis Oloo

Describe your mapping journey

I started off by learning the core concepts of mapping before joining the Youth Mappers association and subsequently participation in mapathons (mapping events)

What is your most memorable mapping experience?

I would say the whole aspect of being a mapper and being able to make an impact in society through my skill has been the most fulfilling experience andespecially being given the chance to map vulnerable areas in a bid of improving early action and early responce mechanisms in the humanitarian sector through the mapathon organized by ICHA at the Kenya Red Cross HQ

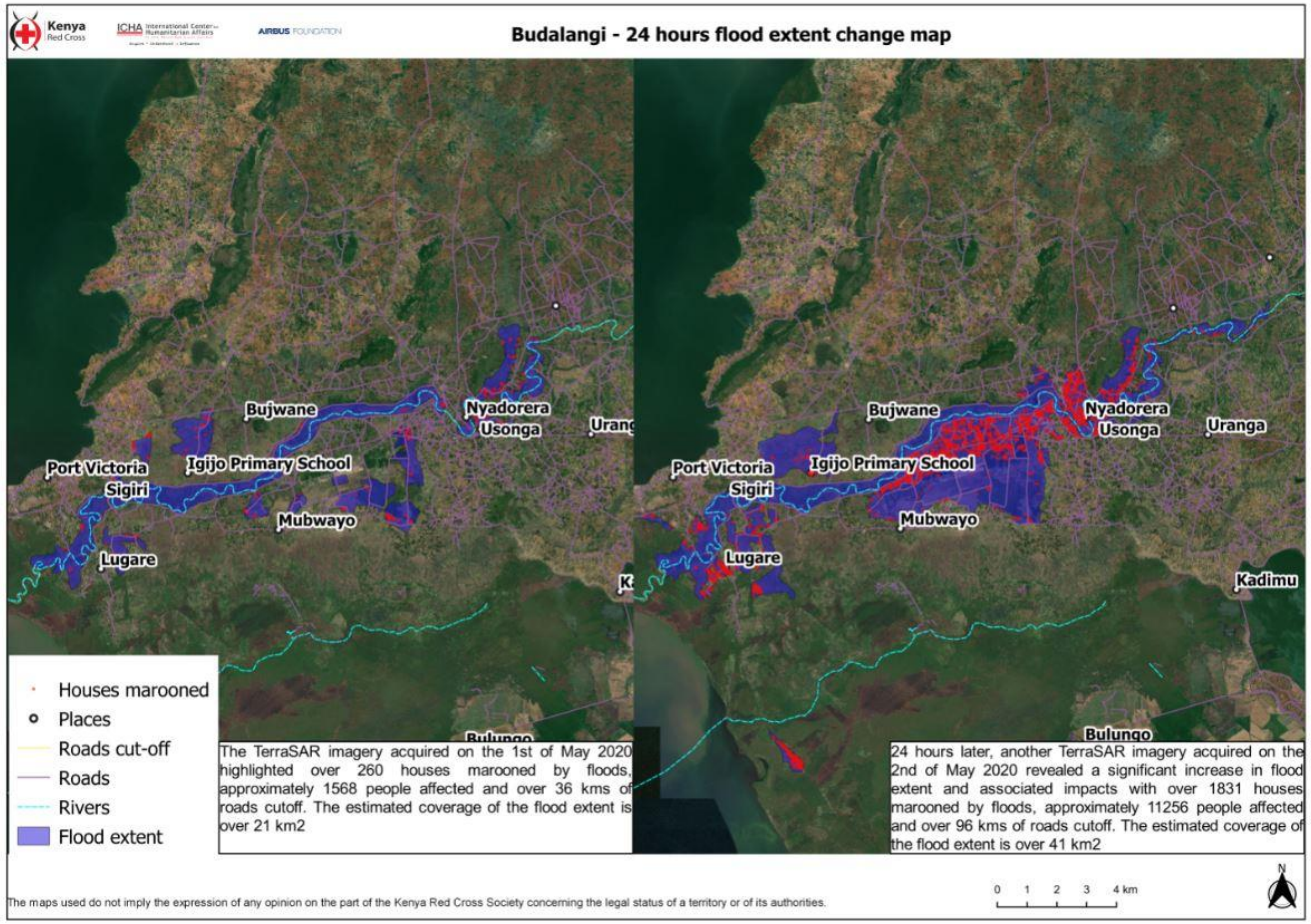
What is the future of mapping?

Mapping has no end and will keep on advancing in the decades to come as it has become a vital source of data and information

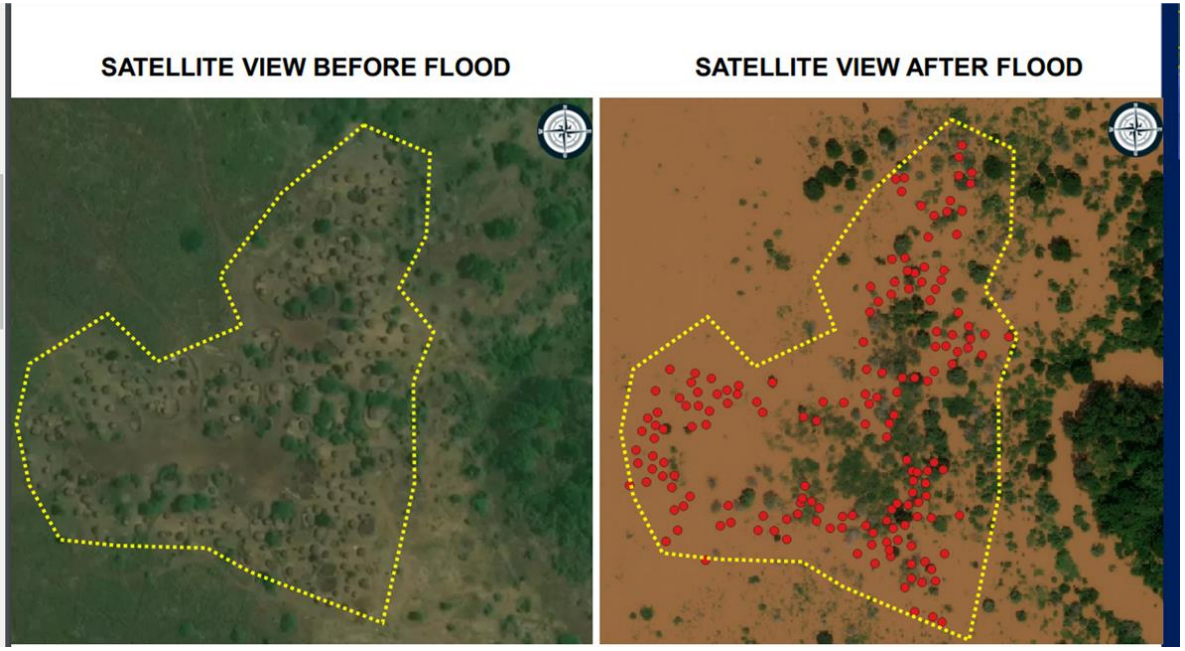
www.icha.net

EARTH OBSERVATION SATELLITES

- Captures data on earth's surface withou physical contact
- Saves on cost incurred from ground assessments
- Offers accurate data on affected communities
- Applicable in drought and floods impac analyses

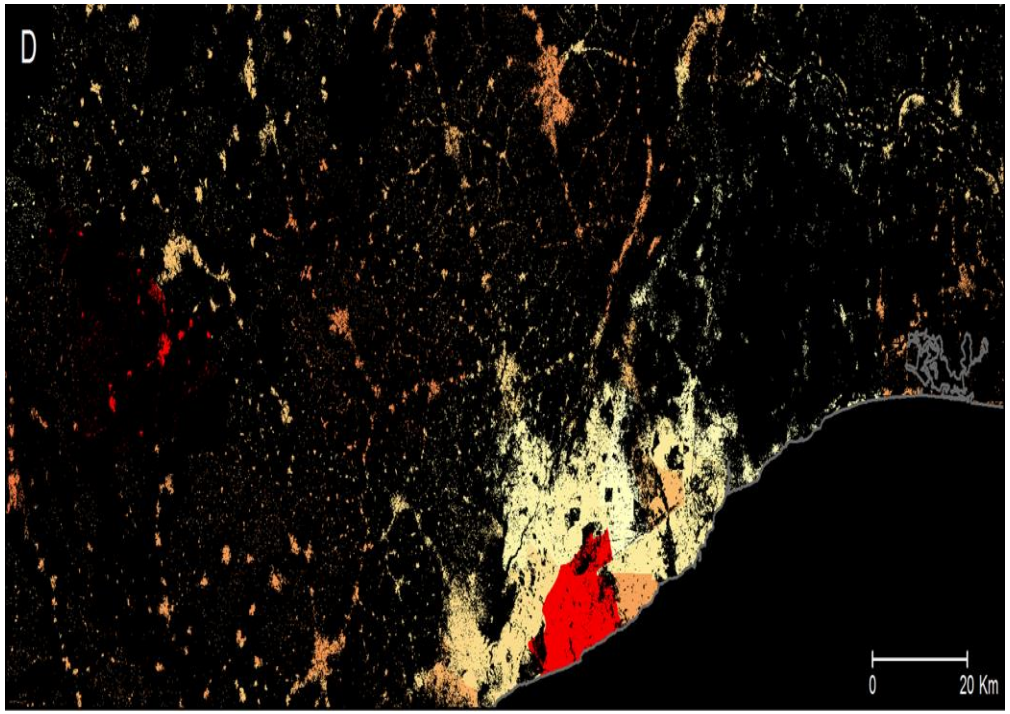


POST DISASTER ASSESSMENT



USE CASES IN DROUGHT

- Monitoring of Vegetation condition Index
- Overlaid high resolution settlement data on the pixelated frequency analysis with SPI data at -0.98 in the 23 Asal counties.



	Population Exposed Across Livelihood Zones				
Counties	Agropastoral	Marginal Mixed Farming	Mixed Farming	Pastoral	Grand Total
BARINGO	211,279			1,435	212,714
EMBU			111,058		111,058
GARISSA				103,652	103,652
ISIOLO	2,289		7	13,228	15,524
KAJIADO	229,102	24,584	20,172	253,106	526,964
KILIFI			261,308		261,308
KITUI			395,703	46	395,749
KWALE			212,732		212,732
LAIKIPIA	235,766			9	235,774
LAMU			0	228	228
MAKUENI	1,216	16,873	299,704	25,944	343,737
MANDERA	14,752			207,551	222,303
MARSABIT	18,478		34,266	129,822	182,567
MERU	2,459		0	8	2,467
NAROK	412,659			210,751	623,409
NYERI	0				0
SAMBURU	57,379			88,619	145,998
TAITA/TAVETA			229,127	109	229,236
TANA RIVER			6,464	33,976	40,440
THARAKA-NITHI			6,119		6,119
TURKANA	40,807			299,156	339,963
WAJIR	100,561			347,626	448,187
WEST POKOT	218,313			132,718	351,031
Grand Total	**1,545,059**	**41,456**	**1,576,662**	**1,847,984**	**5,011,162**

REMOTELY PILOTED AIR SYSTEMS (DRONES)

Compensates for spatial and temporal limitations from earth observation satellites

- Drones use cases:
- Mapping
- Search and Rescue
- Monitoring
- Delivery
- Documentation
- Public information

EARLY WARNING SYSTEM-FORECAST BASED FINANCING

Anticipatory Action: ***'No regrets approach'*** This entail readiness activities, preparedness and implantation of Early action

KRCS adopts the Forecast-based Financing (FbF) approach to preposition finances for early actions, based on credible forecast. Actions based on triggers being reached.

Approach:

External: working with government, communities and key stakeholders

Internal: strengthening internal systems for anticipatory actions eg policies, work approaches and finance options

FBF EARLY WARNING SYSTEM DEVELOPMENT PROCESS

Kenya
Red Cross

THANK YOU