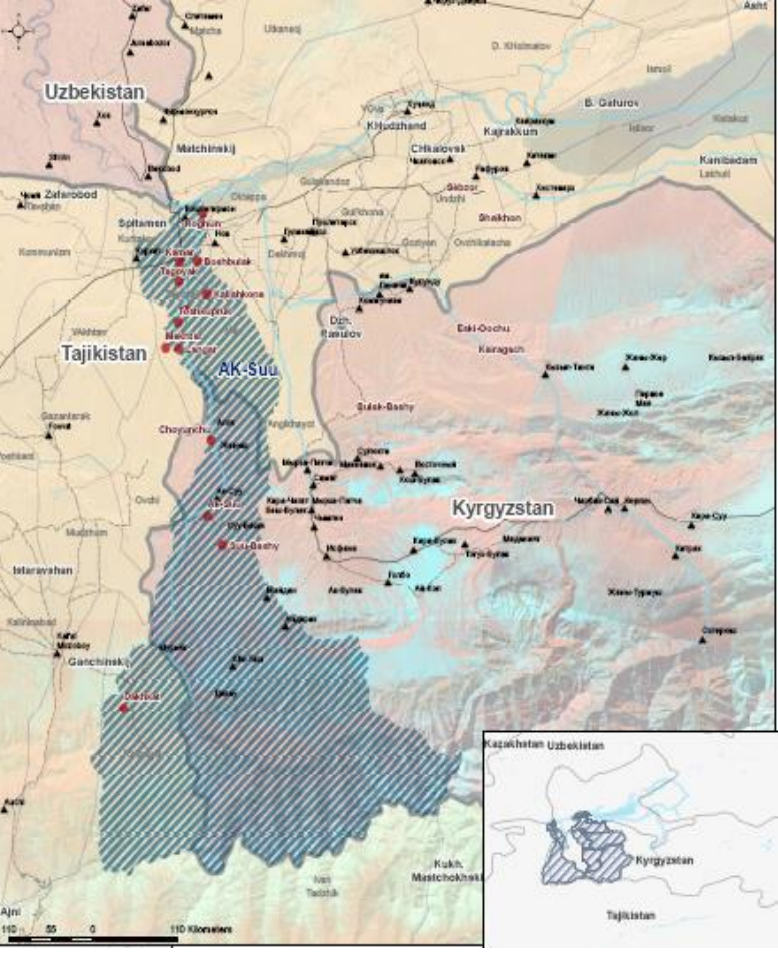


# Disaster Risk Reduction in Tajikistan

Consortium HELVETAS, ACTED, GIZ

Swiss Agency for Development and Cooperation



## General Overview

The project "National Water Resources Management" in Tajikistan, implemented by the Consortium of Helvetas, ACTED and GIZ and funded by the Swiss Agency for Development and Cooperation (SDC), has the overall goal to (i) strengthen water resource and irrigation management at river basin scale; (ii) reduce water related disaster risks; (iii) improve livelihoods and raise socio-economic indicators in selected rural areas of Syr Darya River Basin in Tajikistan. ACTED is leading the implementation of Outcome 6 related to "Addressing water-related disasters in Aksu watershed through an integrated approach to watershed management". A comprehensive assessment of the watershed resulted in the main finding, that it is crucial to slow down the erosion/degradation processes which lead to water-related disasters. To do so, a wide range of best-practices were developed, including grey and green measures.



Figure 1: Typical grey mitigation measure: stone bank reinforcement



Figure 2: Sowing of perennial grass. An example of a green measure

## Grey Measures

Given the high disaster risk it is essential to provide some relief to villages with high disaster risks. Hence, **short-term response structures**, which provide immediate assistance are used to mitigate impacts of water-related disasters, such as mudflows. Therefore ten mitigation sites, using local material and workforce, as shown in figure 1, were installed in six villages with high disaster risk. Tackling immediate impacts is important to ensure community involvement and encourage them to replicate these activities.

## Green Measures

In order to guarantee **long-term response**, it is necessary to not only build grey structures (gabions, dams) to deal with the consequences, but to tackle the problem at its roots. In this project, that is achieved by using a variety of green measures, also called eco-based solutions, which furthermore provide economical profit to the population.

### Sustainable Pasture Management:

The amount of cattle currently held on pastures is exceeding the limit that can be tolerated by the environment by 5.3 times in Aksu watershed. Furthermore, since very few to zero water points are available for the livestock, it is usually herded over long distances to reach the closest pond. This further degrades land and accelerates erosion processes, increasing mudflow risks. In order to tackle these problems, the sowing of specific perennial grasses, together with the application of mineral fertilizers on 107 ha of demo plots and 216.5 ha of replicated plots (figure 2) and the construction of water points (figure 3) were promoted. Furthermore, pasture management plans were developed by local Pasture Committees and training sessions for the population were held. All these actions aim to be replicated by the communities on the watershed.

### Sustainable Forest Management:

In the early 90s, Tajikistan used to be covered with forest by 20%. Today it is only 3%. The reason is uncontrolled tree logging together with the energy crisis, which forces the people to increasingly rely on firewood. This deforestation weakens soil, making them easily washed away when it rains, triggering mudflows. To cope with that, forest management trainings were organized and a local tree nursery for providing locally adapted seedlings and plants was built which



## Ways of slowing down erosion / degradation processes in the Aksu watershed:

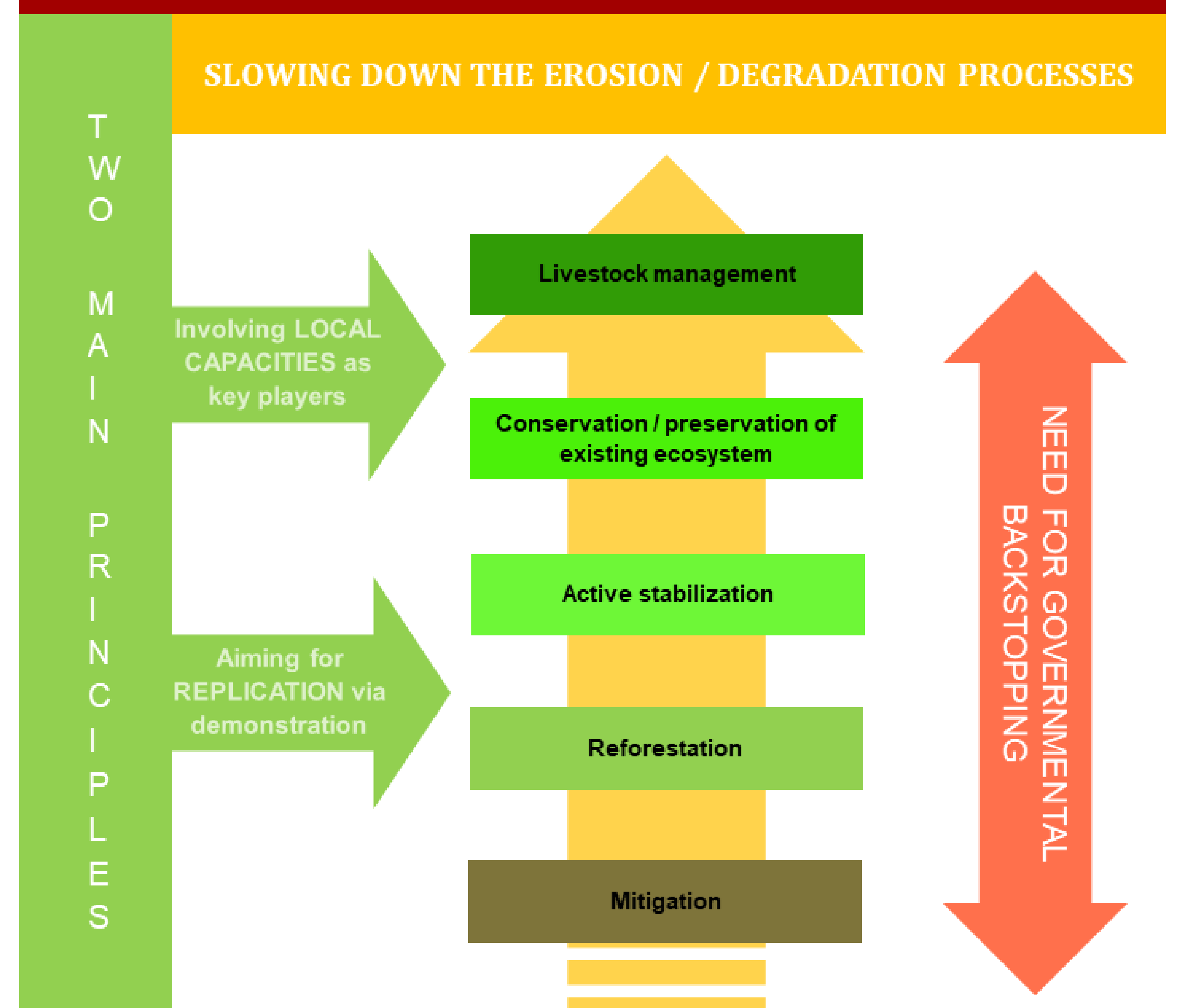


Figure 4: Best-practices to tackle degradation process in Aksu watershed

allows the reforestation area to extend. The reforestation of 112.8 ha of land will also lead to a reduction of disaster risk. 26 578 seedlings have been planted until now by local farmers as replication of reforestation activities. Additionally, 40 000 fast-growing trees have been planted in 14 villages, offering an economically and environmentally viable alternative to slow-growing trees. Counting on demonstration and replication, it is expected to multiply these numbers.

### Climate Smart Agriculture:

In the Aksu watershed, most agricultural practices were unprofitable, and even harmful for the soil, increasing communities' vulnerability. To address this issue, perennial grasses, like esparcet were sown on 97 ha of rain-fed demonstration plots, which is already replicated on 94.1 ha of rain-fed land. These species reduce surface runoff and the washing away of soil, decreasing mudflows risk while improving people's livelihood. Additionally, 287 farmers on 101 ha of irrigated land were consulted on the introduction of crop rotation and irrigation best-practices were demonstrated. These practices will eventually increase the yield of agricultural crops and improve the fertility of soils.



Figure 3: Farmer with recently built water point for livestock and irrigation



Figure 5: Local population in Aksu watershed

## Community involvement, the cornerstone of DRR:

Natural resources users, the people, are the first affected by disasters, but they are also the ones who can change the situation. It requires preparedness, integrated approaches and eco-based solutions. That is to say a new set of skills, as well as a deep change in mindsets and habits. The communities also have to perceive the economic gains in these measures in order to replicate them. That is why DRR requires an integrative approach to foster commitment and acceptance of the local communities, which is, together with governmental support, the cornerstone of every effective grey and green measure.



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