What we do

Key thematic areas, products and services

510

An initiative of
the Netherlands
Red Cross

510: The Netherlands Red Cross' Data & Digital initiative

510 is the data & 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 Red Cross and Red Crescent National Society in need anywhere. 510's purpose is to improve speed, quality and cost-effectiveness of humanitarian aid by creating products and services using data and digital. 510 started in March 2016 with a core team of 3 and never stopped growing. Currently, 510 has 108 team members of whom 72 professional volunteers.

510
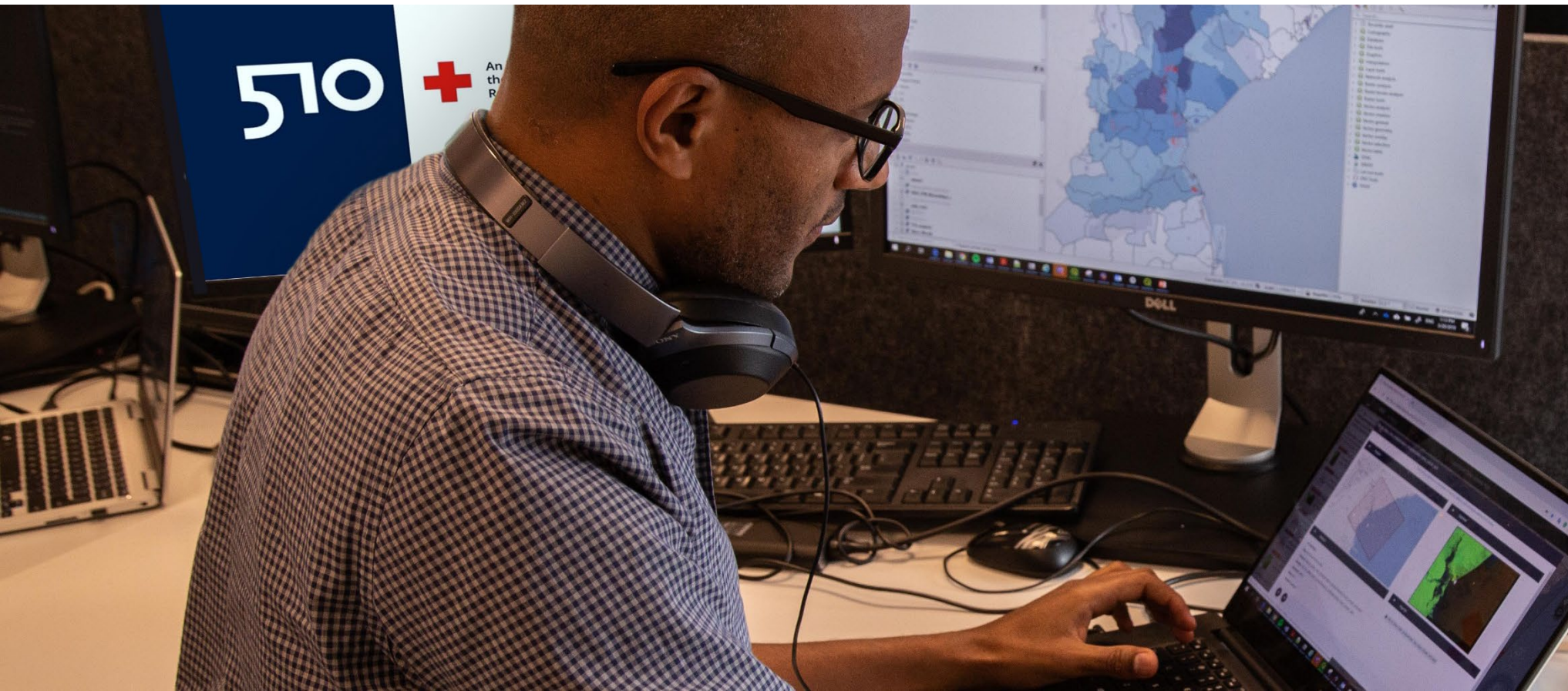
An initiative of
the Netherlands
Red Cross

The themes we work on

510's works on the themes below. How 510 works on each theme is showcased on the next page.
Each topic has its own products and services that can be found further in this information deck.

Anticipatory Action

Cash Aid

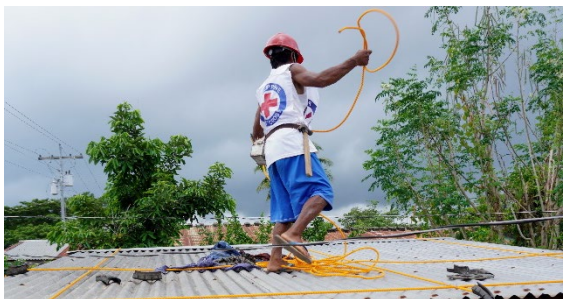**Digital Transformation**

Emergency Support

Water & Landscape

Our way of working

Our themes and topics

Anticipatory Action

- Impact Based Forcecasting
- Understanding the Risk

Cash Aid

- Digital Cash Aid
- Direct Digital Aid
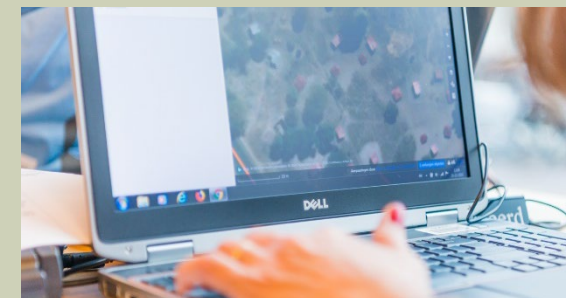
Digital Transformation

Emergency Support

Water & Landscape

- Landscape Restoration
- Data for Water

Our way of working

- Community Engagement and Accountability
- Human Centered Design
- Data & Digital Responsibility
- Volunteers
- Academic Research

Our products and services

Anticipatory Action

Understanding the Risk
- **Community Risk Assessment**
- **Epidemic Risk index**

Impact Based Forcecasting
- **Trigger Model**
- **Early Action Protocol**
- **IBF Portal**

Cash Aid

Digital Cash Aid
- **Cash Information Management**
- **121 Platform**
- **Cash Program Design Wizard**

Direct Digital Aid
- **WhatsApp Helpdesk**
- **Helpful Information Web App**

Digital Transformation

Digital Transformation
- **Digital Maturity Assessment**
- **Data Literacy**
- **Data team creation**

Emergency Support

Emergency Support
- **Information Management (IM)**
- **Automated Damage Assessment**
- **Social Media Monitoring**

Water & Landscape

Landscape Restoration
- **Landscape Restoration Tool**

Anticipatory Action

510 — An initiative of the Netherlands Red Cross

Anticipation Hub

Climate Centre

Thematic coordinators: **Marc van den Homberg** ✉   Aklilu Teklesadik ✉

Anticipatory Action

Anticipatory Action means taking steps to protect people before a disaster strikes based on early warning or forecasts. To be effective, it must involve meaningful engagement with at-risk communities. 510 works on Anticipatory Action through **Impact Based Forecasting** and **Understanding the Risk**

Understanding the Risk

- Community Risk Assessment
- COVID Risk Index

Impact Based Forcecasting

- Risk and Impact Analysis
- Trigger Model
- Early Action Protocol
- IBF Portal

Understanding the Risk

Which communities are the most vulnerable? What are the main risk areas and how is the risk changing over time? These are not questions to be answered when a disaster strikes. Preparedness program managers need this information so that preparedness activities can be implemented in targeted areas. Organizations implementing anticipatory actions need an understanding of where the most vulnerable areas are. Emergency responders can better target intervention and aid response towards supporting the most vulnerable if there is risk assessment information available. 510 supports these stakeholders with Digital Risk Assessment tools.

Products/Services

510

An initiative of
the Netherlands
Red Cross

Community Risk Assessment
Epidemic Risk index

Community Risk Assessment

Community Risk Assessment (CRA) is a dashboard that identifies and predicts the geographic areas that are most affected by a natural disaster. We build a dashboard that contains the 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 with three main components:

1: Long-term Hazard Risk (based on historical events): e.g. Flood & 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.
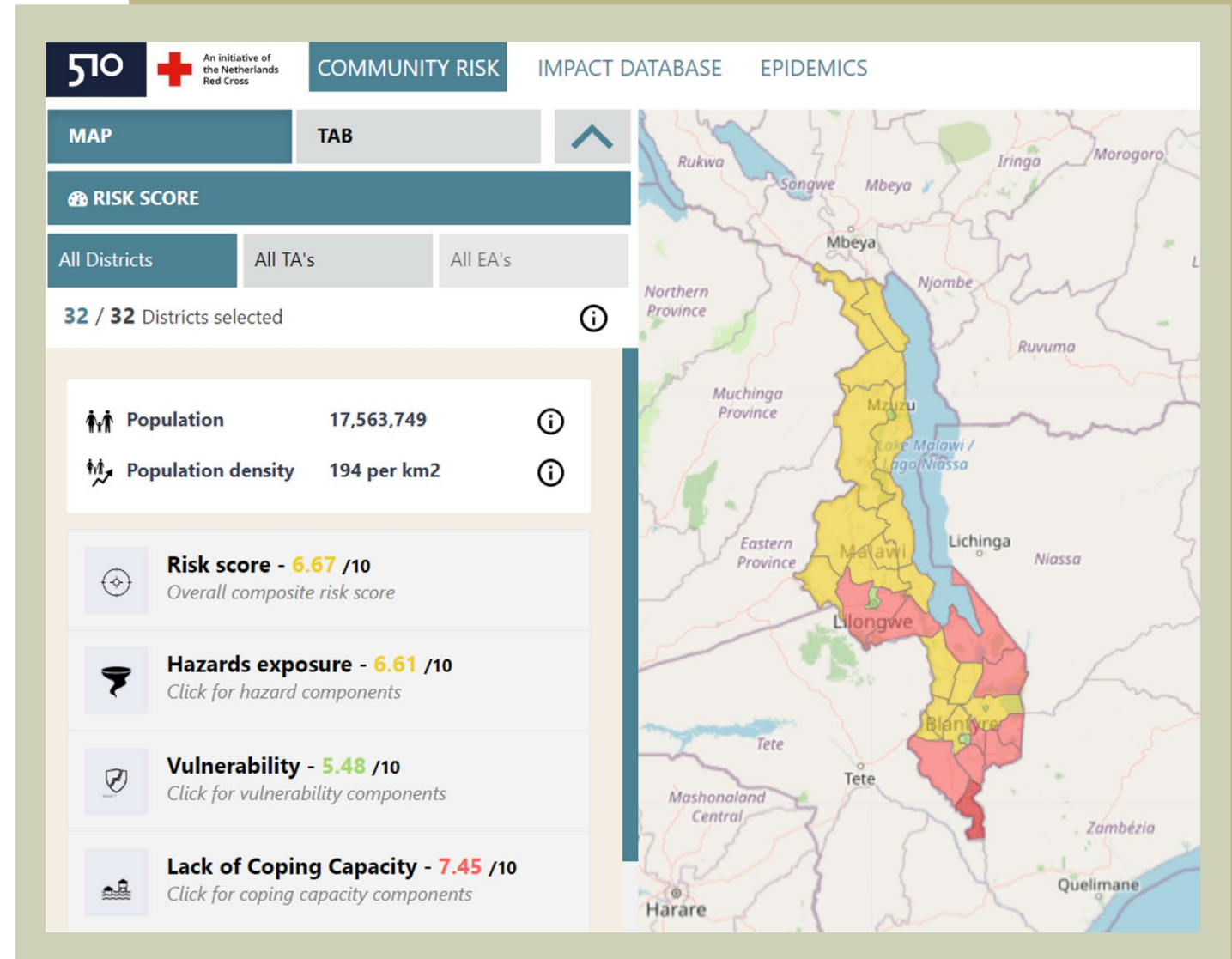
Epidemic Risk Index

The index translates information about crisis risk of a certain geographical region, including information about the SARS-CoV-2 virus or Dengue, into a single indicator that can be used for the response. The index can help National Societies identify at-risk areas and determine the major driving factors of risk, which supports them deciding how to best manage and plan for resource allocation.

510

An initiative of the Netherlands Red Cross
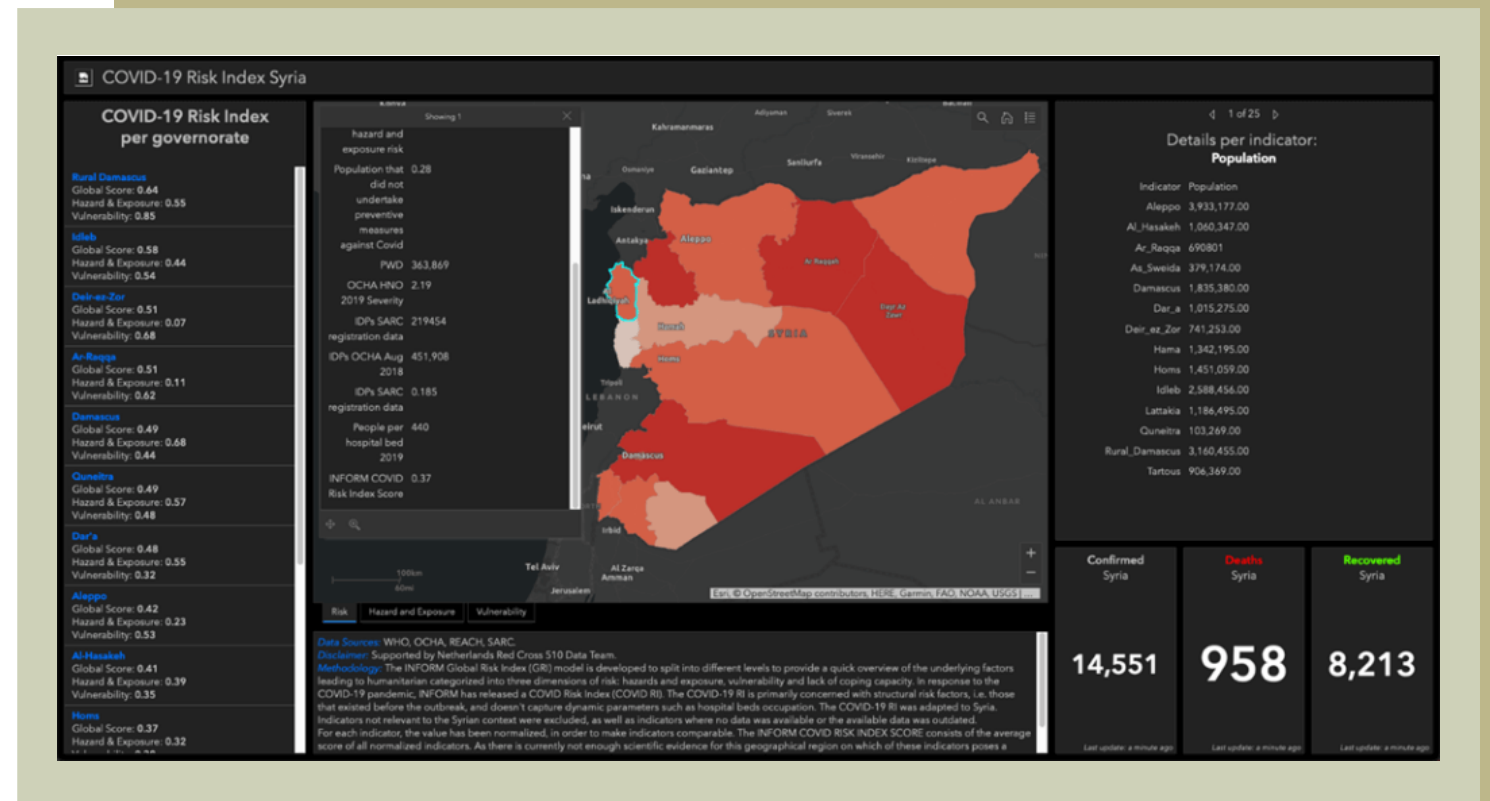
Impact Based Forecasting

Impact Based Forecasting (IBF) is a process of collecting and integrating data to predict the impact of impending disasters on vulnerable people living in areas prone to these disasters.

IBF enables anticipatory actions and revolutionizes the response to extreme weather and climate crises. Turning forecasts and warnings from descriptions of what the weather will be into assessments of what the weather will do enables organizations and individuals across the world to anticipate and take action to miti- gate the impacts brought by weather and climate events.

Releasing funds to vulnerable communities and individuals ahead of potentially devastating weather or climate events, enables anticipatory actions that save lives, livelihoods and property. 510 provides data & digital support towards development of impact based forecasting for floods, typhoons and droughts.

Products/Services

510

An initiative of
the Netherlands
Red Cross

Trigger Model
Early Action Protocol
IBF Portal

Trigger Model

IBF trigger models are used to trigger humanitarian anticipatory Ealy Actions Protocols (EAP's). So far, we've built models that trigger EAPs for typhoon, flood, dzud, drought or dengue hazards.

The Typhoon Trigger Model for instance was developed by 510, on behalf of the IFRC Network and its partners, and uses typhoon track and rainfall forecasts to predict the percentage of houses that will be severely damaged per municipality.

The prediction of the model is then used to activate humanitarian anticipatory EAP's which aim to mitigate, and to a certain extent prevent, the humanitarian impact of typhoons on people's homes and livelihoods, while building on government's mandatory pre-emptive evacuation procedures that save lives. With the intervention of EAP, the most at-risk communities will be provided financial resources to prepare prior to landfall. In the Philippines, a Multi-sectoral assistance will be delivered by the UN agencies, NGOs and the Red Cross/Red Crescent in close collaboration with local authorities.
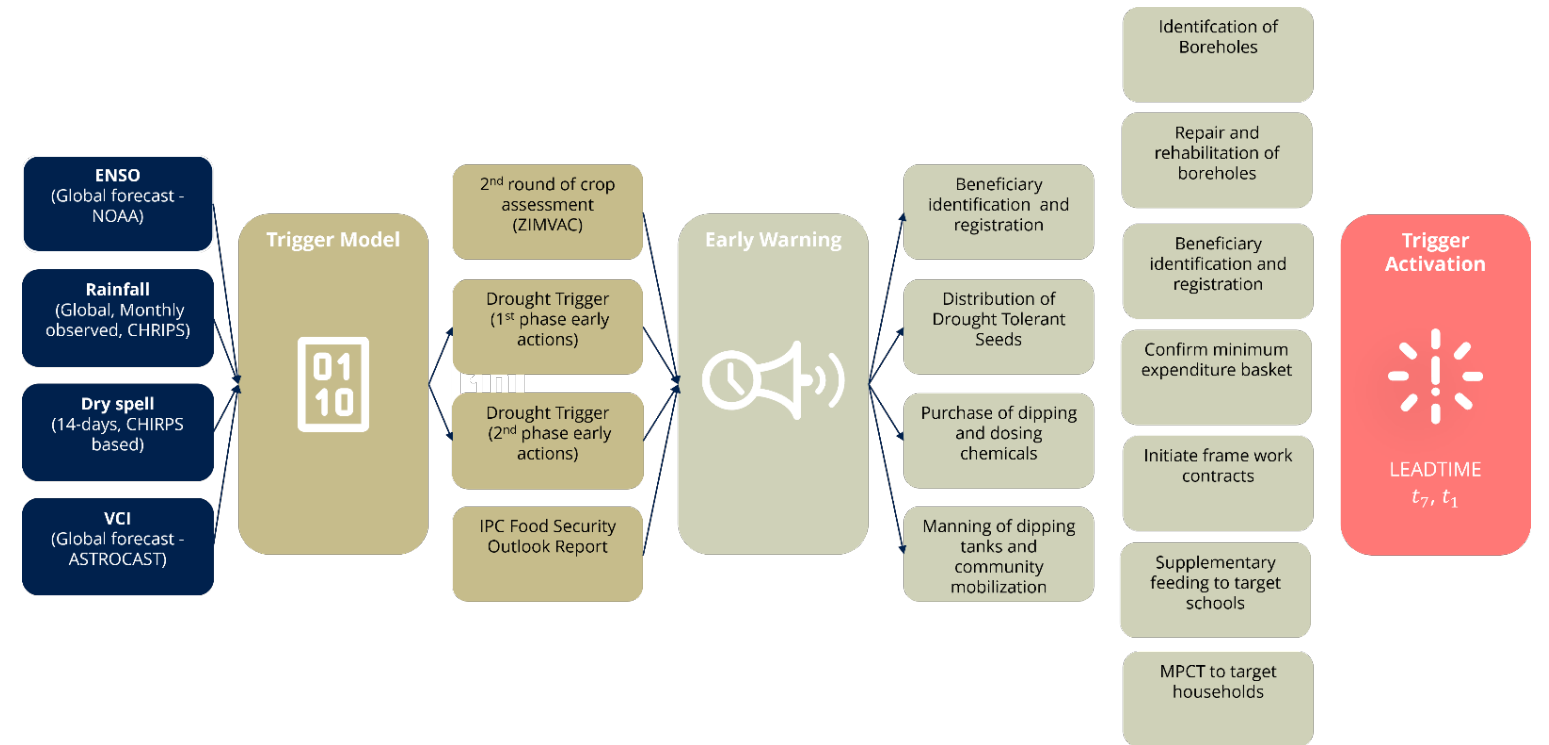
IBF Drought Trigger Model inputs in relation to the IBF Trigger timeline

510

An initiative of
the Netherlands
Red Cross

Early Action Protocol

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 actions before the event (a mechanism called Forecast Based Financing). 510 can help set up Early Action Protocols 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 Early Action Protocol (EAP) should be activated.

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

510

An initiative of the Netherlands Red Cross

IBF Portal

510 co-developed, with disaster managers in Red Cross National Societies and partners, the Impact Based Forecasting Portal (IBF Portal): a digital one-stop-shop of information that supports 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 decision makers to be able to act and execute pre-agreed early actions. The IBF portal is built upon insight from more than 160 co-design sessions with disaster managers and operational personnel in the Red Cross Movement, governmental and civil society stakeholders, as well as input from knowledge institutions and other humanitarian organizations.
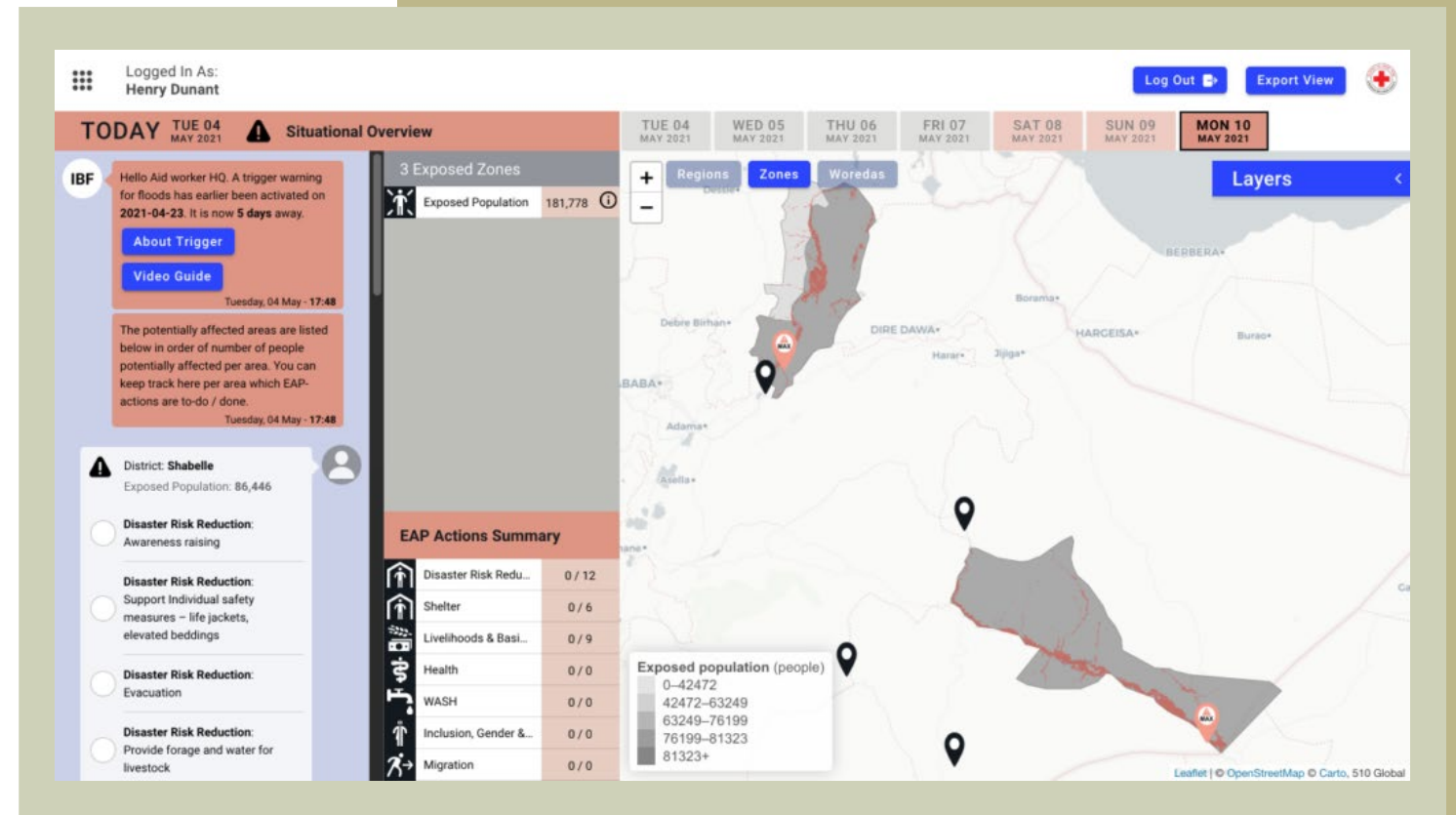
An initiative of the Netherlands Red Cross

Cash Aid

510 — An initiative of the Netherlands Red Cross

CashHub   IFRC

Thematic coordinators: **Lars Stevens**   ✉   **Fernando Suarez Jimenez**   ✉

Cash Aid

Giving cash to people affected by disasters is an effective, efficient and transparent way of providing humanitarian assistance to the most vulnerable. It ensures people have the freedom, dignity and independence to decide on their own recovery. The IFRC is a world leader in cash and voucher assistance and is committed to delivering 50% of their humanitarian assistance through cash and vouchers by 2025. 510 works on Cash Aid through Digital Cash Aid and Direct Digital Aid
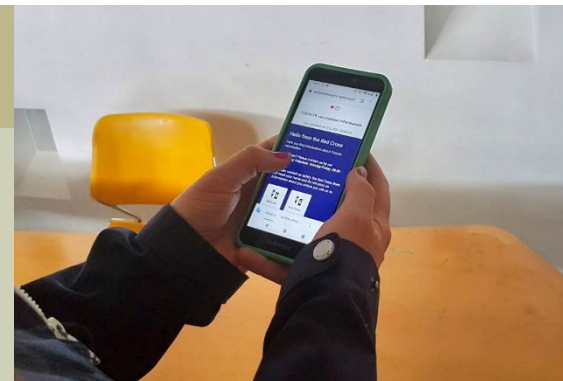
Digital Cash Aid

- Cash Information Management
- 121 Platform
- Cash Program Design Wizard

Direct Digital Aid

- WhatsApp Helpdesk
- Helpful Information Web App

Digital Cash Aid

Digital Cash Aid is the provision of e-cash or e-vouchers, when appropriate, for the affected population to decide how to meet their own basic needs using available local resources. Digital Cash Aid restores people's autonomy and helps to rebuild the local economy.

The International Disaster Database recorded a steady increase in the frequency of natural 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 natural disasters is through a combination of Digital Cash Aid and Forecast-based Financing (FbF). FbF allows for both decision-makers and people affect- ed to better prepare for and cope with natural disasters and thus reduce needs when disaster strikes. Digital Cash Aid offers a more efficient and dignified means to deliver assistance, em- powers people in need and fosters local economies.

510

An initiative of
the Netherlands
Red Cross

Cash Information Management

The 510 Cash IM service specializes in Information Management with a focus on cash. Information managements makes sure that accurate and timely information is available before, during, and after disasters. Our team consists of people with different experiences to make sure we can help National Societies in the best way we can.

National Societies are increasingly using Cash Voucher Assistance (CVA) to provide aid to people in need effectively and efficiently. The IFRC has committed to delivering cash and vouchers in 50% of humanitarian assistance by 2025. Cash projects request a large amount of data: registration, data sharing with Financial Service Providers (FSPs), Post Distribution Monitoring (PDM), Community Engagement (CEA), Project evaluations and reporting, etc. This means that you have to collect, analyze, clean, securely store, visualize, manage and share an increasing amount of data.

So, if you and your NS want to help more people with CVA, good Information Management enables you to help more people and reduce workload.

510

An initiative of
the Netherlands
Red Cross

121 Platform

The aim of the 121 Platform is to make cash based aid easier, safer and faster, to help people affected by disasters meet their own needs. This solution includes a Portal to assist the Humanitarian Organization in running a cash based safe program, using apps for the Person Affected and Aid Worker.
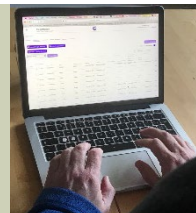

Person Affected App
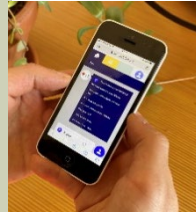
Aid Worker App

121 Portal

510

An initiative of
the Netherlands
Red Cross
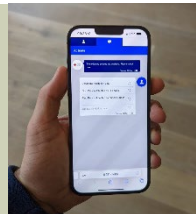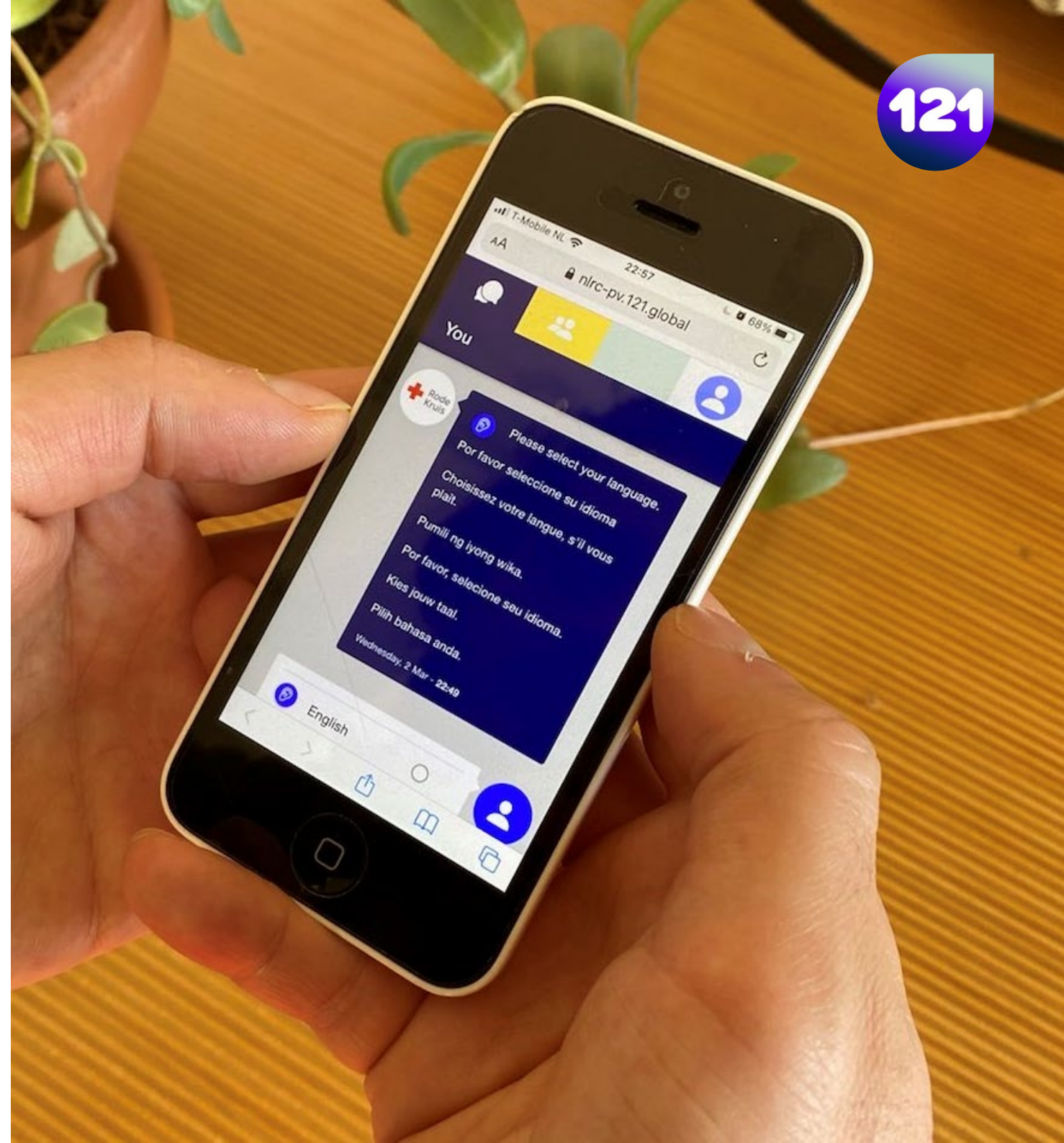
Person Affected App

The Person Affected App allows for easy registration from any location at any time. The Person Affected App was co-designed with people affected by disasters around the world, asking them about their experience of before, during and after receiving aid.
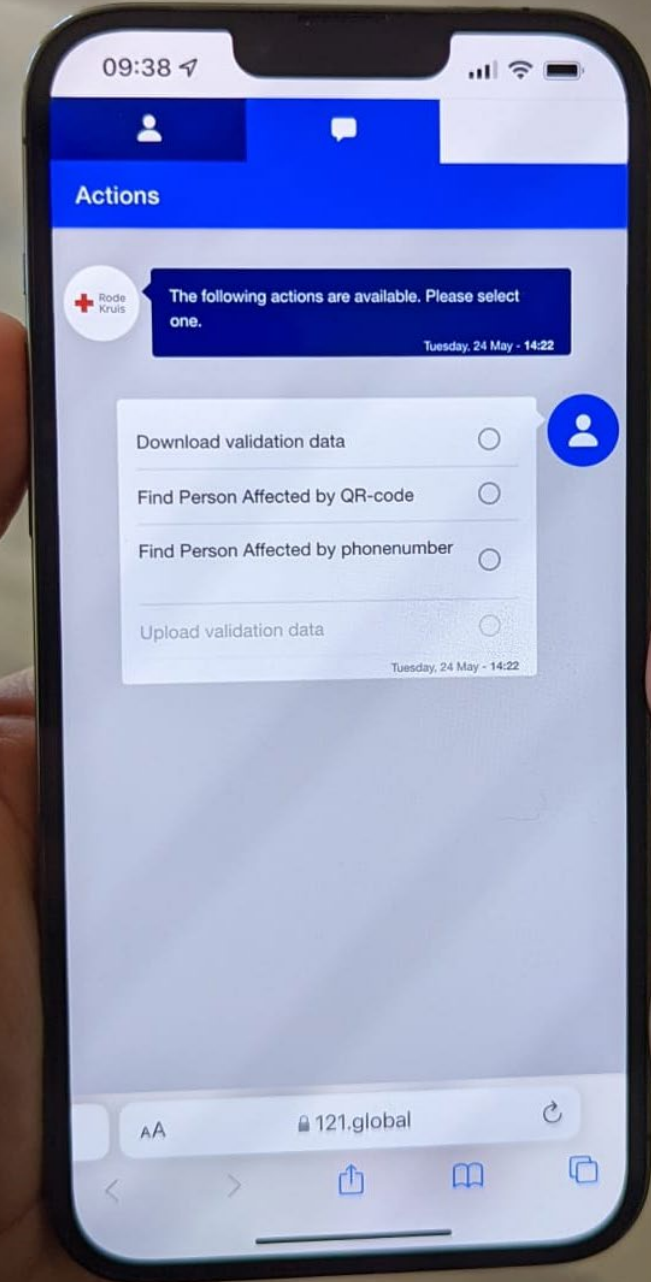

510

Aid Worker App

The Aid Worker App allows for Aid Workers in the field to easily validate registrations. The app helps to reduce duplication, increase efficiency and handle data responsibly.


An initiative of
the Netherlands
Red Cross

121 Portal

As a Cash Program Manager 121 Portal is made for you to easily gather, the Cash Program process as People affected go through the general processes from Program Design/ Registration/Validation & or Inclusion/ Payment/ Monitoring and Evaluation. This product helps you as a Cash Program Manager by increasing efficiency in setting up and executing a cash program IM system. It also creates an overview with real-time updates on nonlinear phases registration / validation / inclusion / review inclusion / payments / monitor & evaluation. In addition, it has a familiar setup with real-time traceability and dashboard, enabling efficient coordination a has security with a privacy by design system. Furthermore, it reduces the time taken to work in many different documents.

An initiative of the Netherlands Red Cross
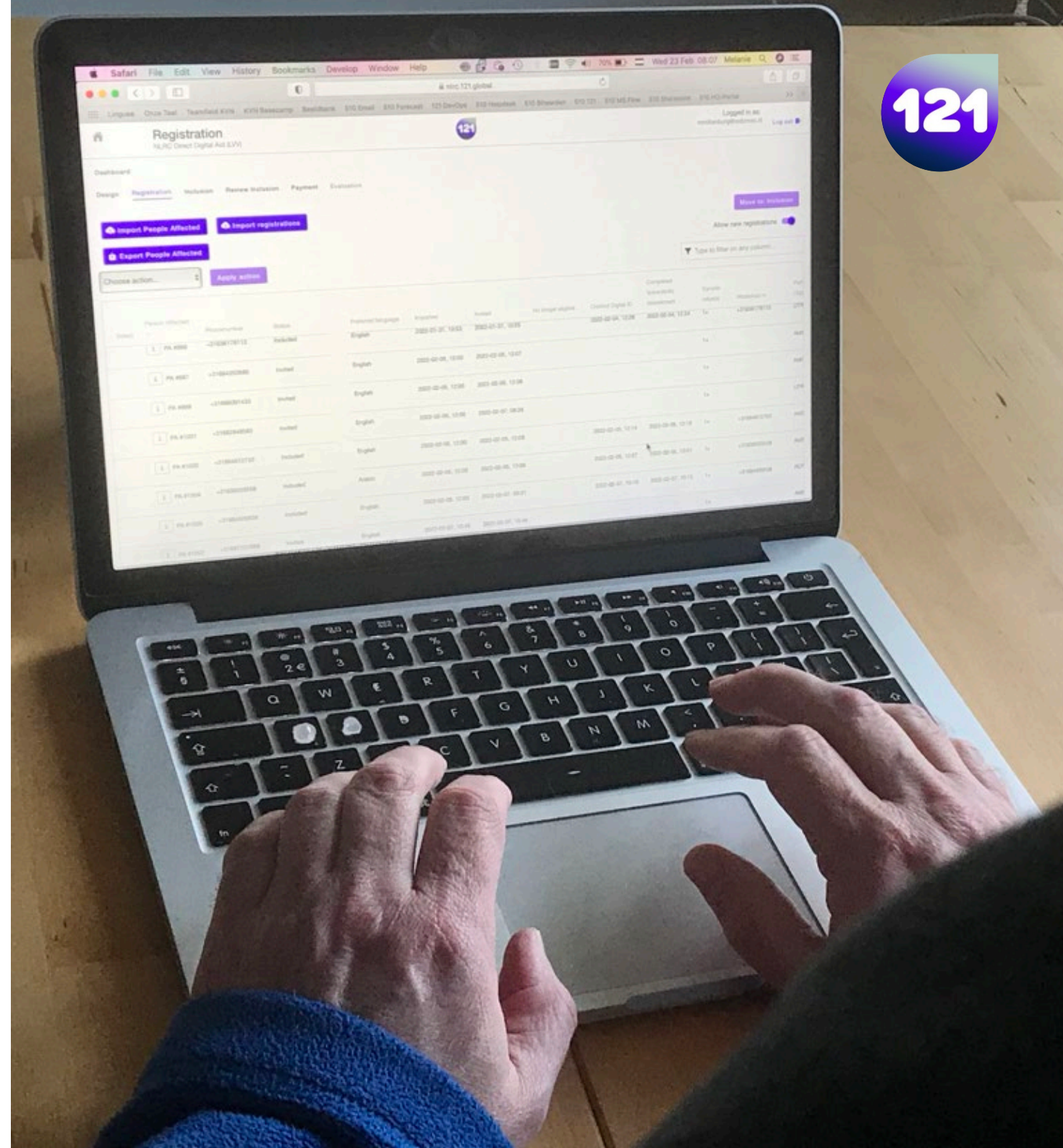
Cash Program Design Wizard

The Cash Program Design Wizard is a simple web-based tool that helps humanitarian organizations to design cash programs in line with international standards and best practices and address challenges based on real experiences across multiple contexts. Its main purpose is to guide Aid Workers through a simple set of intuitive questions that results in a quality cash program. It does so by starting with the reality of the human context rather than the cash solution, reducing uncertainty on cash program parameters and it increases the speed to set up usage across locations and organizations. .

Direct Digital Aid

Direct Digital Aid is a package of digital products and services that 510 developed to support undocumented migrants who have difficulties to meet their basic needs. It has been built to connect with migrants through their mobile phones and combines digital Community Engagement and Accountability (CEA) and digital Cash and Voucher Aid (CVA).

The services are partly built around earlier developed and/or existing tools, and have been tailored to the particular needs and priorities of both undocumented migrants and aid workers in the Netherlands, by using a Human Centered Design approach. Even though the products and services can be seen as stand- alone, we believe the combination of it best supports undocumented migrants towards autonomy and self-reliance.

Direct Digital Aid could be of interest to other Red Cross and Red Crescent Societies supporting people on the move. 510 is ready to support these National Societies to adjust Direct Digital Aid to their needs and priorities.

Products/Services

510
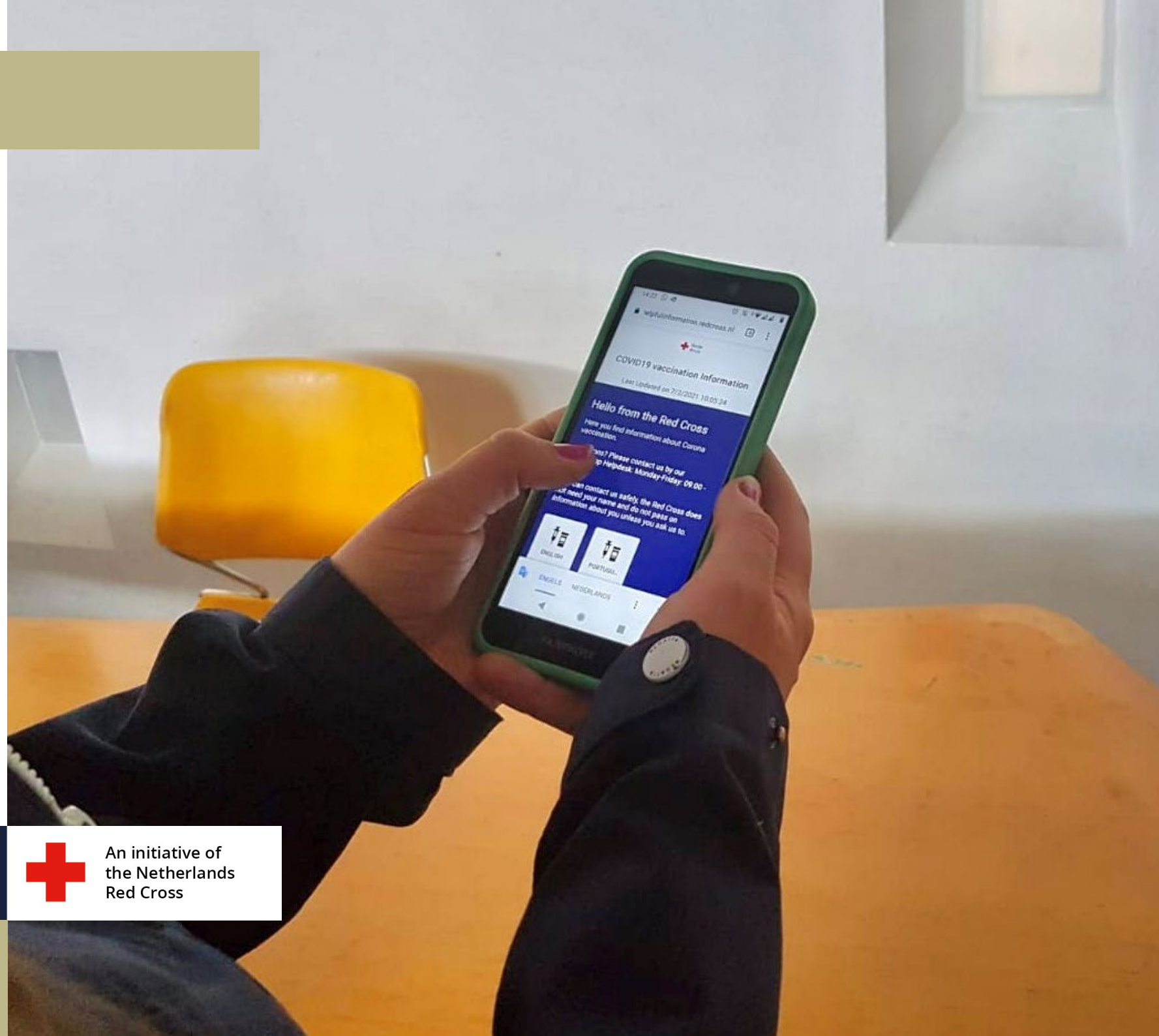
An initiative of the Netherlands Red Cross

WhatsApp Helpdesk
Helpful Information Web App

WhatsApp Helpdesk

The WhatsApp Helpdesk is developed for People Affected to understand more about the aid they applied for, or to let us know if they face any problem with e.g. the registration process or receiving the voucher. They can also approach the Helpdesk for other topics, such as to learn where to find shelter, medical care or legal support, or even where to find a language training. The Helpdesk improves the connection with Aid Workers who can help with questions they might have. As the Helpdesk is available 7 days/week, it provides People Affected quickly and gives easy access to the Humanitarian Organization. In addition, the questions and feedback received through the Helpdesk provide the Humanitarian Organization valuable insights in the context, needs and constraints of the Person Affected, which can be used to further develop the services/products.

An initiative of the Netherlands Red Cross
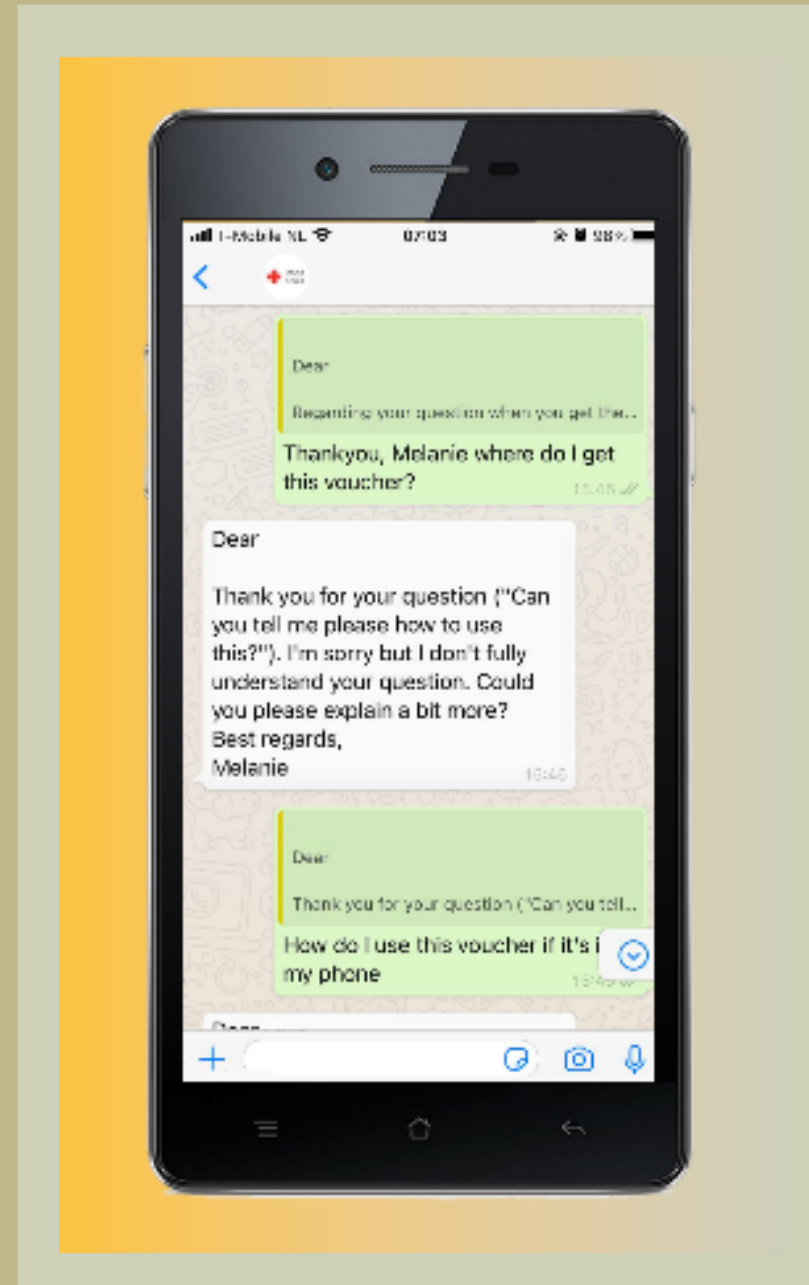
Helpful Information Web App

The Helpful Information Web App is an information source for undocumented migrants with available help in the Netherlands. The Web App is available to everyone and the current information spans shelter, medical assistance, legal advice, and COVID-19. When building an app, it is important to center it around the user. The Web App is a direct result of co-designing and user testing with undocumented migrants whose knowledge and experience designed this Web App.
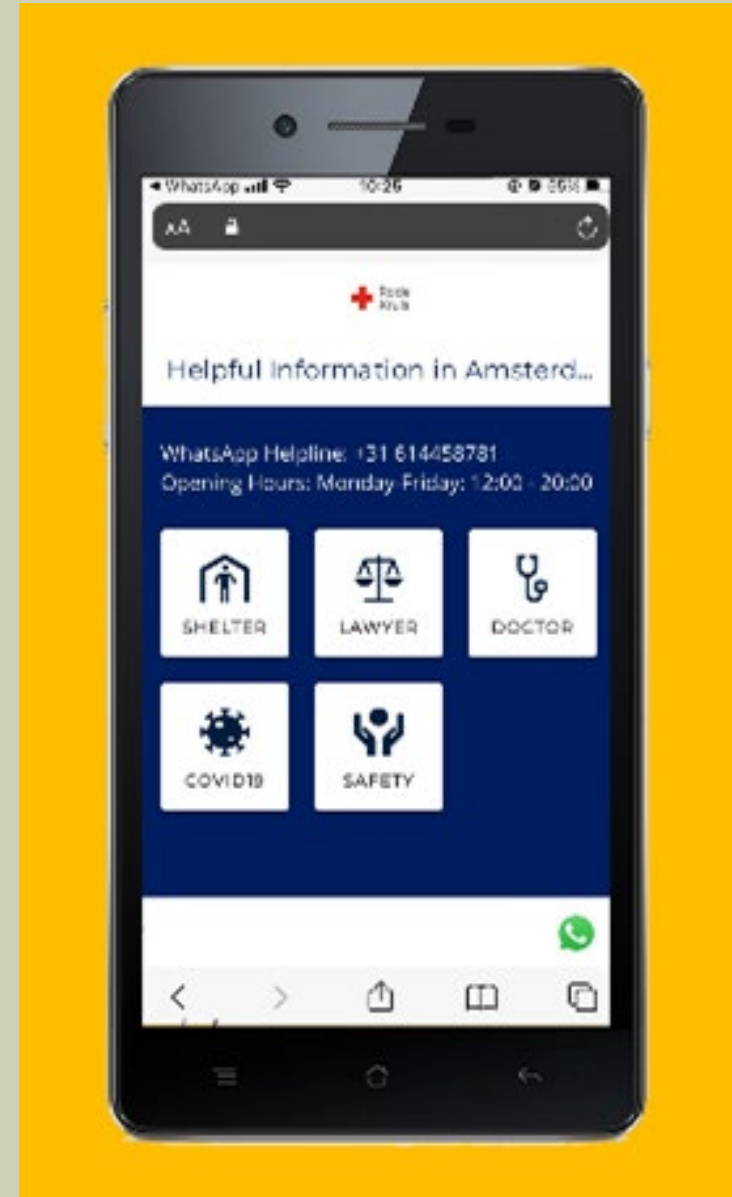
Digital Transformation

510 — An initiative of the Netherlands Red Cross

IFRC

Thematic coordinator: Liselot Kattemölle ✉

Digital Transformation

Digital Transformation is an incremental and disruptive shift that allows the IFRC network to improve its humanitarian services delivered by National Societies to people in need. The IFRC's digital transformation strategy recognizes the vast but various data and digital capabilities across the network and encourages National Societies to move from the one level of digital maturity to the next, from paper-based practices to system-level change. It does so via an organizing model that includes a shared digital maturity model to structure our collective digital transformation journey, competency networks to facilitate peer to peer support, external partner engagement and coordination via a digital transforma- tion department.

510 has been closely involved in the consultation process that led to the formulation of the IFRC digital transformation strategy, as well as its current implementation. 510 laid the groundwork for a digital maturity model that has been adapted as a standard approach in the strategy. 510 led a pilot to test a digital transformation assessment with Uganda, Kenya, Ivory Coast, Norway and the Philippines. Also, 510 developed a so-called digital maturity QuickScan to provide National Societies an insight in strengths and opportunities for digital transformation. In addi- tion, 510 is developing data literacy tools for distribution across the network and is providing data literacy trainings to National Societies.

Products/Services

510

An initiative of the Netherlands Red Cross

DT Assessment
Data Literacy
Data team creation

Digital Maturity Assessment

Digital transformation is not just about implementing tools and technology, but also about enabling people and processes. 510 supports national societies in mapping where they are across these domains, where they want to go to, and how to get there. This Digital Maturity Assessment is based on a digital maturity framework that was developed by 510 in collaboration with a private sector partner and 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 group-interview and provides a high-level overview of where the national society currently sits in the digital maturity spectrum and where it could possibly go to.
- By co-faciliating a full Digital Transformation Assessment which consists of a series of interviews and workshops with a broad group of NS representatives to develop a local roadmap for digital transformation.

510

An initiative of the Netherlands Red Cross
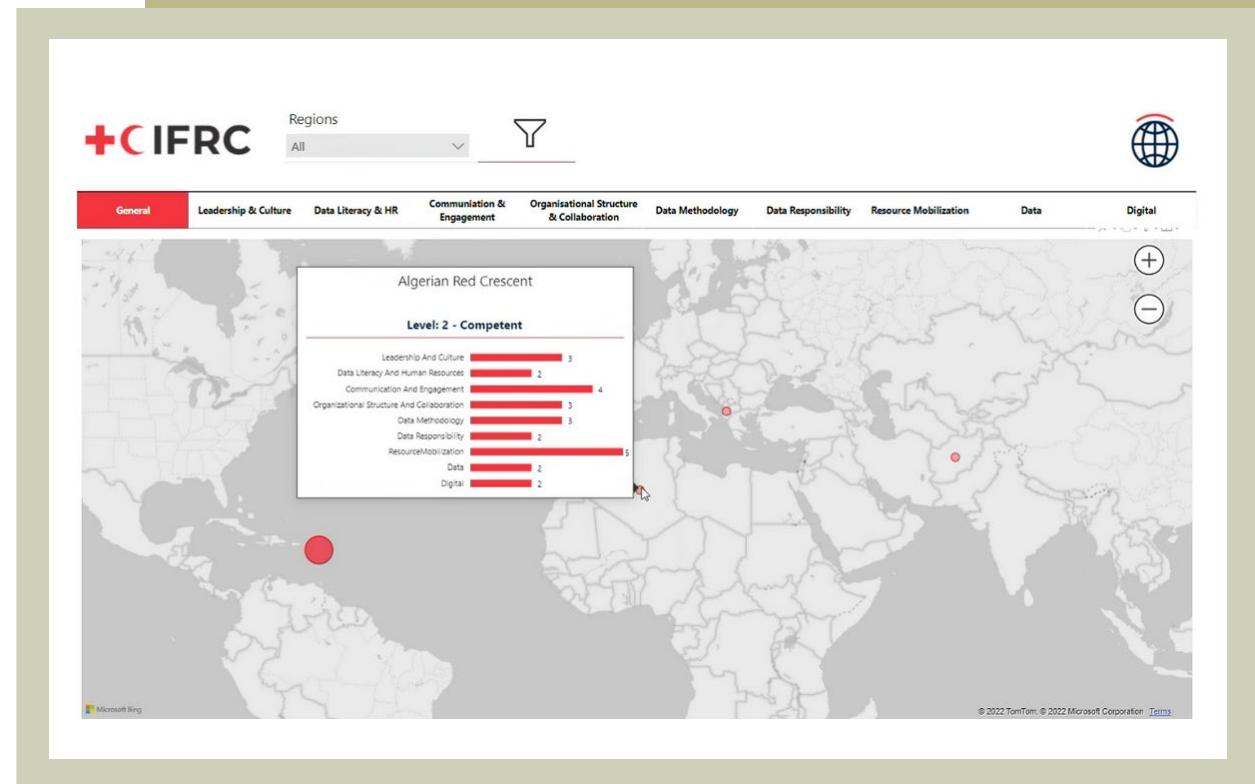
Data Literacy

510 believes a digital and data-driven transformation of humanitarian aid will only happen if we invest in building data literacy. We collaborate with our partners to build capabilities so they can impact the speed, accuracy & efficiency of data-driven & digital transformation.

Our approach combines hands-on coaching & training during projects & disaster phases alike, along with immersive learning experiences. Our programs are flexible and tailored to your National Society's needs—whether you're building new skills & procedures within your daily activities or actively creating data teams. In addition to our focus on building your data capabilities, we take an active role in panels & forums for executives and thought leaders on emerging humanitarian aid trends.

DATA PLAY BOOK

IFRC | solferino academy

Data team creation

Digital transformation is all about people, process and technology. 510 supports national societies to address the "people" domain of their digital transformation journey, as we believe that leadership, culture and data literacy are key to creating an enabling environment for digital transformation. To ensure the right "people" are in place to accelerate and absorb digital transformation in the national society, 510 helps in establishing local data teams. Data teams consist of a data team manager, data analyst and a GIS expert. They are established to ensure data and digital solutions are integrated in humanitarian services and sustained beyond project cycles. In this way, 510 increases local capacity to sustain the data-driven products and digital solutions that it delivers.

Emergency Support

510

An initiative of the Netherlands Red Cross

IFRC

IFRC

Emergency Support

In the category of Emergency data support, you will find the products created specifically for Disaster Response. We create these products both as part of the Surge Information Management Support (SIMS) network and in response to small- er scale disasters that are not coordinated through SIMS. SIMS is a network of trained specialists who develop, coordinate and implement information management systems for global Red Cross and Red Crescent disaster response operations. With the following products below we respond to the communities affected.

Products/Services

510

An initiative of the Netherlands Red Cross

Information Management (IM)
Automated Damage Assessment
Social Media Monitoring

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 how much damage there is, 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 response time will decrease from weeks to hours, and this will make a difference in the number of lives that can be saved.

510

Social Media Monitoring Tool

The Social Media Monitoring Tool scans tweets from Twitter (based on predefined keywords and locations), analyses their content, and assigns topics. This knowledge provides understanding of target audiences when developing communication campaigns. Understanding the target audience of communication campaigns and their worries, fears and misbeliefs is crucial for successful communication campaigns.

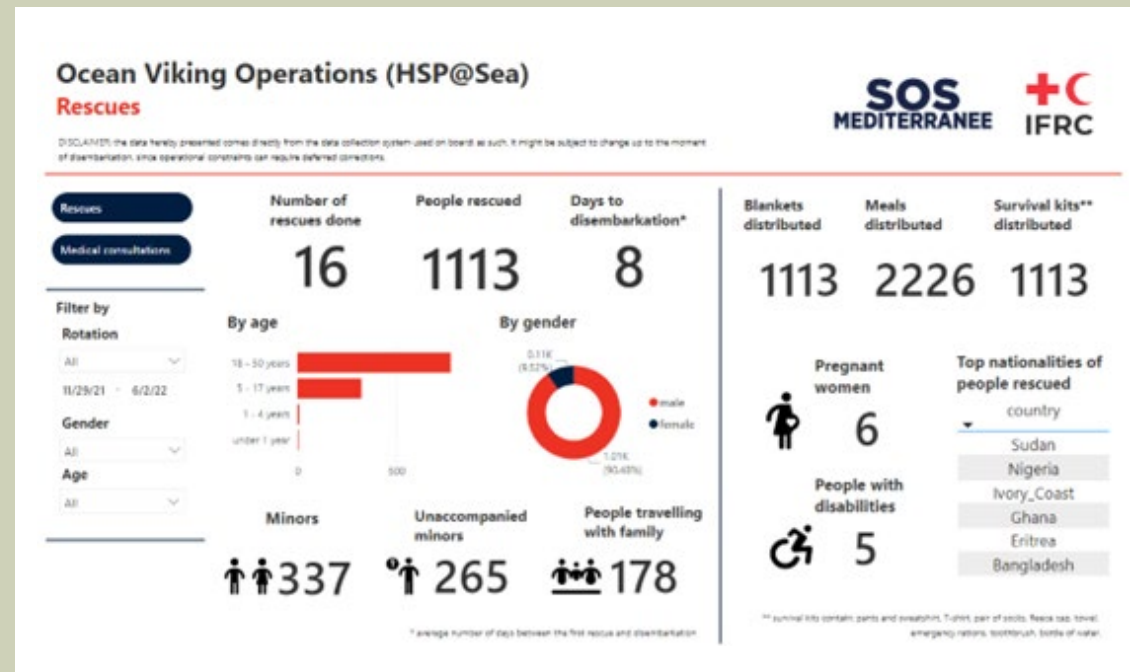An initiative of
the Netherlands
Red Cross
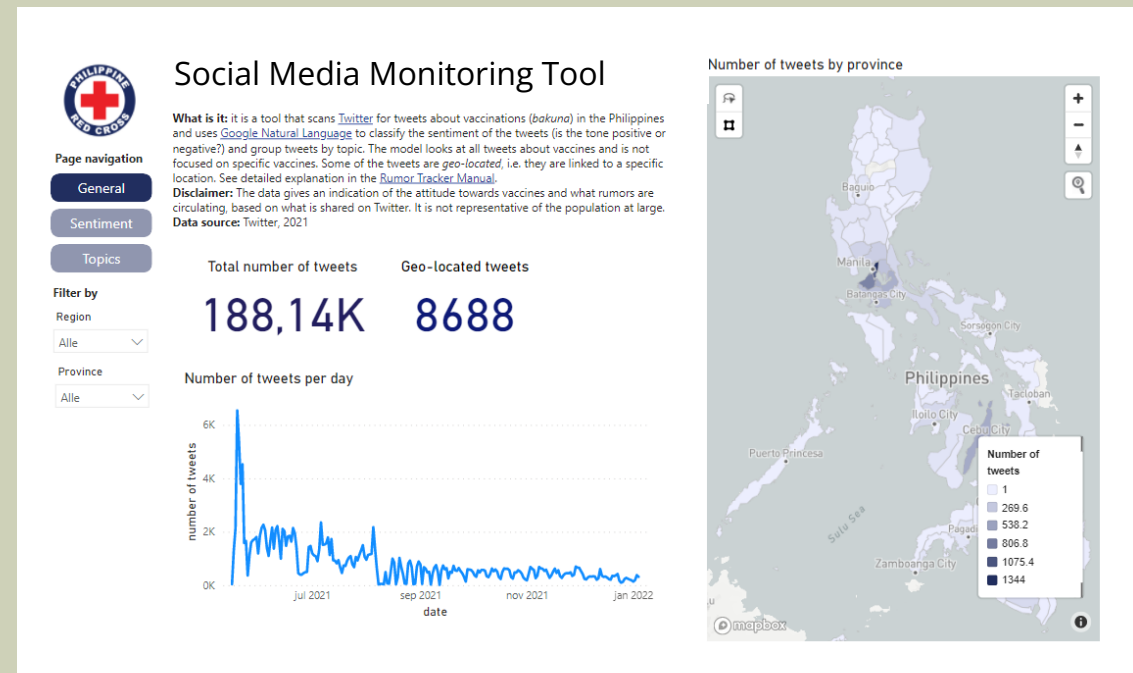
Information Management

Managing information means managing and understanding data: from collecting, combining, and analyzing it, to visualizing and disseminating it. In times of emergencies, information management enables evidence-based decision-making, which translates into better planning, budgeting, and better prioritization of geographical areas or vulnerable groups in the response.

510 does information management in emergencies through:

•Mobile data collection, from setting up telephones to developing questionnaires and analyzing results.

•Data analysis in support to operations, e.g. needs assessment or gap analysis.

•Data visualization through dashboards or infographics, e.g. operation updates, 3W.

•Mapping of populated areas (e.g. through Missing Maps), key facilities (e.g. water points), or operational activities.

•

And more! Both remotely and directly in the field.

510

**An initiative of
the Netherlands
Red Cross**

Water & Landscape

510

An initiative of
the Netherlands
Red Cross

DSS water

Water & Landscape

The IFRC aims to protect nature and lives and working with nature to reduce disaster risk. The IFRC is also at the forefront of responding to global water, sanitation and hygiene (WASH) needs. 510 works on Water & Landscape through Landscape Restoration and Data for Water

Landscape Restoration

- Landscape Restoration Toolbox

Data for Water

Landscape Restoration

Landscape Restoration is the improvement of degraded land on a large scale that rebuilds ecological integrity and enhances people's lives.

A lot can change in 30 years when it comes to landscape. New cities can be build, burned forest can regrow, rivers meander etc. Those processes are interconnected and impact each other immensely. When agricultural land degrades for instance, communities loose their livelihoods and financial capital. This in turn will prompt the population to leave the region in search of better opportunities. That is why a holistic approach that takes into account natural, social and economic capital is essential when work- ing on landscape restoration. And that is why it is important to monitor the changes that happen to landscape.

510 developed the Landscape Restoration Toolbox. One of the tools (Historical Analysis), allows easy comparison between two satellite images of the same region. The tool shows which are- as have been affected by deforestation. The site suitability anal- ysis helps identify the zones that should be prioritized, as well as zones where the reforestation success rate may be higher. It is an important decision support tool that can guide project managers in selecting the areas to be reforested first.

510

An initiative of the Netherlands Red Cross

Landscape Restoration Toolbox

Landscape Restoration Toolbox

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

An initiative of
the Netherlands
Red Cross
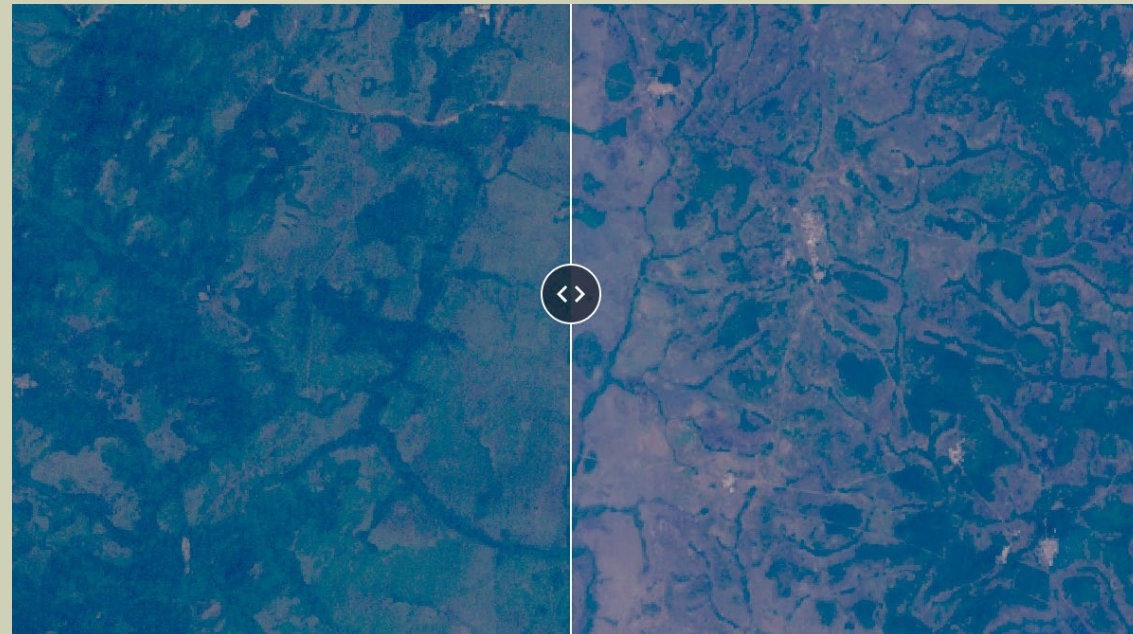
Data for Water

Climate change has affected the water cycle in various magnitudes, leading to plenty of hazards related to water and affects millions of people in every part of the world. In large parts of the world, a shortage of water causes major problems, such as a food shortage because of droughts. While at the same time in other parts of the world, too much water causes great disturbance due to flooding.

Together with National Societies, 510 analyzes different water related data to understand climate events and use it as guidance to reduce their impact on people's lives. Data about water not only relates to droughts and flooding but also includes WASH (Water, Sanitation and Hygiene) related topics. WASH implements Water, Sanitation and Hygiene programs that are a combination of hardware (providing safe water and latrines) and software (hy- giene promotion). The data is gathered for instance on locations of water pumps, water critical infrastructures, urban WASH and drainage design.

Our way of working

Our way of working

510's purpose is to improve speed, quality and cost-effectiveness of humanitarian aid by creating products and services using data and digital. When developing our products and services the following aspects are taken into account: Community Engagement and Accountability, Human Centered Design, Data & Digital Responsibility, Volunteers and Academic Research.

Community Engagement and Accountability >	**Human Centered Design** >
Data & Digital Responsibility >	**Volunteers** >
Academic Research >	

Community Engagement and Accountability

Digital Community Engagement and Accountability (CEA) is an approach to Red Cross and Red Crescent programming and operations. Supported by a set of activities that help put communities at the center of what we do, CEA integrates communication and participation throughout the program cycle or operation.

Community engagement recognizes and values communities as equal partners and ensures their opinions are heard and used to design the humanitarian work. The COVID-19 crisis has accelerated the need for digitalization to reach out to and hear from communities. 510 designs and develops tools to support this need and enable National Societies and their partners can keep close contact with the communities with the tools that 510 designs and develops.

510

An initiative of
the Netherlands
Red Cross

Human Centered Design

Human Centered Design (HCD) sits at the intersection of empathy and creativity. It is a design and management framework that develops solutions to problems by involving the human perspective in all steps of the problem-solving process. Utilized in multiple fields, including social sciences and technology, HCD has been noted for its ability to consider human dignity, access, and ability roles when developing solutions.

510

An initiative of
the Netherlands
Red Cross

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.
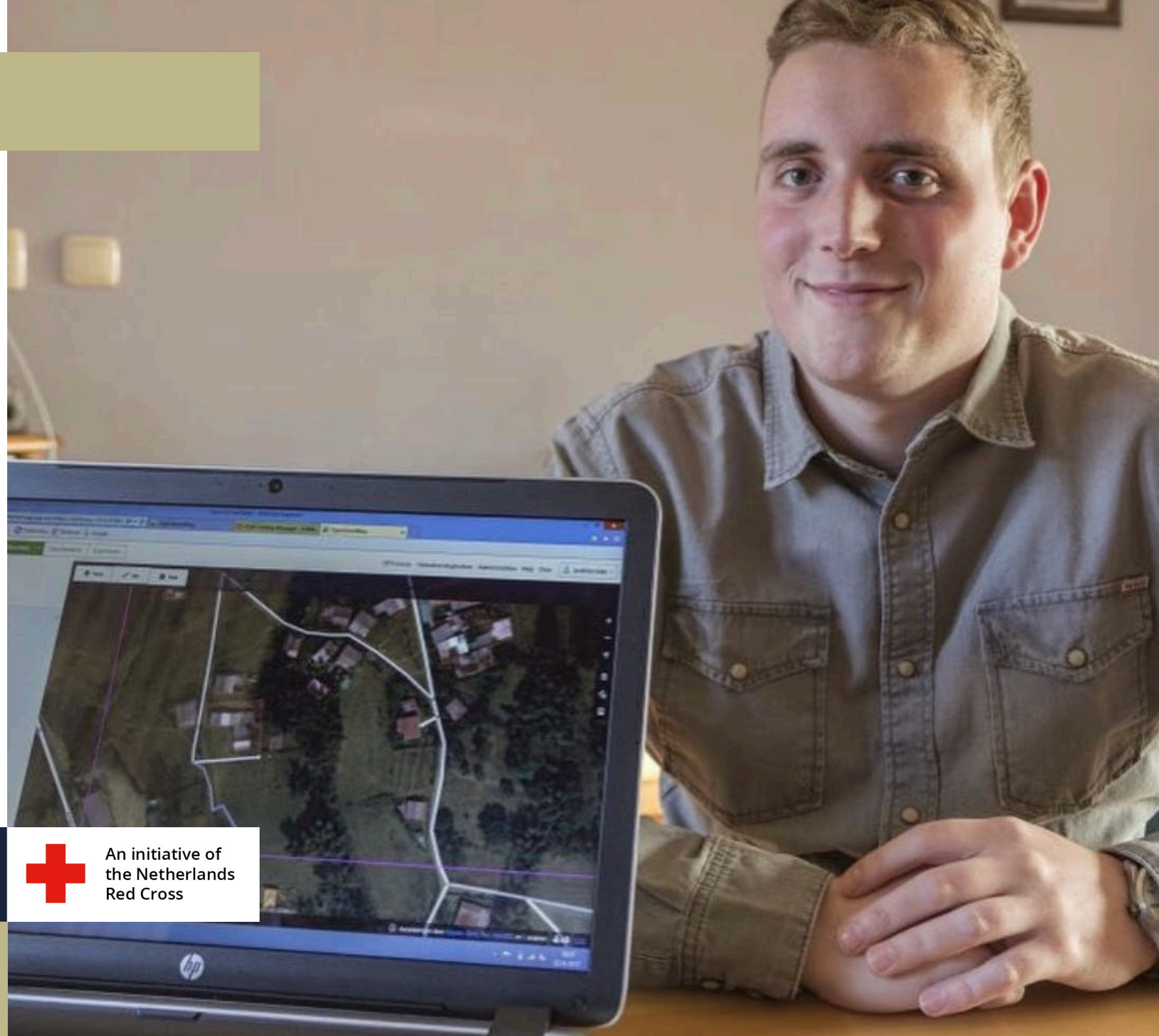

510

An initiative of the Netherlands Red Cross

Volunteers

510 embraces volunteerism. 510's volunteers have a broad skill range and their work can be categorized into Data Science, Geographic Information System (GIS) & 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 curiosity driven, can become ideas for future projects, also in some cases students/universities come with a proposal.

The scoping of research topics is an iterative and interactive process among different stakeholders, especially 510 and university, whereby the thematic leads are key in defining the research priorities for their themes (based on the needs of Red Cross and Red Crescent National 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

510

An initiative of the Netherlands Red Cross

Reach out to us

Anticipatory Action

Marc van den Homberg
mvandenhomberg@redcross.nl

Aklilu Teklesadik
ateklesadik@redcross.nl

Cash Aid

Lars Stevens
larsstevens@redcross.nl

Fernando Suárez Jiménez
fsuarezjimenez@redcross.nl

Digital Transformation

Liselot Kattemölle
ljkattemolle@redcross.nl

Emergency Support

Jacopo Margutti
jmargutti@redcross.nl

Heleen Elenbaas
helenbaas@redcross.nl

Water & Landscape

Marijke Panis
jmargutti@redcross.nl

An initiative of
the Netherlands
Red Cross