

## What we do

Key thematic areas, products and services



Who we are: about 510

What we do: Key thematic areas

**Products and services** 

- Anticipatory Action
- Cash & Voucher Assistance
- Community Engagement & Accountability
- Emergency Support
- Water & Landscape

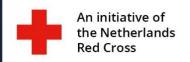
Accelerate your digital transformation journey





# Who we are: About 510





## 510: The Netherlands Red Cross' Data and Digital Initiative

510 is the data and digital initiative of the Netherlands Red Cross. Named after the total surface area of the earth (510 million square kilometers), 510 aims to help every National Red Cross and Red Crescent Society in need. 510's purpose is to improve the speed, quality and cost-effectiveness of humanitarian aid by creating products and services, using data and digital tools. 510 started in March 2016 with a core team of 3 people and never stopped growing. Currently, 510 has 90+ team members of whom 50+ are professional volunteers.

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# What we do: Key thematic areas



Anticipatory Action Cash & Voucher Assistance

Community Engagement & Accountability

Emergency Support

Water & Landscape





## Our products & services

#### Anticipatory Action

Cash & Voucher Assistance

Community **Engagement &** Accountability

**Emergency** Support

Water & Landscape

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#### Services:

- Trigger Development
- Early Action Protocol Development
- Cash Information Management
- CEA Information Management

- Surge Information Management
- Surge Deployment
- Missing Maps

- Water Security
- Site Suitability Analysis
- Research and data analysis for naturebased solutions
- Digital Maturity Assessment
- Data Literacy Training
- · Data & Digital **Capacity Building**
- Data & Digital Responsibility

#### **Products:**

Community CRA Risk Assessment

**Portal** 

ibf

121 **Platform** 

**Helpful Information** HIA web-App

Social Media sml Listening

Digital deh **Engagement Hub**  ada

**Automatic Damage** Assessment

Landscape **Restoration Tool** 





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**Anticipatory Action** 

Anticipatory Action refers to the actions taken to reduce the humanitarian impacts of a forecasted hazard before it occurs or before its most acute impacts are felt. The decision to take action is informed by impact-based forecasts and corresponding thresholds tailored to determine when, where, and how the event will unfold. We aim to enhance Anticipatory Action development and implementation. We support National Societies and other humanitarian actors with data services, capacity building, and by creating digital tools.

By turning forecasts from descriptions of what the weather will be into assessments of what the weather will do, we enable National Societies and local humanitarian partners to leverage data and technology to make data-driven, life-saving decisions and act before disasters strike.

Impact Based Forecasting (IBF) is a process of collecting and integrating data to predict the impact of impending disasters on local communities.\_ It enables anticipatory actions to mitigate the risks posed by climate-induced extreme weather.

#### Products/Services



- Trigger Development
- Early Action Protocol Development
- Community Risk Assessment
- Impact Based Forecasting Portal

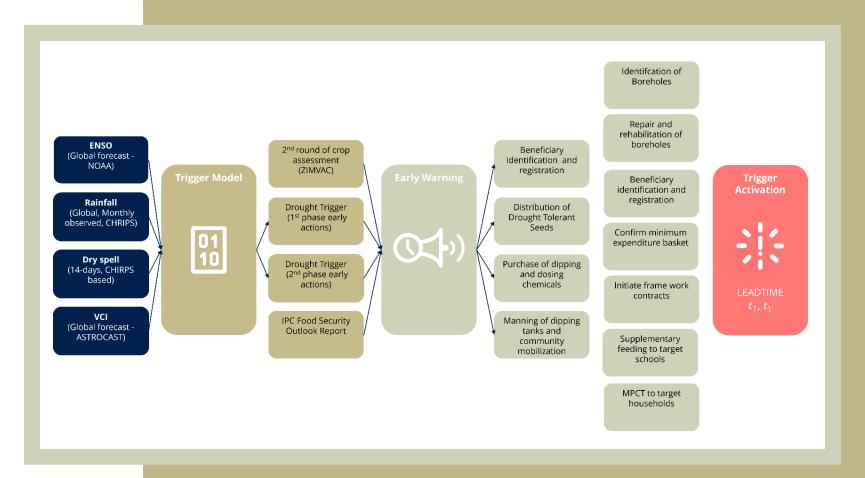


## Trigger Model Development

Trigger models are employed to establish danger levels that activate humanitarian anticipatory Early Action Protocols (EAPs). These models are developed using the Impact-Based Forecasting (IBF) methodology. So far, we have built models that trigger EAPs for typhoon, flood, dzud, drought and dengue hazards.

The stages of trigger model development include: conducting risk analysis, analyzing the forecast skill of hazard forecasting products, creating historical hazard-impact databases, and performing predictive modelling to determine thresholds. This process aims to provide sufficient lead times for the implementation of early actions.

The Trigger Model for typhoons, for example, was developed using data on exposure, vulnerability and rainfall to predict the percentage of houses likely to be severely damaged in each municipality. Simulations based on past typhoon events were used to establish the trigger level. In case of a typhoon occurring, the model's predictions, based on forecasts, are compared to the predefined trigger level to determine whether to activate the typhoon EAP.



IBF Drought Trigger Model inputs in relation to the IBF Trigger timeline



## **Early Action Protocol Development**

An Early Action Protocol (EAP) aims to mitigate the impact of predicted events such as typhoons, floods or droughts by enabling the release of funding to execute pre-agreed early action before the event (a mechanism called Forecast-Based Financing). 510 can help set up EAPs together with National Societies.

The IBF Portal visualizes and disseminates information that supports the operational decision making of disaster managers. A trigger model, which is used in the portal, is developed to determine at what threshold the EAP should be activated.

The EAP is developed collaboratively with all organizations and communities involved to decide on what appropriate anticipatory action to undertake.





## cra Community Risk Assessment

Community Risk Assessment (CRA) is a dashboard that identifies and predicts the geographic areas that are most affected by a disaster. We build a dashboard that contains integrated data from many sources separated on all admin levels.

We collect and integrate all relevant pre-disaster data sources on a detailed geographical level, focusing on indicators inspired by the INFORM risk-framework which contains three main components:

1. Long-term Hazard Risk (based on historical events): e.g. flood and drought risk

2. Vulnerability: e.g. poverty

3. Lack of Coping Capacity: e.g. distance to the nearest hospital

Having all this data readily available and easily accessible before a disaster strikes can save a lot of time

510 collects and collates data on impact indicators using global, national, and local databases, as well as in-country data scrambles. Text mining of online news media enriches this data, fused with hazard data, for trigger model development and risk assessment validation.





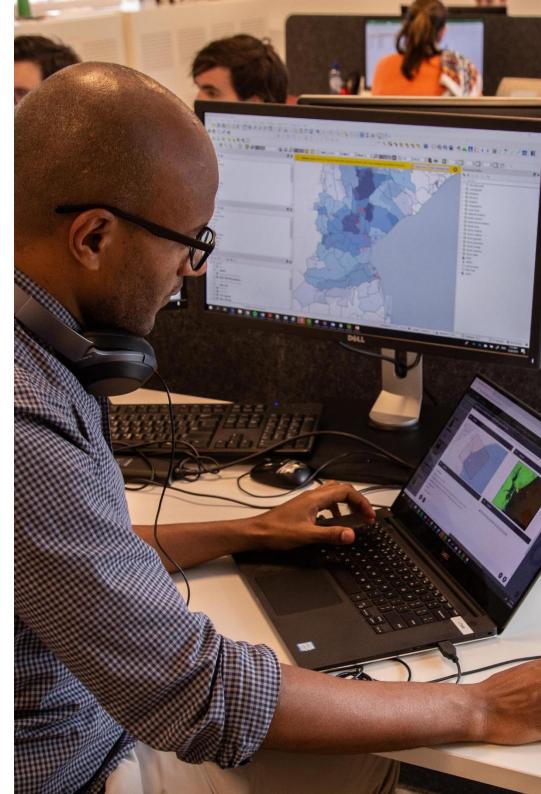


#### ibf Portal

Together with National Red Cross and Red Crescent Societies and other partners, 510 codeveloped the Impact-Based Forecasting Portal (IBF Portal): a digital one-stop-shop of information which supports the decision-making of disaster managers during anticipatory action operations. The IBF Portal displays information on the impact of an incoming disaster at the right time for decisionmakers to be able to act and execute pre-agreed early actions. The IBF Portal is built upon insights from more than 160 co-design sessions with disaster managers and operational personnel in the Red Cross Red Crescent Movement, governmental and civil society stakeholders, as well as input from knowledge institutions and other humanitarian organizations.









**Cash & Voucher Assistance** 

Cash & Voucher Assistance (CVA) is the provision of cash transfers or vouchers, when appropriate, for the affected population to decide how to meet their own needs using available local resources. It restores people's autonomy and helps to rebuild the local economy.

The International Disaster Database recorded a steady increase in the frequency of disasters over the past 35 years. As a result, the number of people affected by humanitarian crises has almost doubled over the past 10 years, whilst the cost of humanitarian assistance has tripled. For this reason, the humanitarian world is undergoing a transformation in the way that aid is delivered. This transformation goes hand in hand with the humanitarian principles of impartiality, neutrality and independence.

Assistance must always reach the most vulnerable. An effective way to support people affected by disasters is through a combination of Cash & Voucher Assistance and Forecast-based Financing (FbF). FbF allows for both decisionmakers, and people affected to better prepare for and cope with disasters and thus reduce needs when disaster strikes. Cash & Voucher Assistance offers a more efficient and dignified means to deliver assistance, empowers people in need and fosters local economies.



- Cash Information Management
- 121 Platform



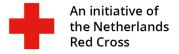
## **Cash Information Management**

National Societies are increasingly using Cash & Voucher Assistance (CVA) to provide aid to people in need effectively and efficiently. The IFRC has set the target of providing 50% of its humanitarian assistance through CVA by 2025.

Cash projects request a large amount of data from registration to data sharing with financial service providers, post-distribution monitoring, community engagement, project evaluations, and reporting. The Cash Information Management service is primarily focused on cash preparedness, capacity building, and direct (emergency) operational support, and aims to enhance the ability to effectively administer and scale up CVA in an accountable way.

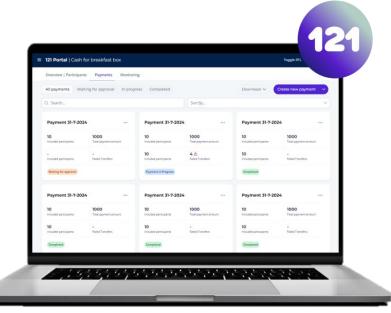






## **121** Platform

The 121 platform is a user-friendly tool to streamline the Cash & Voucher Assistance (CVA) process, aimed at making CVA easy, safe, and fast and to help people affected by disasters meet their own needs. The platform is designed for simplicity, so users do not need to be information management experts to navigate it - basic CVA knowledge is sufficient. Through a portal, users receive an overview with real-time updates on: registration / validation / inclusion / payments / monitoring and evaluation. In addition, it has a familiar setup with real-time traceability and a dashboard, enabling efficient coordination and security through a privacy by design system.











**Community Engagement & Accountability** 

Community Engagement & Accountability (CEA) is essential to help the Red Cross Red Crescent Movement build the acceptance and trust that is needed to deliver lifesaving work. One of the most effective ways of building this trust is to make sure that people can always engage with National Red Cross and Red Crescent Societies, and to guarantee that National Societies will act based on their feedback and needs. Achieving this requires a systematic, consistent and high-quality approach to how we engage with and are accountable to communities.

Our goal is to work with National Societies on building trust, enhancing relevance and improving the quality of programmes by providing easy-to-use, safe and transparent digital tools for meaningful and scalable engagement with communities and simple processes for creating actionable insight

#### Products/Services



- **Digital CEA**
- **Digital Engagement Hub (DEH)**
- **Social Media Listening (SML)**
- **Helpful Information as Aid (HIA)**



**CEA Information Management** 

The IFRC Strategy 2030 calls for an urgent shift of leadership and decision-making to the most local level – placing local communities at the very centre of change so that actions are effective, inclusive and sustainable. Achieving this will require the IFRC Secretariat and National Societies to adopt a more systematic, consistent and high-quality approach to engaging with and being accountable to communities.

With CEA Information Management as a service, 510 supports this process. Our CEA team helps with writing CEA strategies that integrate (digital) feedback mechanisms and two-way communication tools into National Society guidelines and plans; we help with leveraging CEA data and evidence for decision-making by implementing (digital) products and processes that allow for more systemic collection, analysis, visualization and sharing of feedback data; and we work on improving the quality of the engagement itself.





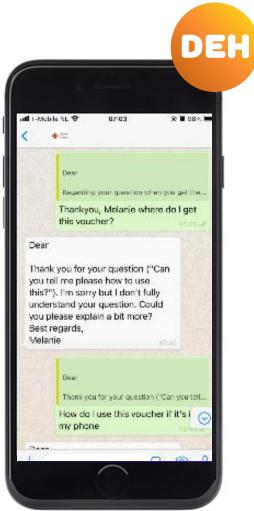


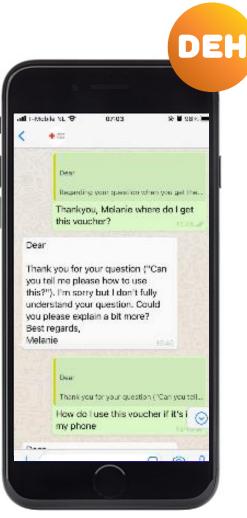
## DEH Digital Engagement Hub

The Digital Engagement Hub is a collaboration between the IFRC, the Norwegian Refugee Council 510, a number of National Societies and several other partners.

The goal is to increase and improve local and scalable engagement and accountability by facilitating multi-channel communication between humanitarian actors and people affected by disasters and crises.

We design, configure and build a standardized technological solution that is replicable and supported across the IFRC network and that provides actionable insights into feedback from people affected.









## sml Social Media Listening

With the Social Media Listening tool, we pull data from instant messaging platforms (such as Telegram or Twitter) to see what People Affected by a disaster or crisis think and say about their situation, what they need and how they interact with humanitarian organizations.

Combining quantitative and qualitative data and identifying key insights and trends from these conversations helps mitigate risks and helps the IFRC and National Societies define, implement and improve (CEA) activities, programs and information campaigns.





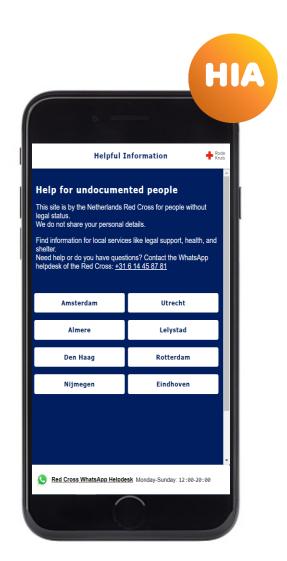


## hia Helpful Information web-App

The Helpful Information web-App (HIA) is a source of information for people affected by disasters or crises. It provides information about services that the Red Cross Red Crescent or other (local) aid organizations offer and/or provides answers to frequently asked questions.

HIA is easy to deploy, even without pre-existing infrastructure; the content is managed in a Google sheet, so that there are no technical skills needed to update the information; and it is very low cost.

In 2019, the first HIA product was designed with and for undocumented migrants living in the Netherlands. Since then, there have been multiple instances in different countries, for different target groups and in different emergency or program contexts. In some cases, the main target group is People Affected themselves, whereas in other cases the main target group is Red Cross/Red Crescent staff and volunteers who directly communicate with people affected through digital channels (i.e., a WhatsApp helpdesk) or at physical locations (i.e., a Humanitarian Service Point).









## **Emergency Support**

510 prioritizes disaster response, which we support with dedicated products, services and personnel. Our goals are to:

- Support program teams in choosing, setting up and using data and digital products, so that their work is faster, safer and more efficient;
- Provide operations managers with the most relevant and timely information to plan response operations, so that interventions are evidence-based and resources are optimally allocated;
- Consolidate and share information on needs and interventions with the different humanitarian actors on the ground, so that they can effectively coordinate with each other.

We support humanitarian partners in emergencies with digital solutions and highly skilled experts. We are there as soon as it is needed, for as long as it is needed.

#### Products/Services



- Surge Information Management
- Surge Deployment
- Automated Damage Assessment (ADA)



#### **Surge Information Management**

When a disaster occurs, information is key for aid workers on the ground to take evidence-based decisions. Collecting, managing, and visualizing data is time consuming and often requires connectivity and tools that may not be available on the ground.

Surge Information Management Support (SIMS) provides remote assistance to operations with information products and data analysis. In addition, SIMS also serves as a network for information management coordination and capacity building, helping to improve information management standards, tools, and expertise across response operations.

SIMS is an IFRC-led network of trained specialists who develop, coordinate and implement information management systems for global Red Cross and Red Crescent disaster response operations. When a disaster occurs, SIMS is activated through the IFRC Disaster Crisis Management Surge Desk.

510 brings data experts to the SIMS network, helping

operations leverage the power of mapping, data management and visualization tools to support decision making and enhance reporting. This includes the use of predictive analytics, as well as analysing disaster impact with satellite imagery.





## **Surge Deployment**

510 often supports emergency operations by deploying full-time personnel either directly into areas affected by the disaster or remotely. We cover roles centered on information management, applied to different sectors: cash, relief, shelter, WASH, needs assessment, etc.

As of June 2023, 510 covered **24 deployments** in emergencies **over the last 4 years**, of which 8 over the last year alone. Mostly these are in-country positions, but we also support remotely, if needed.

The experiences of our team members who participate in surge deployments are of crucial importance to ensure that 510's products and services are fit for emergencies, since they help us understand the constraints, perspective and objectives of operations.





## **Automated Damage Assessment**

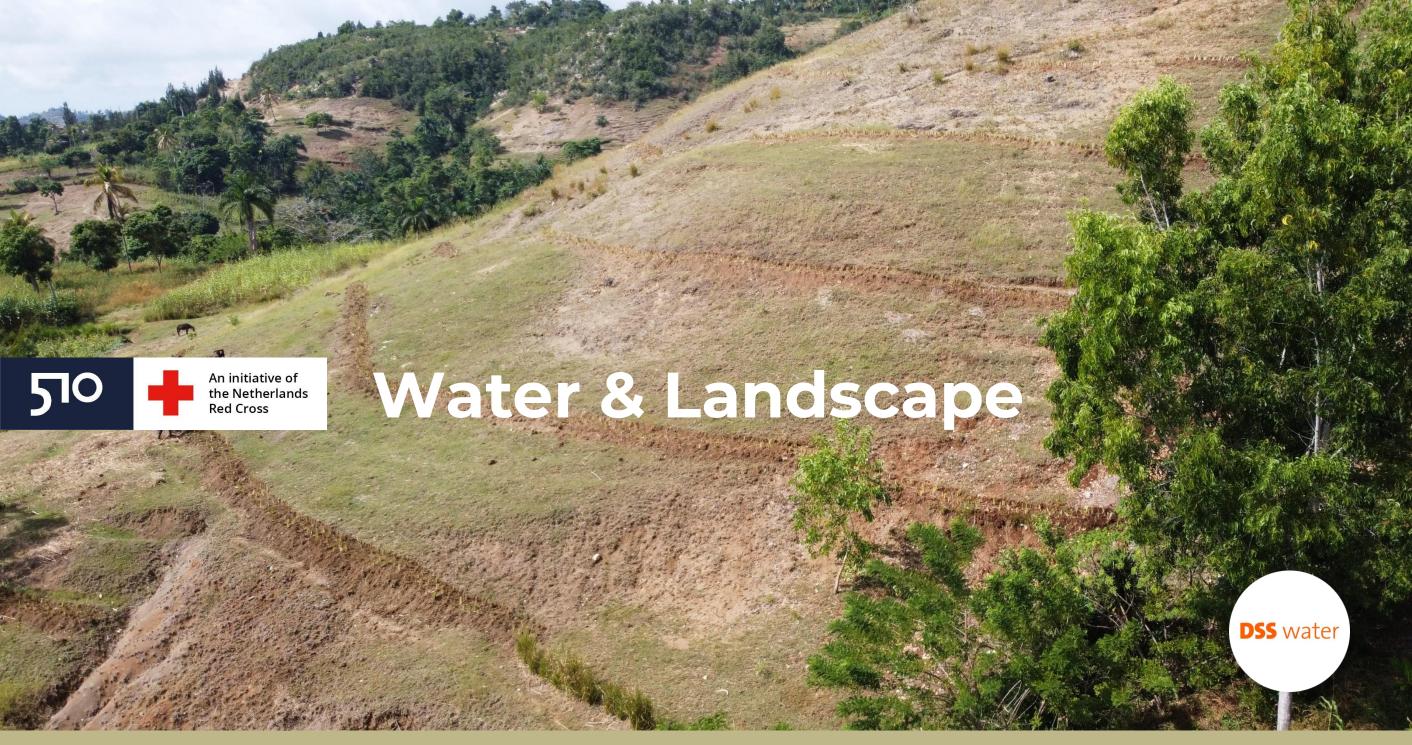
When a disaster occurs, it is important to know as soon as possible how many people are affected, where they live, and the severity of the damage, to properly plan response operations.

The Automated Damage Assessment tool (ADA) is a deep learning model that identifies damaged buildings in satellite images after a disaster has happened. Automating this assessment makes it faster and far less dependent on human effort, therefore enabling 510 to quickly deliver the information that is needed. The assessment time decreases from weeks to hours, which makes a difference in the speed of operations and, ultimately, on the number of lives that can be saved.











## Water & Landscape

The Water & Landscape thematic area supports implementing partners in mitigating the humanitarian effect of climate and environmental crises. Our team applies a systematic (watershed) approach which strives for nature-based solutions driven by data-based research and visualizations to prioritize intervention zones. The provision of recommendations to decision makers ensures to respect local knowledge and practices, and fosters robust connections with technical partners and influential entities within sectors.

We work with our humanitarian partners to improve the way decisions are made in order to build more climate resilient communities. This is achieved through the application of data and digital technologies that build evidence to identify areas of environmental and humanitarian concern and promote nature-based solutions.

#### Products/Services



- Water Security
- Landscape Restoration Tool (LRT)



## **Water Security**

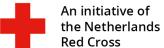
Climate change has led to the increase of plenty of natural hazards, affecting millions of people globally. Together with National Societies, we analyze different climate-related data to understand extreme weather events and use it as guidance to reduce their impact on people's lives.

Water security refers to the sustainable management and use of water resources to ensure that there is enough quality water available for the health, livelihoods, and ecosystems of present and future generations. This involves protecting water sources from pollution, managing water supplies to prevent scarcity, ensuring equitable access to clean water, and preparing for and mitigating water-related disasters like floods and droughts.

Our activities in this field include monitoring water quality and quantity through remote sensing, analyzing water usage patterns, modelling and forecasting water availability and demand, mapping and managing watershed areas, and providing real-time alerts and decision support systems for water resource management and disaster response.







#### **Nature-based Solutions**

The IFRC supports communities globally in taking steps to sustainably protect themselves from <u>disaster risks</u> by working with their natural environment. Our aim is for 100 National Societies to implement nature-based solutions within their communities by 2025.

In particular, we focus to prevent and reduce disaster impacts on people and the environment, by analysing the feasibility of nature-based solutions to enhance resilience of communities, and exploring the potential benefits of nature-based solutions for people, the economy and the environment.





## Site Suitability Analysis

A thorough understanding of the environmental context helps decision makers choose optimal locations for interventions. A site suitability analysis offers an initial overview, ensuring that interventions are placed effectively and sustainably.

Within this data service, we evaluate different locations to determine the most suitable site based on a set of environmental indicators. This involves assessing factors such as topography, soil type, water availability, proximity to infrastructure, and potential environmental impact. As such, this service can help advise on the placement of boreholes, latrines, and other infrastructure projects to ensure they are efficiently located, with minimal environmental impact.

Activities in this service include spatial analysis using GIS, remote sensing for environmental monitoring, statistical modelling to predict outcomes of site interventions, and visualization of findings.





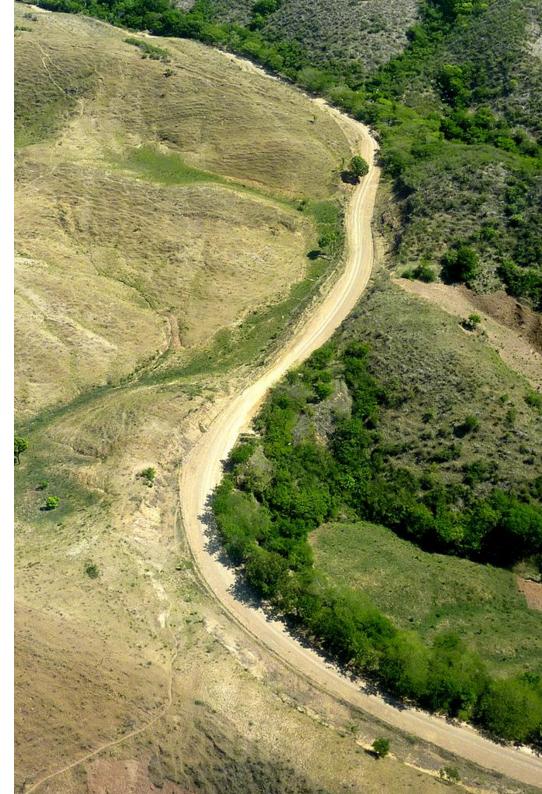
## Landscape Restoration Tool

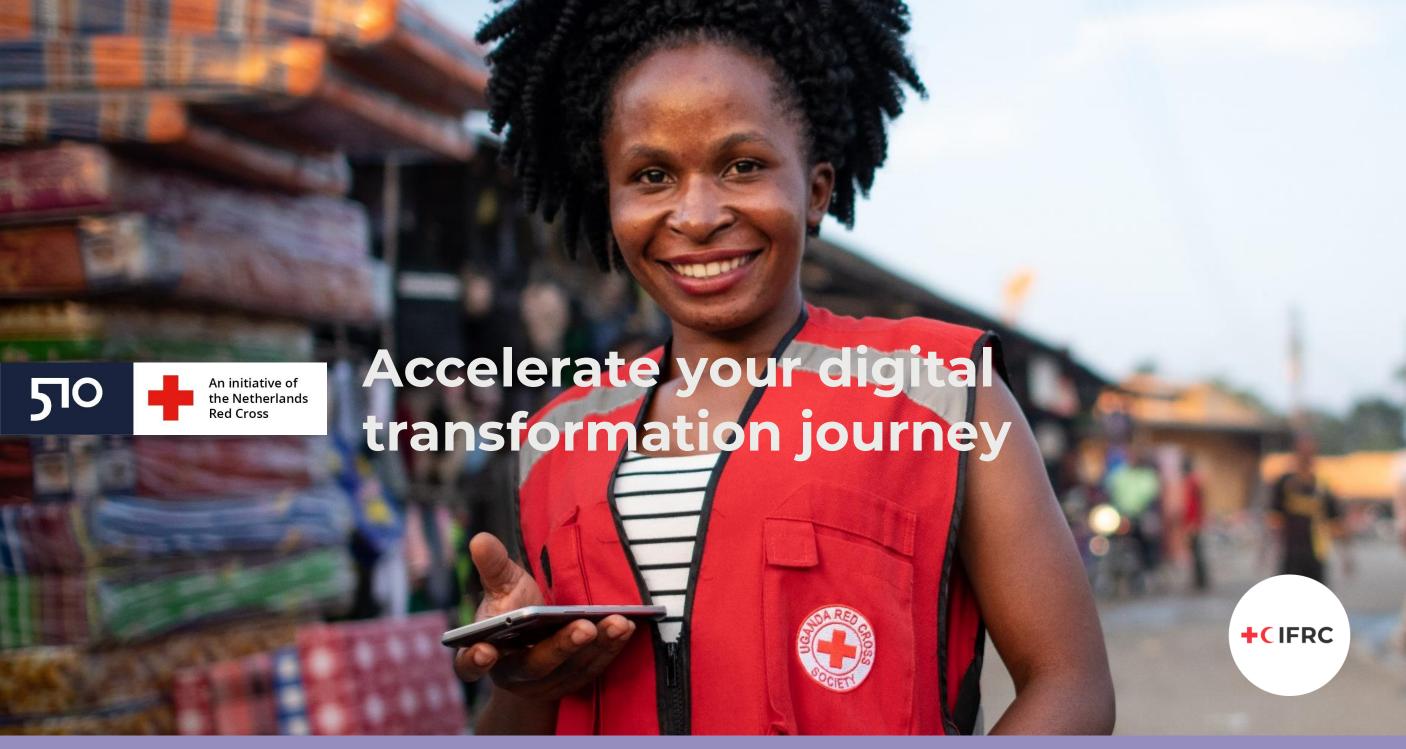
Degraded landscape has an immense influence on the ecological, economic and social state of a region. Therefore, efforts to improve the state of landscape will not only yield a healthier nature but can also bring new opportunities, financial capital, and security to communities. The Landscape Restoration Tool allows for an easy comparison of satellite images of the same region from two moments in time.

We implement this tool for humanitarian partners so that they can monitor the success of their landscape restoration programmes.









## **Digital Transformation**

Digital Transformation aims to improve humanitarian services delivered by National Societies to people in need. The IFRC network encourages National Societies to move from paper-based practices to system-level change through a shared digital maturity model, competency networks, and external partner engagement. 510 has been involved in the consultation process and implementation, helping lay the groundwork for a standard approach and leading a pilot to test digital transformation assessments in Uganda, Kenya, Ivory Coast, Norway, and the Philippines. The team developed a digital maturity QuickScan, data literacy tools, and data literacy trainings to help National Societies understand their strengths and opportunities for digital transformation.

#### Products/Services



- Digital Maturity Assessment
- Data Literacy Trainings
- Data & Digital Capacity Building
- Data & Digital Responsibility
- IFRC Data Playbook

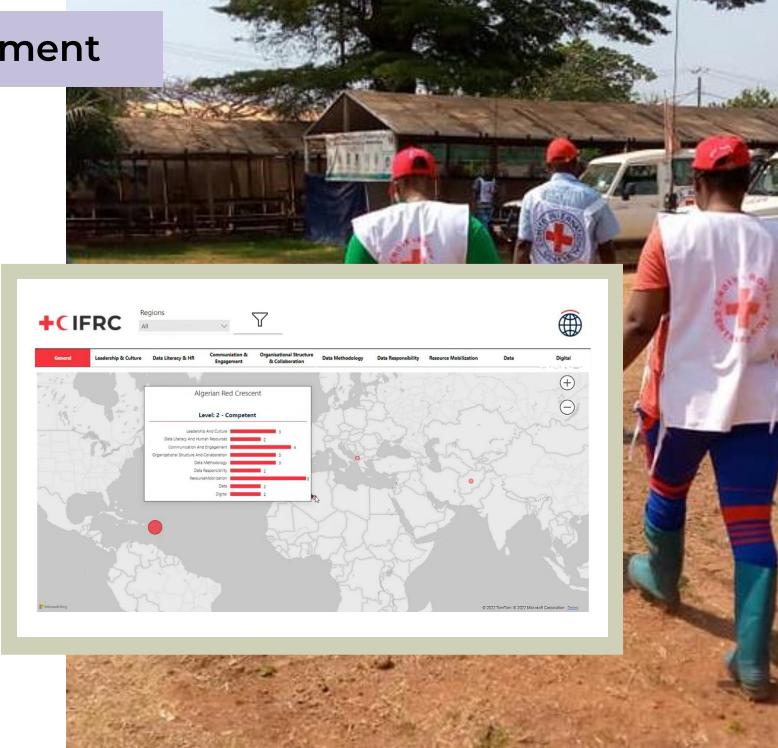


**Digital Maturity Assessment** 

Digital Transformation is about people, processes and technology. 510 supports National Societies in mapping where they are at across these domains, where they want to go to, and how to get there.

The Digital Maturity Assessment is based on a digital maturity framework which was developed by 510 in collaboration with a private sector partner and is integrated as key pillar of the IFRC's digital transformation strategy. 510 can support your National Society's digital maturity assessments by:

- Facilitating a QuickScan which consists of a survey and a groupinterview, and provides a high-level overview of where the National Society currently sits on the digital maturity spectrum and where it could possibly go to.
- Co-facilitating a full Digital Transformation Assessment which consists of in-person focus group sessions with a broad group of National Society representatives to develop a local roadmap towards digital transformation.





## **Data Literacy Training**

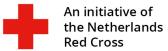
510 believes that data literacy is foundational to achieving digital transformation. Therefore, 510 offers data literacy trainings to staff and volunteers of RCRC national societies.

Our approach combines hands-on coaching and training during projects and disaster phases, along with immersive learning experiences. Our programs are flexible and tailored to National Society's needs — whether they are building new skills and procedures within daily activities, or actively building a data culture.

510 is a key contributor to IFRC's Data Playbook and is currently developing an IFRC-wide data and digital literacy curriculum tailored to National Societies at various levels of digital maturity.







## **Data & Digital Capacity Building**

510 supports National Societies in building data and digital capacity to ensure that data and digital solutions are integrated in humanitarian services and sustained beyond project cycles.

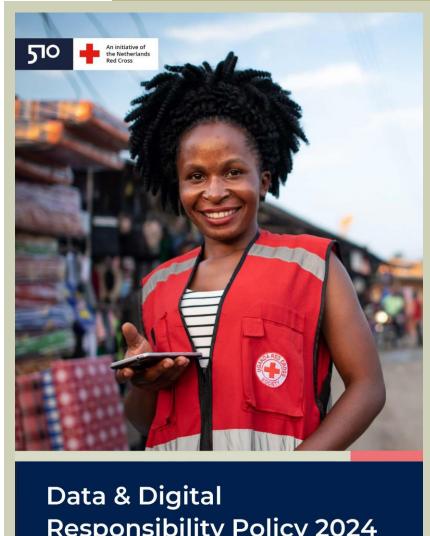
Our digital transformation advisors work with National Societies to develop investment plans to ensure resources are available to implement digital transformation.





## **Data & Digital Responsibility**

Data and digital technology can help us serve those in need better, faster and in a more cost-effective manner. When used irresponsibly or incorrectly, data and digital technology can also cause harm. Our data & digital responsibility policy addresses the responsible processing of data with respect to ethical standards and in principles in the humanitarian context. It bears in mind potential consequences and taking measures to avoid putting individuals or communities at risk.



**Responsibility Policy 2024** 

Going beyond privacy

Version 3.2







## Data Playbook

National Red Cross and Red Crescent Societies are providing humanitarian services to people affected. Some of the common global challenges and main trends are recognized in the IFRC's Strategy 2030. Going through a digital transformation will help National Societies to achieve their goals, by providing increasing speed, quality, effectiveness, accountability and transparency of their humanitarian services.

The Data Playbook can facilitate this process by means of its adaptable design for teams and programmatic work across the data lifecycle.

The Data Playbook contains 120 exercises, games, scenarios, slides and checklists to assist National Societies on their data journey.

The social learning content is designed for teams to have open discussions and interactive activities around data in short 30 minute to 1 hour sessions.















# Professional volunteers & academic research

### Volunteers

510 embraces volunteerism. Our volunteers have a broad range of skills - their work can be categorized into Data Science, Geographic Information System (GIS) and Modeling, Human-Centered Design, Data Analytics, Translations, SIMS, Software Development, and Data Responsibility.



**Academic Research** 

510 uses research to build evidence and innovate. Research topics are broadly defined within 510 in relation to project objectives and overall strategy. A few are more curiositydriven, can become ideas for future projects, and in some cases students or universities approach us with a proposal.

The scoping of research topics is an iterative and interactive process among different stakeholders, especially 510 and universities, whereby the thematic leads are key in defining the research priorities for their themes based on the needs of National Red Cross and Red Crescent Societies and ongoing project objectives. In addition, the MSc student expertise and interest of the University supervisor are considered.

#### Main scientific disciplines:

Geosciences
Computer science
Technology, Policy and Management (multi-actor systems, information management, agent-based modelling)
Econometry, statistical sciences
Epidemiology
Social sciences



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