

Case Study: Start Fund Alert 173

TAJIKISTAN: ANTICIPATION OF FLOODING AND LANDSLIDES

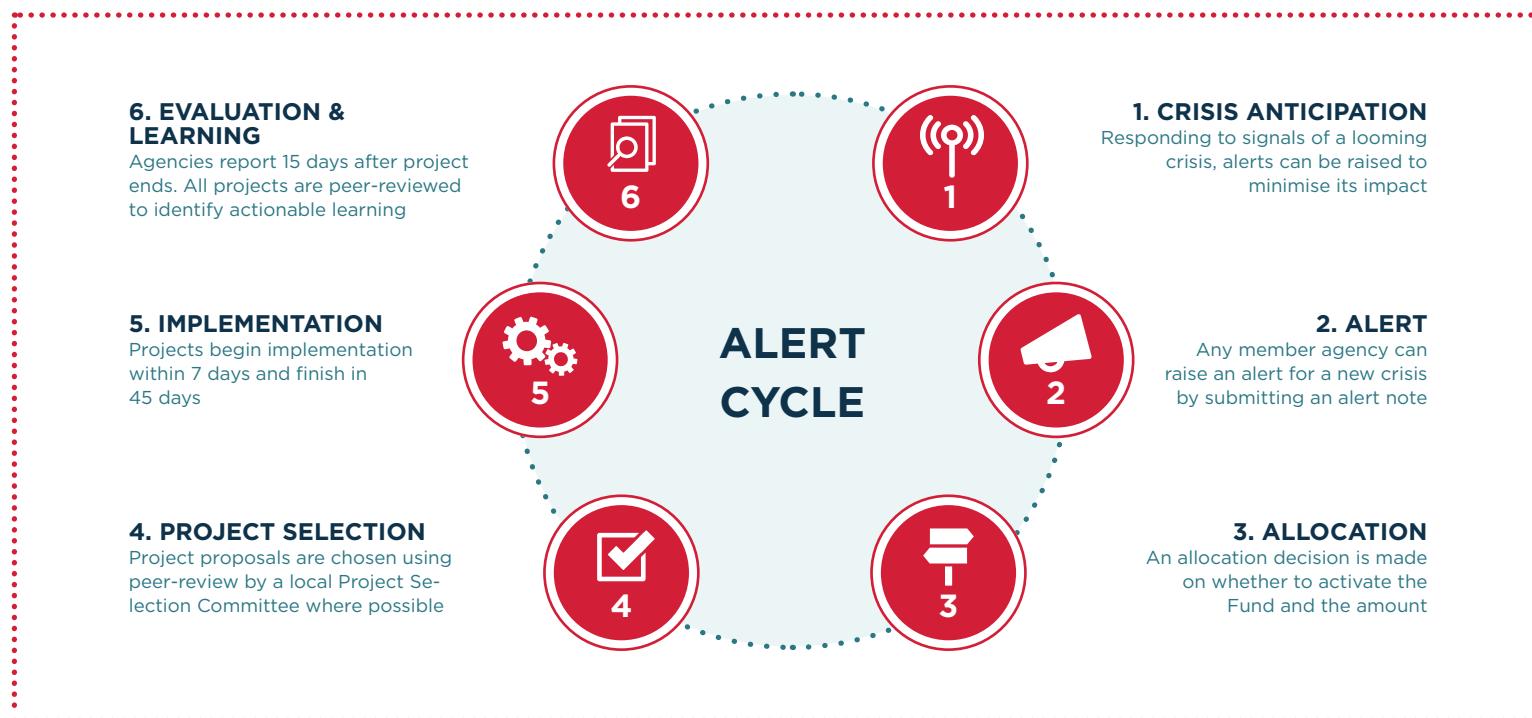


START
NETWORK

Gabion walls, constructed
through ACTED's work in the
Zeravshan Valley, Tajikistan

The anticipation alert cycle

This diagram describes the Start Fund anticipation alert cycle. This case study reviews how the process unfolded after flooding and landslides were forecast in Tajikistan in summer 2017.



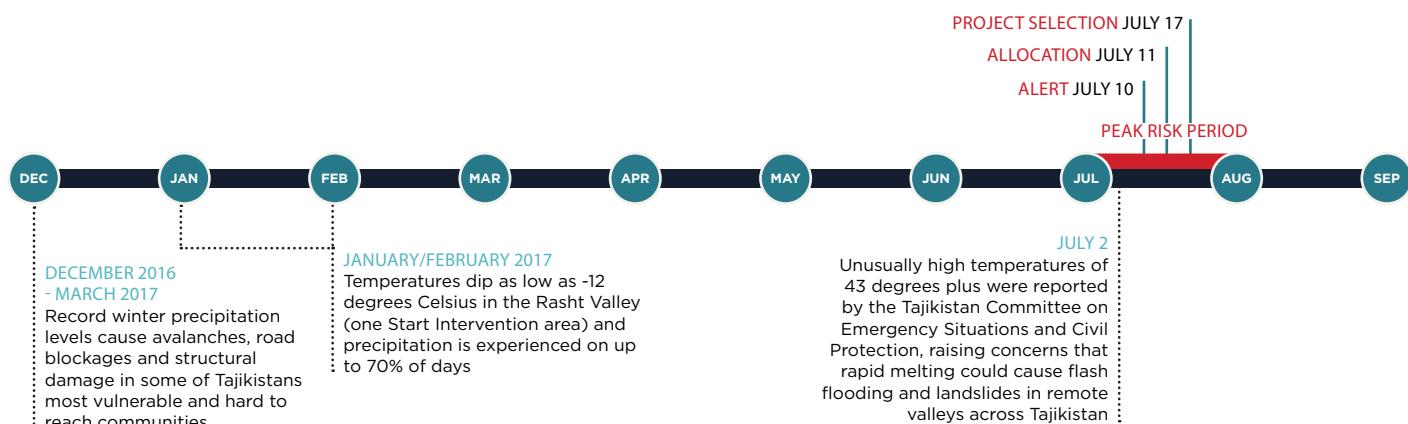
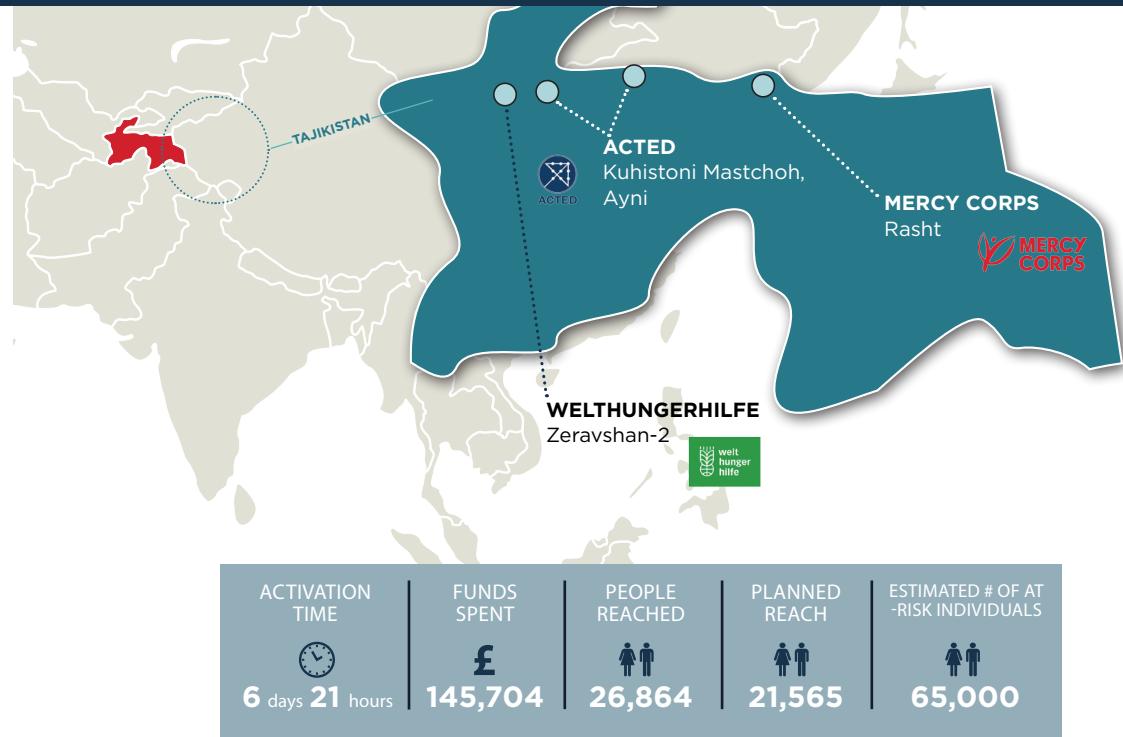
Tajikistan: July 18 - August 31 2017

Summer 2017 was blisteringly hot in the remote valleys of Tajikistan. The mercury peaked at 49 degrees centigrade¹ and in June over three quarters the days were at least 2°C degrees above the seasonal average². This followed an icy winter, with record snow levels at the peaks of mountains surrounding the Rasht and Zeravshan valleys³. For a mountainous country, where up to 90% of the population live in the lower elevations of valleys⁴, flooding and landslides are a persistent risk. The hot summer, combined with large quantities of ice in glaciers at the mountain peaks exacerbated this, tipping it out of 'normal'.

Against this back drop, Start members decided to act in anticipation of flooding and landslides, and raised an [alert on July 10th, 2017](#). This case study documents the process and identifies key learning for the Anticipation Window, using information from documents developed through the alert cycle along with data gathered during a programme visit in October 2017.



Flood mitigation installed by Welthungerhilfe to protect agricultural land and homes.



Key learning

- 1. Timing is key to enabling quality anticipation alerts. They must be triggered before a risk peaks. Questions were raised about both the 24-hour proposal development period and the 45-day implementation window, project staff reflected that extending both could enable better targeting, design and delivery. The Start Team are now trialing a seven-day window from alert to project selection for anticipation alerts, to give more time for proposal development.
- 2. The 'network effect' was not fully realized across this anticipation alert; agencies did not benefit from each other's knowledge and skills during project implementation. The three implementing agencies each took a similar approach, mixing infrastructure work to influence the course of floods with community level preparedness. However, they did not share tools or technical information. Start should consider how they can better facilitate this, especially for anticipation alerts where the Network is on a learning curve.
- 3. Implementation benefited significantly from ongoing preparedness activities including those funded through the European Civil protection and humanitarian aid disaster preparedness (DipECHO) programme and by the British and Swiss Governments. Agencies leveraged community relations, logistics and technical knowledge developed through these ongoing programmes, which contributed significantly to programme quality. Existing DipEcho work was cited as a key enabler for the Start Anticipation Alert.
- 4. The Start Team tried to access tailored forecasting data for this alert, which transpired to be prohibitively costly. Developing robust partnerships with forecasting information providers including pre-agreed 'offers' for services could make more accessible.



Raising the Alert

Mercycorps raised the anticipation alert on July 10th, suggesting £150,000 to reach between 10,000 and 30,000 individuals.

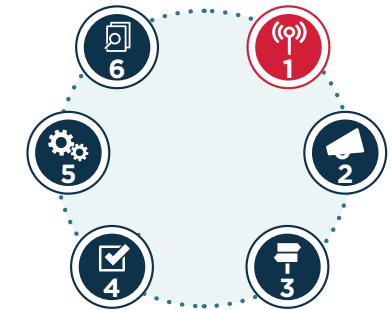
Triggering early action

The alert was triggered by exceptionally high early summer temperatures. Agencies were aware that blocked roads had already occurred and were concerned the situation would get worse. Risks due to the impact of flooding and landslides were compounded by underlying factors, including poverty levels for exposed populations and limited community resilience to damage caused by flooding and landslides.

Enablers for early action

The key enabler was the fact that implementing agencies were paying close attention to snowfall and weather forecasts before and during the alert period. While there is limited access to historical weather data in Tajikistan, agencies used the following information to create their alert note:

- Current and average snow level measurements from local meteorological stations
- Precipitation data from weatheronline.co.uk to calculate the number of days when snow had fallen
- Data from accuweather.com to show the summer temperatures and a comparison to seasonal averages
- Information from accuweather.com and verbal reports from representatives of the Committee on Emergency Situations and Civil Protection of the Republic of Tajikistan to show that landslides were already occurring when the alert was raised. One report stated that between four and five villages were affected by one individual mudslide in July.
- Additional hazard maps were provided by the EU Copernicus programme. The maps were requested by Welthungerhilfe and used during the allocation decision



This combination of local and freely available data provided decision makers with the certainty to act. The three responding agencies also benefited from their existing presence in the project areas. One of the implementing agencies had ongoing disaster risk reduction work and used hazard mapping gathered through this to target the most appropriate watersheds for infrastructure work.

A second key enabler was the pre-existing investments in preparedness. These were primarily through the [DipECHO programme](#); a European Union funded disaster risk reduction programme which has been running since 1996. Agencies particularly highlighted the community relationships they had developed through these as being key to speedy and sustainable delivery. Equally, Welthungerhilfe invested in the maintenance of an early warning system which built on this previous investment.

The final key enabler was connecting knowledge of the anticipation window to actors on the ground. Agencies found out about the anticipation window when a Start Network staff member heard a presentation on the anticipation window in an unrelated call. Knowing colleagues in Tajikistan were concerned about the escalating risk, she immediately connected them with the Start Fund. **The Start Team rely on members to share information about crisis anticipation with their colleagues to ensure it connects on the ground.**

Timing

Agencies alerted the Start Fund as soon as they learned of the Anticipation Window. Members stated that they would have raised the alert in January or February, using purely snowfall data had they known about it earlier. One community member reflected that while implementing in the peak risk season was appreciated, April or May would have been most appropriate for risk reduction work. Community members uniformly stated that April and May were the riskiest months for flooding and landslides, before the projects were implemented.

Decision making

£200,000 was allocated to the alert by the Start Fund Team, after 24 out of 25 members surveyed recommended activating the fund. Through the allocation survey, 18 out of 20 members voted in favour of activating the alert and agreed with the £150,000 allocation amount suggestion. Key reasons for activation were that the area would likely be overlooked if a significant emergency did take place, simple measures could save many lives through community preparedness and that there was potential for activities to have an impact beyond the implementation period. Agencies were recommended to implement activities which would have a strong added value even if floods or landslides did not happen that summer.

For the first time, the Start Team tried to bring in some tailor-made forecasting and risk mapping information to a live alert, to support effective targeting. This was unsuccessful due to issues both on the supply and demand side. The quotes received for the service were prohibitively high and there was a lack of clarity around how they would be funded; would they come from the £150,000 allocation, or in the form of an 'Analysis for Action' grant? The service would have cost 20% of the overall allocation. On the demand side, member representatives in country were hesitant about their ability to absorb such information within the timeframe, despite being familiar with remote sensing through other projects.

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“With the forecasting information, it was tricky. We were unsure of the timeframe and if the forecasting information could be well used. There was so little time and already a lot of dimensions to incorporate into the proposal”

- Welthungerhilfe

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FOREWARN input

Two FOREWARN members participated in the survey and were supportive of allocating funding, triangulating the information in the alert note.

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“It's highly likely that major land and mud slides will occur. This can result in major loss of life as warning is problematic. Good community and government planning, evacuation drills, emergency response capability enhanced will make all the difference in saving people lives.”

- Excerpt from FOREWARN survey inputs

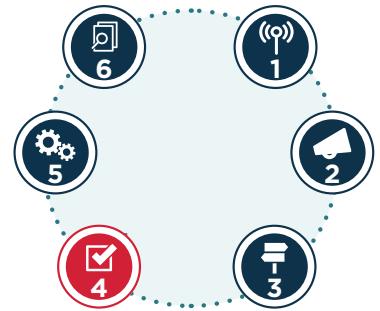
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Project Selection & Design



1. Assess endangered infrastructure and work with local authorities to protect it
 2. Community preparedness including contingency planning and distributing tools for responding to flooding
 3. Maintain and improve existing early warning system, scope options for further required ones
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1. Training community members on how to respond to emergencies, providing 'grab bags' to be used during emergency
 2. Digging channels in high risk areas
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1. Community preparedness; training on how to act in a crisis, hazard and vulnerability
 2. Structural mitigation activities; bank strengthening using gabion walls



Choosing activities

The three implementing agencies each chose a mixture of infrastructure and community preparedness. The infrastructure interventions aimed to alter the course of possible floods or landslides, while the community preparedness enabled people to evacuate and respond safely when emergencies do occur. One agency member of staff reflected that the choice of activities was to some extent dictated by the short time for project design and implementation.

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‘In the past, NGOs would just wait until things got bad. We didn't have the funds to act. Many NGOs cannot afford to do these kinds of activities. Many of us were also overwhelmed...’
– Start Member
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Good practice in focus

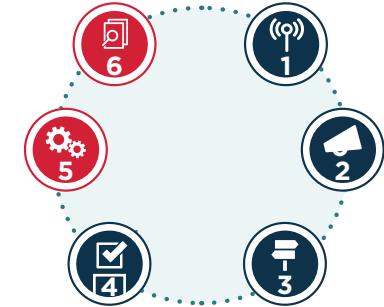
Gabion walls: In the Zerafshan Valley, ACTED installed gabion walls in five villages to alter the course of floods and landslides away from homes, agricultural land and critical infrastructure. Gabion walls consist of wire mesh, filled with large rocks which were available locally. They chose to use a new material 'rebar' which was more robust and sustainable than materials previously used for gabion walls. This generated significant interest from neighbouring villages. Labour was provided through pre-existing community structures. People who participated in the project fed back very positively and planned to build more walls of the same type with their own resources in 2018.

Project Implementation & Impact

Flooding and landslides had fortunately not taken place in the project locations when this case study was written, meaning the effectiveness of the interventions has not yet been fully tested. While the forecast was robust and landslides did occur in 2017, the project was implemented after the peak risk period had concluded. Follow-up information gathering is planned for summer 2018 after the peak risk period has ended. Through this we will learn more conclusively whether the projects achieved their intended outcomes.

Impact on communities

- ACTED invested in 1,484m of gabion wall across five villages. Gabion walls are a form of wall created using wire mesh and rocks; they are inexpensive and can be created by communities without using heavy machinery. ACTED estimate that this has protected 247 hectares of irrigated agricultural land, 593 households and two schools at a cost of £42,714. If monetized, the benefits would far outweigh initial cost, especially considering that the walls may protect the assets from multiple events. Gabion walls are relatively inexpensive and robust form of flood mitigation. Communities were involved in building the gabion walls and village representatives have scheduled further building of gabion walls for Spring 2018 without additional financial or technical assistance. These plans were developed through process of facilitating Village Disaster Preparedness Plans, which was conducted in parallel with the infrastructure work.
- Community members across the three project areas are confident about what to do when flooding or landslides happen. Members of two focus groups in the Rasht valley alongside village representatives in the Zerafshan Valley explained their flooding or landslide response plans including where to evacuate.



- Communities were provided with a range of equipment to help manage disasters. In the Rasht Valley this included 'grab bags' which contain key safety and hygiene items, and encourage community members to evacuate with their key portable assets. Around Panjikent the equipment included shovels, wheelbarrows and other tools to address flooding and landslide after they occurred.

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“We covered avalanches, firefighting, mudflow – we have a lot of mudflows – the information was on evacuation, how to react and safe places, they told us to go to higher ground”

-Focus group participant, Rasht Valley

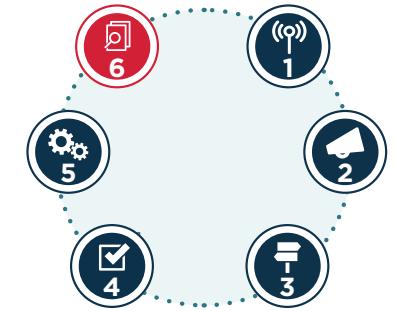
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Key learning points & consideration for future projects

For the Anticipation Window

- Both the 24-hour proposal development period and the 45-day implementation window presented significant challenges to the design and implementation of the programmes. Government approval is required for targeting in Tajikistan, which was challenging in the short proposal development period. Equally project staff reported that the pressure to deliver was intense. One agency reported using subcontractors where they would usually work through the community to complete on time. A seven-day proposal development period is currently being tested, team members will also have more specific conversations around implementation timeframes to ensure they are appropriate to the context.
- Linked to the timing, in certain areas the infrastructure works were not directly linked to the risks described in the alert note. Some locations had a general flood risk, rather than being positioned beneath glaciers where rapid snow melt was a specific concern. This was fed back to members during the programme visit. Ensuring clear links between risk information and project design should be a key concern of the project selection committee. Agencies reflected that more time for project design could have avoided these issues.
- Start members in country reflected that they would have raised the alert in February or March if they had known about the Anticipation Window. This demonstrates the ongoing advocacy required to raise awareness. Agencies involved have representation at the FOREWARN group and had received presentations at the Headquarters in London, but this had not filtered through.
- The three agencies each benefited significantly from existing programmes. The Anticipation Window seeks to build on and multiply the benefits of existing preparedness investments; the Tajikistan case shows this can work in practice.
- Innovative approaches such as the gabion walls and SMS early warning system were adopted in two of the projects but there was limited sharing of approaches between members. Further consideration is required to around how the Start Team can better support members to share their technical expertise between each other.
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For Start members anticipating flooding & landslides

- Gabion walls, using rebar metal, were chosen as a more sustainable and robust material to build structural mitigation. These have the added benefit of being replicable by communities without further input once they have learned the techniques.
- The extent of damage caused by flooding and landslides in the project areas is very significant. In certain places, the cost of structural mitigation would outweigh the benefits in terms of the value of assets protected. In this case, the emphasis on life-saving interventions including community response to emergencies and evacuations is a cost-effective measure which each agency implemented.
- Linked to the above, reliable flooding and landslide early warning systems are nascent in Tajikistan. Communities reported the most common form of early warning coming from mobile phone notifications from shepherds on high ground with their herds. Some villages appear to have a systematic approach to disseminating these messages, sometimes involving a bell or gong. There are no guarantees that a shepherd would report each event. The system Welthungerhilfe invested to maintain could provide a more effective and reliable model for early warning across Tajikistan were it to be rolled out further.
- Community engagement was recognized as critical in the three project areas, especially as risk reduction has a very strong behavioral component. In one project area, their contribution was recognized in financial terms by calculating the value of the labor provided to support with mitigation activities. This is an excellent way to recognize the value of community input to programming.

“The success and sustainability of this type of project is dependent on the depth of relationships with actors on the ground...they are a critical pre-condition”

References

1. Reported by Mercycorps in the alert note
2. [Accuweather](#)
3. Data from the District Meteorological Station, accessed by Mercycorps
4. [CIA](#)



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