SAVING LIVES
CHANGING LIVES

Innovations for Resilience Convening

Key takeaways and implications for Innovative Frontiers for Resilience Development

20-21 November 2017

WFP Innovations Accelerator

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Contents

1. The main objectives and outcomes of Innovations for Resilience Convening

The objective of the '**Innovations for Resilience Convening,'** held in Munich on November 20 – 21st, was to collectively contribute to Agenda 2030 by exploring sustainable innovations that build resilience and enhance development outcomes, across both public and private sector partners.

The convening was co-hosted by the Global Resilience Partnership (GRP), World Food Programme (WFP), United Nations Development Programme (UNDP), and One Billion Coalition for Resilience (1BC) — a joint initiative of the International Federation of Red Cross and Red Crescent Societies (IFRC), WFP, UN Connecting Business initiative, UNICEF, and other partners. The convening brought together GRP's and UNDP's thought leadership on resilience and portfolio of innovations; WFP's operational knowledge, in-house innovation and country office experiences; 1BC's wider range of examples to showcase resilience-building innovations, and the diverse range of experience of the invited private sector counterparts to provide key insights on scaling, exit strategies and innovation.

The convening aimed at enhancing the understanding of the role innovation and technology play in contributing to resilience and the challenges faced by practitioners when replicating or expanding solutions on a regional or global scale, as well as to showcase innovations that improve local resilience and can be scaled nationally, regionally and globally. In addition, the convening provided an opportunity to connect humanitarian and development innovators with private sector partners.

The main outcomes achieved throughout two days were to:

- take stock of successful resilience tools and innovations,
- create a network for continued dialogue on innovation towards increased resilience, and
- pledge partners to support the development and testing of selected scalable innovations.

2. What is resilience, and what is the role of innovation in building resilience?

WFP sees resilience-building as strengthening the set of capacities required before, during, and after the onset of shocks and stressors to:

- ***absorb:*** resist a shock or the eroding effects of a stressor by reducing risk and buffering its impact, which leads to endurance and continuity of livelihoods and systems;
- ***adapt:*** respond to change by making proactive and informed choices, leading to incremental improvements in managing risks; and
- ***transform:*** change the set of available choices through empowerment, improved governance and an enabling environment, leading to positive changes in systems, structures and livelihoods.

Disasters, shocks and chronic stresses are becoming more frequent and lasting longer. We are only beginning to understand the interconnected nature of slow onset stresses to these frequent shocks. As the world population increases, more people are suffering the devastating consequences of climate change, with the poorest often on the front lines. The number of disasters has nearly tripled since the

1980s, and their cost has followed the same trend, increasing 300 percent to reach an average of $200 billion per year[1]. This has resulted in a cycle of human suffering — loss of life, livelihoods and aspirations. However, within this world of uncertainty and surprise, innovation is also developing at an unprecedented pace. Breakthrough innovations, many involving technology, emerge daily, offering opportunities to ease the lives of the people and opening a whole new range of possibilities from medicine to the military sphere, from entertainment to robotics.

Is there a way to bridge this gap and expand the benefits of modernity to the less fortunate? How can disruptive innovation be a solution? Shocks like droughts, typhoons, or food price spikes are not always preventable, but the degree of destruction and devastation can be reduced and managed. Innovation, often in the technological sphere, is necessary to **enhance sustainable development outcomes and build long-term resilience**.

Innovation and technology brings significant potential to facilitate community-level knowledge and health, connection, organization, economic opportunities, access to infrastructure and services, and management of natural resources— many of the characteristics that make communities resilient[2]. For example, in the past six to seven years, smart phones and social media have already helped redesign emergency preparedness and response operations by facilitating community participation, spreading lifesaving messages and expediting service delivery even where power, connectivity, infrastructure and local training are lacking or limited. Each of these services simplifies important actions, and collectively, they can help people in vulnerable situations around the world to build stronger, safer and more resilient communities.

3. The SDGs and partnerships for resilience

Resilience is more than an aspiration. It is a **"partnership imperative,"** as resilience building initiatives significantly benefit from cross-sectoral partnerships and integrated approaches that address, in the long-term, the root causes of vulnerability, food insecurity and undernutrition. Working together in multi-stakeholder partnerships will accelerate the global efforts to achieve the ambitious goals of Agenda 2030, finding solutions that will be sustainable in the uncertain, complex and increasingly interconnected future.

Indeed, public-private partnerships play a vital role in building resilience. Critical insights from the private sector help make a business case for resilience investments and enable innovations to overcome funding and sustainability barriers. In this perspective, while there is no single Sustainable Development Goal dedicated to resilience, SDG 17 on partnerships highlights that **collective action and partnerships among communities, governments, external agencies, research institutions, civil society organisations and the private sector are necessary to achieve resilient outcomes in the wider range of goals.**

Following the binding thread that Agenda 2030 provides, **partnerships for resilience provide a unique opportunity to overcome the divisions between development and humanitarian action**, static and dynamic processes, economic, social or environment focus, and to 'federate' the priorities of individuals, households, communities, and of governments.

[1] Luca Alinovi. "Money matters: will global aid spending ever be enough?". Global Resilience Partnership. Accessible at: http://www.globalresiliencepartnership.org/news/2016/07/28/money-matters/

[2] Characteristics of a Safe and Resilient Community. International Federation of the Red Cross and Red Crescent Societies. Available at: http://www.ifrc.org/PageFiles/96986/Final_Characteristics_Report.pdf

The key requirement to create these types of partnerships is to tackle our fear of failure and risk. We are already **well equipped with innovations that contribute to resilience building**, but unfortunately, these efforts are often limited in scale and not easily adapted, replicated or scaled-up. However, risk is a key component in innovation. Hence finding innovative solutions that are sustainable and implementable in the humanitarian and development spheres requires projects that embrace new ways of thinking and take risks without being afraid of failure.

Problem-solving and innovation development are essential components of the grassroots action that is needed at the heart of the Localization Agenda and to make wide-spread progress toward the SDGs and related global goals. Specific innovations for resilience can provide new opportunities to people and communities to overcome constraints and advance local progress on safety and resilience. At the same time, design thinking and other approaches to innovation can be powerful tools for people and communities to address their own priority risks and needs. Supporting and enabling this type of innovation for resilience in communities around the world will require new approaches for collaboration and new strategies for using our collective networks to maximum effect. To this purpose, **each sector will need to devote its specialized expertise as well as resources of time, funding, and unique products and services.** We also will need to **coordinate our work, identify additional collaborators and leverage each other's strengths to maximise the potential for collective action.**

4. Key Lessons Learned

4.1. Global need for enhanced innovation and increased investment

Innovation and technology are keys to achieving Agenda 2030, **but access to it or widespread adaptation is not keeping pace with global needs**. Innovative practices must be transformational, and this requires exponential improvements. The public sector must become quicker and more agile, and must create a pro-innovation regulatory environment. For example, mobile money is not yet widely available in large part of the world due to regulatory barriers.

The humanitarian and development sectors must create incentives for, and learn from, the private sector to develop business cases for resilience investments. For example, mobile technology has enabled people across Sub-Saharan Africa to become credit-worthy, and index-based livestock insurance in Kenya has spurred innovation, predicated on improved technology, with insurance contracted through the global market.

4.2. The solution

Scaling up collective action and supporting innovation for resilience are key to addressing the root causes of vulnerability. To this aim, the Convening welcomed **ten resilience-building** projects from entrepreneurs. These innovative ideas were selected for their potential to be developed into scalable solutions **to achieve sustainable resilience-building at a larger scale**. The Convening also drew upon the vast experience and deep knowledge of the participants to help better understand how to transform local solutions and to strengthen the resilience of individuals, households, communities and systems through innovation. The Convening took stock of **successful resilience tools and innovations**, created a **network for continued dialogue on innovation** towards increased resilience and encouraged **partners to pledge to support the development and testing of selected scalable innovations** (See section 5).

Looking ahead, WFP will continue to explore themes in support of resilience through the following projects and ongoing partnerships:

- **GSMA's new Mobile for Humanitarian** Innovation (M4H) programme works to accelerate the delivery and impact of digital humanitarian assistance. This will be achieved by building a learning and research agenda to inform the future of digital humanitarian response, catalysing partnerships and innovation for new digital humanitarian services, advocating for enabling policy environments, monitoring and evaluating performance, disseminating insights and profiling achievements. Mobile for Humanitarian Innovation marks an evolution and expansion of the GSMA's disaster response work.
- The **Airbus Foundation** expressed interest to have more use cases where their staff can work and be (1) deployed to emergencies, and (2) work on joint technology development/engineering project innovation.
- **Telefonica Foundation** expressed interest to find innovations that would be applied to Colombia, Ecuador, Peru, and Guatemala (Movistar priority countries).
- **USAID and Tableau Foundation** will explore expanding ongoing projects in countries where big data could be leveraged to support USAID's resilience strategy.
- The **Gates and Rockefeller Foundations** are exploring the application of digitalization in the Agriculture Development sector.

4.3. New approaches to partnerships and financing

Resilience requires a **holistic approach** to innovation, including gender, equity and access, scaling, livelihoods and market integration, capacity & governance, and technological solutions.

Different types of partnerships are key. Successful partnerships bring together multiple stakeholders with diverse competencies, and innovation allows them to iterate very quickly. To reduce the most frequent obstacles, resilience champions should adopt a 5-10 year horizon to build resilience approaches that show the business value of collective action, and all stakeholders should strive to **lower the transaction cost of building partnerships**.

"Challenge funds" can spur new ideas and innovation, especially when support is provided to refine the designs and business plans for innovations after an initial period of prototyping. Similarly, **individuals and communities benefit from better access to risk mitigation instruments** that encourage and enable them to build preparedness and resilience through co-investment and risk sharing.

Beyond funding, expertise, and technology, resilience requires **thought leadership** to shape policy and design for future resilience strategies.

4.4. Learning Cafe takeaways

As part of the Learning Café activity (Day 2) all participants broke down into four groups to identify next steps needed for innovations to contribute to resilience building. Conclusions from the Learning Café groups and reflections from the panel on the results of the group activity are presented below.

1. **What makes a resilience innovation an innovation—and not just good development programming—and what are the challenges with an innovation remaining innovative?**

   An innovation should serve as a **scalable platform** from which to build further, and should be intended as **a tool, not as the final objective**. To remain innovative, innovations need to support

an exponential curve of growth and impact, addressing multiple problems and **challenging unsustainable cultures and peoples' own self-perceptions**.

The development and humanitarian world needs more disruptive change, but it must adopt a different mind-set that allows **more room for failure**. Development, informed by evidence and proven theories of change, typically achieves continuous, gradual improvement, while **innovation can achieve step changes in progress**. Development projects should be encouraged to embrace risk, 'fail fast or fail smart', and learn from these challenges to drive the next step.

2. What assumptions have been considered while implementing the innovations that were showcased and reviewed during the event?

Assumptions play a key role in innovation, either as drivers for acceptance and dynamic growth or as constraints and limiting factors. By making assumptions explicit, we can address them more directly in the design process and ensure alignment in the assumptions of end users, service providers, and designers.

User engagement: **Inclusive approaches to design (e.g. co-creation)** that engage the full range of users and recognize the differences they may have in interests, culture, and needs can ensure that assumptions and motivations are aligned in a way that accelerates the adaptation and impact of the innovation.

Cost and replication: The transition of innovations to sustainable or profitable business models was highlighted as a common challenge. While pilot versions are crucial to prototyping and field-testing, there is often a **tendency to over-invest in pilots**, rendering them less useful as models for wider scaling and hindering their ability to fail fast and fail smart, as large projects often do not encourage failure. Recommendations to address this barrier included **building on existing solutions that already have some acceptance** and 'market-share', seeking **greater time-flexibility in donor funding**, exploring the combination of free and premium services increasingly used in the private sector and keeping pilots small and encouraging them to take risks within controlled limits.

Intermediation: Stakeholder engagement during the innovation process is often just as important as the mechanics of the innovation. In community resilience projects, community users and local partners are critical players as **local context experts** and **ambassadors for the innovation**. Successful growth of innovations often requires partners who are well-positioned (either in terms of proximity or relevant expertise) to serve as **trainers and mentors**, especially to help the rollout and ongoing adaptation of innovations. Digital solutions may be able to provide this mentoring remotely.

While successful innovations often highlight iteration, refinement, and evolution over time, **spontaneous pick-up and replication of innovations is also a significant channel for scaling**. The opportunity for resilience actors in other locations to adapt and apply an innovation can multiply impact and help move innovations from linear to exponential scale. Using an open source approach to share innovations can facilitate this wider scaling.

Multi-stakeholder collaboration: The organisations participating in the Convening are often competitors, collaborators, and clients of one another. **More fluidly traversing these roles to maximise collective action will challenge traditional assumptions** and require new models and mutual incentives for collaboration.

3. What do we understand to be the barriers for scaling up resilience innovations?

Approach to designing and planning the scale-up - A clear definition of the problem to be solved is key. Lack of upfront planning and identification of market opportunities, as well as ineffective business models and lack of comprehensive business plans and exit strategies are also common

barriers. Organisations may lack internal motivation to pursue scaling of resilience innovations, and there is often resistance to change. More broadly, a collective approach is often lacking when pursuing the scaling up of resilience innovations.

Insufficient time and resources - Innovation requires time to design, co-create, iterate, and adjust, yet there is often limited time for people to invest in resilience. Funding and funding cycles often present a barrier due to restrictions on adaptive project implementation, and there is generally no capacity for alternative finance mechanisms. Even when sufficient time and motivation are in place, inadequate capacity to implement a resilience innovation can be an obstacle. Scaling up requires a combination of rethinking skills, the right support and feedback.

4. What are the long-term strategies to make resilience innovations self-sustaining?

Thorough planning and clear strategy must be established from the outset, though adaptability is also critical. Monetization and collective action are important focus points: innovators should think beyond merely profit to mutual benefits with potential partners and identify ways to leverage comparative advantages. A strong social and business case, with an exit strategy and sustainable model, must be communicated to governments and private sector for their buy-in. The ability to "know when to let go"—to identify when a different actor should nurture the idea—and where to outsource, are critical.

5. Highlighted innovations

GLOBAL RESILIENCE PARTNERSHIP

BANGLADESH and ETHIOPIA | Roads to the Rescue

Problem

Nearly 20% of the global land surface is within one kilometer of a road. From 2010 to 2050, nearly 25 million paved road lane-kilometers and 335,000 rail track kilometers will be added, costing $45 Trillion USD. Roads are key conduits to promote social cohesion and connectivity and are critical to meeting the challenge of the SDGs in trade, education, health and jobs.

Apart from this prime transport function, roads have a major impact on landscapes and surface hydrology. Road infrastructure acts as drains or embankments. The effect of this now is often negative: road bodies cause erosion, trigger sedimentation and cause local flooding. Yet this can be turned around and roads can become instruments of climate resilience.

Innovative Solution

MetaMeta supports the systematic use of roads for flood resilience and water management and is beginning to upscale this opportunity for wider use in the coastal regions of Bangladesh and the highlands of Ethiopia. This project is finding way to make use of roads as flood shelters, improved road surface to strengthen embankments, regulate water levels for production (Bangladesh) or harvest and stock water for dry periods and increase groundwater levels (Ethiopia). This is done by documenting innovative solutions and bringing together government authorities, water and climate experts, and roadside communities – including women and the poor. The aims is to go for triple wins: less damage to the areas around the road, less damage to the road bodies and importantly more productive livelihoods, by making beneficial use of the road water in spite of recurring flooding and high water conditions.

Flood shelters in Bangladesh

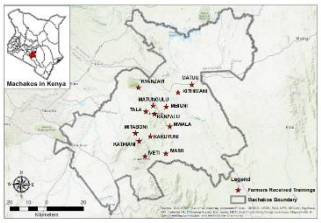
Vision

MetaMeta strives to introduce the systematic use of roads for beneficial water management and climate resilience in 50% of the countries in Sub Saharan Africa and 25% of the countries in Asia and achieve inclusive win-wins. We believe that making use of the massive investments in road infrastructure in the next ten years an enormous benefit in improved climate resilience and water security can be achieved and that not less than 300 million people can be reached. The on-going programs are already showing these impacts at scale.

HORN OF AFRICA | Satellite Technologies, Innovative and Smart Financing for Food Security (SATISFy)

Problem

Weather related shocks are one of the major barriers to productive and sustainable agricultural production in the Horn of Africa. Such severe shocks cannot be financed by the government and donor community alone. On the other hand, lack of capital and perceived risks limit farmers' ability to purchase agricultural inputs and access credit, contributing to low agricultural productivity. And yet banks are still resistant to providing loans to the agricultural sector.



Innovative Solution

We developed a market-based innovative risk management solution in the form of Risk-Contingent Credit (RCC), a social safety net that mitigates drought risks for the rural poor and improves farm productivity and livelihoods. RCC is a linked financial product that embeds within its structure insurance protection which, when triggered, offsets loan payments due to the lender. RCC seeks to address the challenge that lenders are reluctant to lend to farmers because of the financial risks associated with crop failure or radical decreases in market prices. Because RCC targets downside business risk, it simultaneously reduces financial risk and exposure. This risk balancing effect encourages increased supply of and access to credit but also encourages risk-rationed farmers to increase the use of credit. Vegetation health and soil moisture from satellites are used to monitor the impact of drought on the ground.

Vision

We are currently piloting RCC in Machakos County in Kenya. It has high potential for scaling up to other regions of Kenya and other countries such as Tanzania, Malawi, Ethiopia, Mali, and Ghana in Sub-Sahara Africa. We would like to add further innovations enhancing uptake of RCC, reducing basis risk by using latest operational satellite dataset on soil moisture and reducing transaction cost of RCC delivery by using mobile-based technology for information dissemination and banking. Along with local partners, we would also like to include financial education and extension with farmers. RCC structures provides the proper incentives not only to entice banks to increase the supply of credit but also to attract farmers to the credit market. We understand that the long-run commercial sustainability will depend on effective assessment of social and economic benefits of RCC. Thus, we would set up a sound experimental design to capture the cost and benefit of RCC.

INTERNATIONAL FEDERATION OF RED CROSS AND RED CRESCENT SOCIETIES

NEW ZEALAND | Business Preparedness Initiative (BPI)

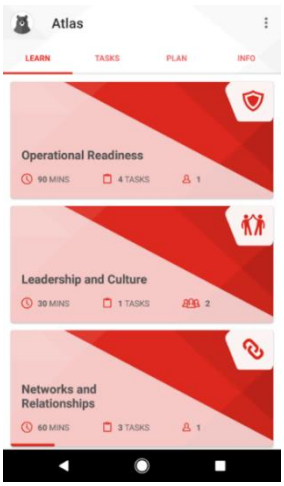
Problem

Small businesses play a critical role in communities and ultimately in global markets as well, contributing to employment at home and supply chains around the world. They are instrumental in restoring economic activity at a community level in the wake of disasters. While many small businesses are intuitively aware of the importance of being prepared, studies have shown a majority do not actively plan ahead. This is due to a high financial cost and lack of actionable guidance and can often cause hardships not only for the business, but also the surrounding community.

Innovative Solution

Over the last 2 years, the International Federation of Red Cross and Red Crescent Societies' Global Disaster Preparedness Center has developed and launched the Business Preparedness Initiative which aims to protect livelihoods and promote more comprehensive community resilience. It does so by providing easy-to-use, adaptable and scalable tools for small business preparedness.

One core component of the Business Preparedness Initiative is an engaging mobile application, *Atlas: Ready for Business* (download at www.preparecenter.org/atlasapp). Utilizing this free tool, business owners or managers learn to improve their preparedness at their own pace. They are guided to examine operational readiness, networks and relationships, leadership and culture, change readiness, and their ability to assist their people at work. They are tested with real-world disaster scenarios with increasing challenging levels and complete tasks alone or alongside their employees. Based on progress and inputs, *Atlas* skilfully auto-generates a shareable 'Crisis and Recovery Plan' which can be used not only during disasters, but also to exercise readiness and educate staff. The mobile application utilizes interactive features, including a human-like chat that messages with the user to gain insights to guide them on their unique journey towards resilience. This journey is enabled through *Atlas's* flexible content management system which can show the user location-specific content, facilitate translation into unlimited languages, and include sector-specific content to better assist businesses.



Vision

The *Atlas: Ready for Business* mobile application is anticipated to generate data which will be used as feedback to improve user experience and refine features and content. While all user data will be anonymous and encrypted, using analytics, content managers will be able to gauge user behaviour and progression, as well as to know how non-personally identifying questions posed by *Atlas* are being answered. For example, the number of businesses who started using *Atlas* without having an existing business continuity plan, what the highest disaster risk is determined by users, as well as how many businesses have identified alternate suppliers, if needed. This data can be analysed further for geographic location and type of business – which can drive future content creation for specific at-risk areas as well as help support an improved business case for this community resilience intervention.

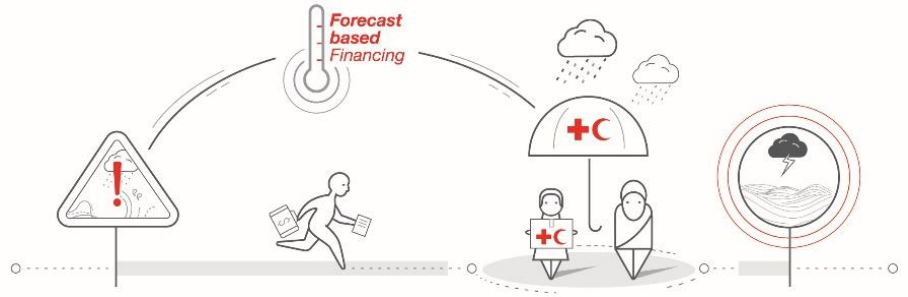
VARIOUS COUNTRIES | Forecast-based Financing (FbF)

Problem

Humanitarian finance to alleviate human suffering is predominantly available after a disaster strikes. However, climate-related risks are rising worldwide, and just waiting for disasters to happen is not an option. Many humanitarian actions could be implemented in the window between a forecast and a disaster.

Innovative Solution

Forecast-based Financing (FbF) is a programme that enables access to humanitarian funding for early action based on in-depth forecast information and risk analysis. The goal of FbF is to anticipate disasters, prevent their impact, if possible, and reduce human suffering and losses.

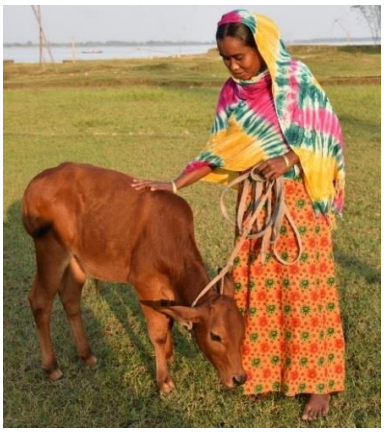


A key element of FbF is that the allocation of financial resources is agreed in advance, together with the specific forecast threshold that triggers the release of those resources for the implementation of early actions. The roles and responsibilities of everyone involved in implementing these actions are defined in the Early Action Protocol (EAP). This ensures the full commitment of implementation among the involved stakeholders.

In collaboration with a growing number of other partners, a total of 16 Red Cross Red Crescent (RCRC) National Societies (NS) in Africa, the Americas and Asia-Pacific are currently implementing FbF pilot projects in various stages. With the FbF methodology, forecasts have successfully triggered early action by NS in Peru, Togo, Uganda, Bangladesh and Mongolia.

Vision

Given the innovative potential of FbF and the necessary funding for the increasing number of FbF projects, a dedicated, scalable financing mechanism is required. This ensures that donor funds are used efficiently and that vulnerable communities and NS have access to immediate, reliable and sustainable funding.



The mechanism **serves NS and focuses on the funding of EAP implementation and maintenance**. The mechanism concentrates on EAPs for hazards that can be scientifically forecast based on hydrometeorological risk data and observations. The acceptance of EAPs by the fund solely depends on their quality, which is based on transparent eligibility criteria. The fund uses a trigger-based, decision- making process. Once an EAP has been accepted, the funding of early action is guaranteed, as well as the maintenance of the EAP itself during its lifecycle. The NS in the pilot countries are supported with technical assistance, equipment and capacity building by the German Red Cross, RCRC Climate Centre and IFRC to independently develop, implement and assess EAPs and access the fund.

The IFRC committed to **expand its engagement** in FbF in the framework of the **World Humanitarian Summit in 2016** by pledging to increase use of FbF and its integration in the financing of global disaster risk management. The IFRC will work to **strengthen the operationalisation of anticipatory humanitarian assistance** by refining the approach through the design and implementation of pilot projects and engaging new FbF partners.

For more information, visit: www.forecast-based-financing.org.

UNITED NATIONS DEVELOPMENT PROGRAMME

MALDIVES | Drones for improved disaster preparation and response

Problem

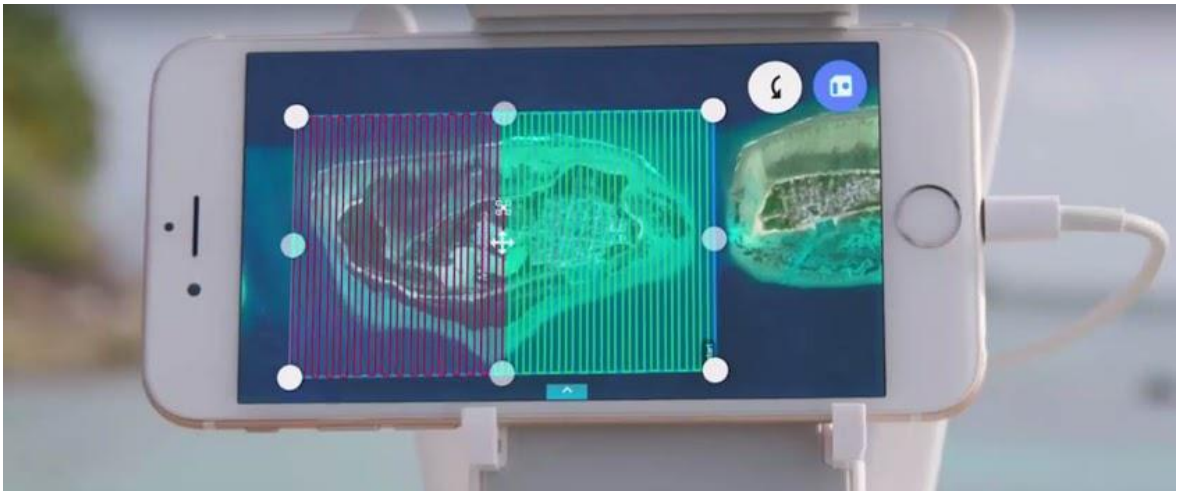
The Maldives is a country highly vulnerable to risks from climate change – 80% of its 160+ inhabited islands are just one meter above sea level. Flooding due to rising sea levels threatens the livelihoods of almost all 409,000 Maldivians. Creating risk maps of these islands is a big challenge, as it usually takes about a year to map 11 islands. Risk maps are an important source of data, as they can help identify changes to physical vulnerability and provide vital evidence for planning, mitigation, response and recovery initiatives.

Innovative Solution

UNDP Maldives collaborated with leading drone company DJI, robotics solutions provider WeRobotics, and nearly two dozen Maldivian government, private sector, and nongovernmental organizations to leverage aerial robotics technology for improved environmental management and enhanced resilience to natural disasters. The Government of Maldives and island communities have engaged in the use of drones in their disaster preparedness and response operations.

Vision

Local emergency officials will receive training from professional first responders on how to use the drones. Information captured by drones will help the Maldives prepare for extreme weather intensified by ongoing shifts in climate, and locals will be able to create their own maps and compare images over time to better understand how their local environment is changing.



NEPAL | Community rebuilding app

Problem

Nepalese homes and economies are at immense risk to earthquakes, such as the massive 7.8 magnitude earthquake that struck in 2015. The challenge of preparing for such a devastating earthquake, and rebuilding in the aftermath of the earthquake, is significant.

Innovative Solution

UNDP partnered with Microsoft to develop a smartphone application that monitors reconstruction efforts in real time, and ensures that poor families in the cash-for-work program are paid accurately and on time. The app—the first of its kind in the world—enabled better handling of large-scale crisis-response; it could manage the entire project, recording workers' attendance, preparing their payrolls, measuring GPS locations of quake-damaged houses to calculating the costs of clearing debris. This information improved efforts to demolish and remove debris from over 3,000 houses employed over 3,500 local people and benefited some 17,000-community members.

Vision

While UNDP and Microsoft are working with the Nepalese Government on further institutionalizing the system and roll it out to ensure improved preparedness for future disasters, UNDP and partners are scoping opportunities to adapt the system to other country contexts.

SOMALIA | Innovate for Somalia: a series of innovation camps

Problem

Somalia faces a variety of development challenges.

Innovative Solution

UNDP's "Innovate for Somalia" initiative works with local partners to empower young men and women to design solutions to development challenges. Specifically, Innovate for Somalia empowers youth through social innovation camps and business development support, creating an economy of home-grown solutions. The camps leverage Design Thinking to address real human needs by engaging end-users in the design process from start to finish. During each camp, aspiring young entrepreneurs develop initial ideas for for-profit or not-for-profit enterprises to solve development challenges in Somalia. Teams that successfully progress during the camp proceed to an incubation process and receive support—both technical and business development—to transform their ideas into marketable products.

Vision

The overall outcome of the innovation camps is economic development through the creation of business opportunities and employment. Successful participants in Innovate for Somalia that continue to grow are:

- **Daaq.som**: Hydroponics system, requiring no soil and minimal water, to grow fodder and install similar hydroponic systems for small-scale farmers.
- **Dhil.so:** Milk logistics company transports milk directly from farm to market using solar-powered refrigerators in trucks.
- **Mama Milk:** The first tetra packaged fresh cow/camel milk in Somalia.
- **Daryeel Livestock Clinic:** A mobile livestock clinic using motorbikes to reach and treat diseased animals. Utilizes an SMS reminder and automated scheduling system.
- **Ciir Dairy Factory:** A yogurt production company.
- **Som Dairy Can:** A portable solar-powered milk cooler and storage.
- **Alaf:** Produces fodder through a hydroponics system.
- **SomCheese:** The first organic cheese production company in Somalia.

WORLD FOOD PROGRAMME

ALGERIA | Hydro Sahrawi

Problem

Lack of access to food for Sahrawi refugees in Algeria is a significant problem. The semi-nomadic Sahrawi refugees greatly value livestock for milk and meat. Yet due to the Algerian desert's arid climate, agriculture is extremely poor: the animals are mostly fed with food scraps, leftovers, and, often, only plastic or cartons. The poor feeding practices have significant consequences for the animals' health, impacting milk and meat production, which consequently impacts the food and nutrition of the refugees.

Innovative Solution

WFP Algeria is using low-tech hydroponic units to support the daily local production of green animal fodder. In only 7 days, fresh green barley fodder can be produced from seeds, using minimal quantities of water and no fertilizer. The low-tech, self-sustainable method of hydroponics permits a scalable solution that may be replicated in numerous communities: considering the extreme isolation, temperatures and winds of this context, a solution that works in the Algerian likely work anywhere. Improving milk and meat intake through owning healthy livestock has a direct impact on household's food security and nutrition. The approach also corresponds to semi-nomadic refugees' culture and dietary preference. WFP tested and adapted a high-tech hydroponic technique to the local context, reducing costs by 90% while keeping productivity at 60%. Within 1 year, three low-tech local solutions have been developed:

- **Unit in green house**: Fabric sheeting cover and automatized irrigation system produces 60 kg of fodder per day.
- **Unit in dome:** Mud brick constructions and automatized irrigation system permit better temperature control for summer.
- **Family kit:** Smaller, moveable unit with manual irrigation that produces 20 kg of fodder per day—enough to feed a family.

In total, **50 units** exist in all five Sahrawi camps, reaching **500 refugees**, particularly women.

Vision

By the end of 2020, the Sahraoui refugees living in Algeria have access to diversified food basket, this include milk and meat through the fodder production as well as vegetables through the development of hydroponics for human crops.

ZAMBIA | Maano Virtual Farmers Market

The Idea

Maano aims to connect millions of rural smallholder farmers with new buyers of their produce by:

- Making information on farmers' supply and buyers' demand, identity and location visible to everyone through a smartphone application;
- Facilitating farmer-buyer discussions and price negotiation;
- Facilitating the sale of farmers' produce through an escrow payment system where WFP acts as the guarantor between farmers and buyers.

Maano is essentially a combination of stripped down features of Ebay, Uber and WhatsApp adapted to the needs of rural Zambia farmers and buyers of their produce. In doing so, Maano makes rural smallholder farmers visible to new buyers, and reduces transaction costs for both buyers and farmers, thereby increasing the profitability and scale of trade for both sides.

Achievements to Date

During its first season, 50 Maano ambassador farmers, most of whom had never touched a smartphone before, successfully sold 150 metric tons of their produce in 103 transactions for a total value of more than US$50,000 on behalf of a reported 1,200 'follower farmers' in their communities.

Vision

The last decade has seen almost every sector of rich world economies transformed by the latest digital and financial technologies, enabling people to do old things in new ways with greater efficiency. A similar revolution of digital and financial technologies is about to begin in African agriculture. That it will occur is not in question. What we need to ask is "How quickly?", and "Who will it benefit most?" If the world is to achieve Zero Hunger by 2030, we must answer "As soon as possible" and "To benefit those furthest behind first."

For Maano these two questions are inextricably linked: Maano is starting with the most rural smallholders that mobile network coverage will permit. In doing so, these farmers will have an 'early-adopter' economic advantage over other bigger supply chain actors. Currently, levels of smart phone usage for business activities is limited to a minority of traders. Maano places rural smallholders ahead of the fin-tech curve. By linking these rural smallholder farmers to national and international supply chains, they will be the first to benefit from this innovation. If Maano can successfully link the rural smallholders furthest behind, then all between them and urban markets, can also easily join and benefit from the system.

At scale, Maano is a sustainable business model that benefits the furthest behind first and will make a significant contribution to each of the Zero Hunger Challenge's five objectives.

CAMBODIA | Platforms for Real-time Information Systems (PRISM)

Problem

2 million people in Cambodia live on less than $1 a day, with the risk of shocks threatening development gains. Decision-makers are unable to adequately address this challenge due to siloed data, paper-based processes, and a lack of platforms for intuitive decision-making to mobilize resources. Additionally, household services provided are often fragmented due to lack of coordination between government, NGOs, and other stakeholders.

2 million people live on less than $1 a day

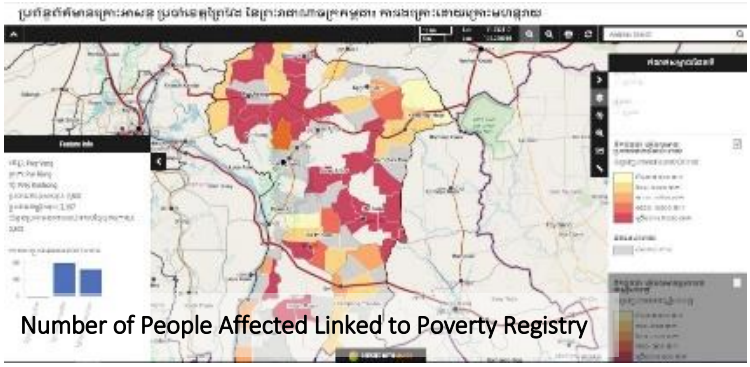
Innovative Solution

PRISM is a government decision-making platform that visualizes data for action by linking information across ministries and various sources (UN/NGOs, weather forecasts and household poverty registries), allowing decision-makers to address needs and provide targeted responses. PRISM is an adaptable and flexible end-to-end suite of tools, with varied applications across sectors, drawing from pre-established local structures to leverage data for action. Examples of supported initiatives include:

- National Committee for Disaster Management (NCDM)-WFP agreement: Strengthens capacity at national and sub-national levels for decentralized analysis and reporting for emergency preparedness and response. Operating in 11 provinces, WFP has trained 410 government officials at national and subnational levels, established nine Emergency Communication and Information Rooms to cover 7.2 million people, and added household data from the national poverty registry for targeting.
- Pilot interactive map: links weather forecasting from telecommunication companies and the Pacific Disaster Center, and Early Warning System data from People in Need.
- Ministry of Education's Effective Schools Standards (ESS): ESS provides indicators that monitor enrolment, performance, parental and community engagement, student services, teacher student ratios, learning materials, school administration and environment. PRISM has Provincial level presence in Prey Veng, with all district officials and nine schools trained.
- WFP Programme Map: The WFP Programme Map is a monitoring tool that displays programme information at school level, such as food stocks, cash/food scholarships, and school infrastructure projects (latrines, water tanks, etc.).

Vision

WFP will expand to 17 total provinces by the end of 2018, and strengthen coordination between the Humanitarian Response Forum (HRF) and NCDM through PRISM tools to enable coordinated responses. WFP is HRF co-chair, a sector based coordination forum made up of 35 member UN agencies, international and local NGOs



Number of People Affected Linked to Poverty Registry

WFP will also improve household targeting before weather events and disasters take place, and will develop additional visualizations for analytics (e.g. the amount of cash based on calculated need).

6. Appendix

I. List of participants

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II. List of Acronyms

BPI – Business Preparedness Initiative

EAPs – Early Action Protocols

ESS – Ministry of Education's Effective Schools Standards

FbF – Forecast-based Financing

Fintech – Financial technologies

GRC – German Red Cross

GRP – Global Resilience Partnership

GSMA – Global System for Mobile Communications Association

IFRC – International Federation of the Red Cross and Red Crescent Societies

M4H – Mobile for Humanitarian Innovation

NCDM – National Committee for Disaster Management

NS – Red Cross Red Crescent National Societies

PRISM – Platforms for Real-time Information Systems

RCC – Risk-Contingent Credit

RCRC – Red Cross and Red Crescent

SATISFy – Satellite Technologies, Innovative and Smart Financing for Food Security

SDG – Sustainable Development Goals

UNDP – United Nations Development Programme

WFP – World Food Programme

1BC – One Billion Coalition for Resilience