

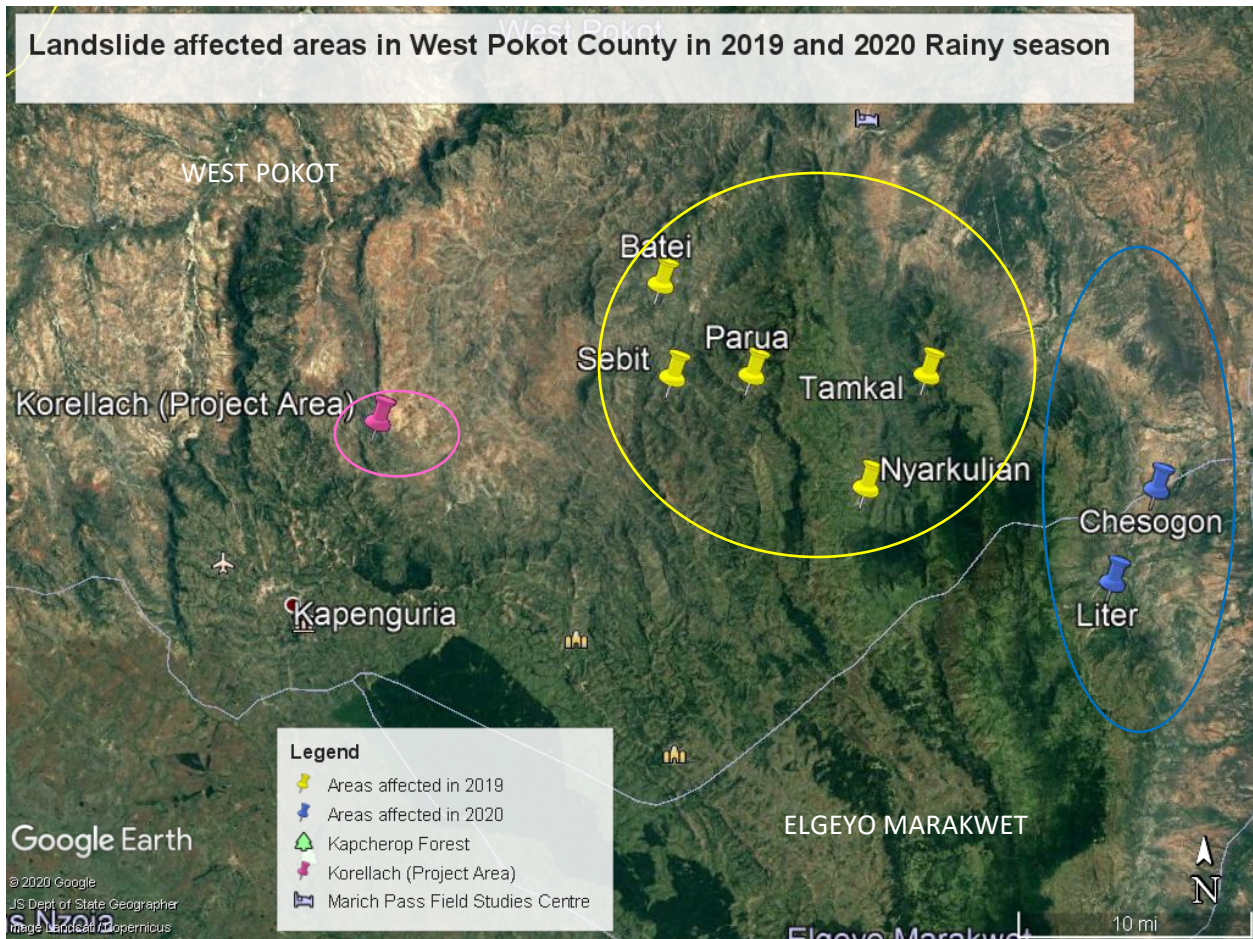
**THE STATUS OF LANDSLIDE OCCURENCE IN WEST POKOT:  
THE IMPACT OF SOIL AND WATER CONSERVATION INTERVENTION  
OVER THE LONG RAINY SEASON**

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In 2019 and 2020, catastrophic land and mudslides occurred as the result of heavy downpours in West Pokot in the South-Eastern parts of Pokot Central and Pokot South sub-counties, as well as the areas bordering Elgeyo Marakwet. The worst landslide occurred in November of 2019 which claimed the lives of 52 persons, the loss of an unaccounted number of livestock, and property loss and displacement of over 22,000 households in Parua, Nyarkulian, Sebit, Muino, Tamkal, and Batei.

The affected areas have a high potential for farming, and farmers practice crop production of short season vegetable crops such as kale, cabbage, tomatoes, potatoes and onions. The economic benefits of these crops, especially onions in Sebit, had created a huge business market in the region and created a high demand beyond the county because of the quality, affordability, and accessibility. The high demand and the readily available market for the farmed produce had been a key motivation for the farmers leading to the opening of more land for production upstream and in naturally forested areas. This farmland development, spanning more than 20 years and without targeted soil conservation measures, left the soil exposed to erosion and possible landslides in extreme cases.

The most recent landslide occurred on the border of West Pokot and Elgeyo Marakwet, in April of 2020, because of heavy downpour in this high-altitude area. It occurred in the afternoon, giving the residents time to evacuate following distress calls to do so from those who witnessed the mass movement from higher ground (implying that it would have been worse had it occurred in the night). The devastating effects were felt downhill in the Liter and Chesogon areas where the flash floods and mudslides carried along anything its path, including people, livestock, houses, schools, a police station, the post office, and many homes. A total of 4,000 people were displaced, many were injured and about 29 lost their lives in the tragedy. The heavy rains cut-off the bridges at Marich and Chepera along the Makutano – Lodwar highway affecting public transport and delivery of essential goods and services as well as medical supplies.



**Figure 1. The project area (circled in pink) in relation to the areas affected by landslide in November 2019 (circled in red) and April 2020 (circled in blue) (Google Earth, 2020)**

### **Landslide situation in the project area**

There were no reported cases of landslides in the project area and the larger Chepareria ward that is inhabited by 7,495 households. However, hotspot areas that are likely to experience landslide had been identified in the highly elevated areas in Kosulol, Tol-Kaghin and Kamatira areas that are between 5 to 10 Km (air distance) from the project site. In addition, farmers fear that the elevated areas of Korellach Parak facing Parkwesa village to the East could experience landslides in the event of extreme and extended rainfall, even though there is no evidence at present. The local administration had advised farmers in areas suspected to be vulnerable to relocate to safer grounds to avoid unnecessary loss of lives and property. Farmers in the project area have indicated that they have never seen mudslide or landslide in their area other than increases in gullies that sometimes result from a large soil block being cut off by raging flash floods or surface run-off.

The intervention done by the project on soil and water conservation had been hailed for contributing towards stabilizing gully's gorges by reducing their expansion and soil loss at farm and landscape level. This had made it possible to see notable differences between the farms where

conservation measure had been done and where it had not been. Some of the notable differences ascribed by farmers include:

**a. Terraces**

- Seeds planted by farmers are no longer swept by water surface run-offs like before
- Improved crop growth in the farms allowing production of crops into the second season which was not possible before
- A notable reduction in the speed of water surface run-off flowing at the farm level
- Improved water retention in the farms
- Reduced gully growth on the head and width (perceived healing of gullies?)
- Increased vegetation and grass production / growth in the farms where terracing had been done

**b. Sand dams**

- Decreased speed of flooding water in the gully channels
- Increase accumulation of sand up-hill
- Development of new streams and regeneration of streams in areas where they had ceased flowing thus providing clean potable water for domestic and livestock use
- Increased growth of grasses and other vegetation along the gully's with sand dams
- Reduced gully growth

Since the soil-water intervention was commissioned, farmers have reported increased value of land due to the transformation of terracing and enclosure, which reduced soil loss and increased vegetative growth. Tree planting during this long rain period had started with farmers feeling motivated by the value of trees, where, it had been demonstrated that farms with higher number of trees had fewer incidences of soil erosion and had shown good underground vegetative regeneration. The three community tree nurseries initiated by the project in the area had at the beginning of the rains (April 2020) distributed 30 tree seedlings of *Grevillea sp*, *Gliricidia sp*, *Calliandra sp* and Mango to each approximately 100 households in the catchment areas.

## **Soil and Water conservation influence beyond Drylands FRN**

**a. Farmers within the catchment area**

Farmers within the Drylands FRN reached out to farmers around the project area such as Parkwesa, Cheseto, Cheroyon and Chepturunguny villages. The farmers in these villages were inspired by what they saw in the drylands project area. Together, they have engaged in communal activities such as the opening up and repairing of common impassable roads, building of sand dams and gabions in a severely affected area in Parkwesa and motivating the farmers to be organized in groups to enjoy the economies of scale.

**b. The county government**

Following the devastating landslides, the county government acknowledged the role of soil conservation measures and profiled it as an important undertaking to avert future disasters. Through the Governor, the Departments of "Environment, Water and Irrigation" and "Agriculture,

Livestock and Fisheries” gave commitment towards scaling out the interventions that had so far worked to a wider area and closely collaborating with research institutions directly doing research with the farmers.

### **Photo Gallery**



***Figure 2. Farmers receiving their share of seedlings from (a) Korellach Parak tree nursery and (b) from Kaporowo tree nursery on April 2020. Photograph taken by Mr. Benson Loriang'apeta, the chairperson Korellach Parak group.***



**Figure 3. Combined efforts by drylands FRN farmers and the community in opening up new roads in Kaporowo. (Photograph courtesy of Mr. Richard Kitony, the secretary Kapkitony farmer group, taken in January 2020)**



**Figure 4. (a) Farmers constructing terracing in Kaporowo in 2019 and (b) the view in April 2020 on the benefits of terracing in reducing water speed, retention and increasing the time and amount of water infiltrated. (Photograph taken by Mr. Alkamoi Bonface, University of Eldoret)**



***Figure 5. Sand dam providing physical barrier to water movement along the gully channel thereby (a) considerably reducing the speed of flash floods and (b) retaining sand.***



***Figure 6. Landslide in Elgeyo Marakwet and West Pokot Counties that resulted to a mass flow of rocks and mud downhill along in Chesogon. Photograph taken by H.E Governor John Lonyangapuo on 19<sup>th</sup> April 2020.***