Process case study

Livestock refuge mounds for protecting livestock during floods and droughts in Bolivia

In areas prone to rapid-onset flood events, livestock-keeping communities sometimes construct compacted elevated earth mounds. Animals are then herded onto the mounds in response to flood early-warning systems. In this case study from FAO in Bolivia, livestock refuge mounds were constructed for at-risk communities in the tropical lowland department of Beni to prevent flood as well as drought disasters. The livestock refuge mounds have not only protected livestock but also safeguarded agricultural production. The activity has now been replicated by departmental and municipal governments, as well as by private breeders.

Background

An alternative agricultural technique taken from the pre-Hispanic culture of the Moxos, a livestock refuge mound is a heaped pile of soil with adjacent crop parcels that helps lessen the impacts of flood and drought events. The mound areas range from 0.5 to 1 ha, and from 1.80 to 2.20 m in height.

A surrounding peripheral canal has a storage capacity of approximately 13,000 cubic metres of water. In times of drought, the channel is used to supply water to livestock and support complementary food production strategies such as horticultural production and fish farming. This diversification of food sources strengthens at-risk livelihoods.

Activities

Beni contains 43% of the national cattle herd, supporting more than 3.8 million of the 8.8 million cattle in Bolivia. Seasonal flooding is common as some of the most important rivers converge in Beni.

The objectives behind the construction of the livestock refuge mounds in Beni were to (i) reduce the impacts of floods and droughts on livestock; and (ii) to establish fodder banks for the provision of forage (hay) for a period of four months when flooding would result in a lack of pasture. The mounds would therefore not only save the livestock, but also preserve their weight and physiological condition.

The construction of the ridges and channels for the livestock refuges involves cleaning and clearing the mound area, designing the channels, and developing a maintenance plan for community implementation.

Outcomes

In 2012, the municipality of Santa Ana del Yacuma was the first participant in the project. FAO subsequently supported the construction of 15 refuge mounds within the communities of Loreto, Camiaco, Argentina, San Pedro Nuevo, Fátima, San Lorenzo de Moxos, San Andrés and San Juan de Mocovi. The Argentina community involved 54 livestock breeder families.

During the 2014 floods, the 0.5 ha of livestock refuge mound helped save not only the cattle of the community, but a total of 2,000 cattle from other communities during three months of flooding. In addition, about ten families from the community found shelter on the refuge mound. Eleven meat driers have also been built for slaughtered cattle after floods, and 900 hectares of agricultural land belonging to 1,163 families have been rehabilitated by planting different vegetable crops and pasture.

Further artificial refuge mounds have now been built by other communities. The incorporation of the construction of refuge mounds in departmental and national plans means that livestock refuge mounds are also forecasted for other flood-prone areas and municipalities.

Source: FAO (2016) Livestock refuge mounds to strengthen resilience against natural hazards in Bolivia
https://www.fao.org/3/i6613en/i6613en.pdf

LEGS case studies demonstrate good practice in livestock emergency response. They cover the six LEGS Technical Intervention areas, the eight LEGS Principles as well as the broader contexts covered in the third edition of the LEGS handbook. **Process case studies** illustrate the application of LEGS guidance and **impact case studies** reflect on the outcomes of LEGS interventions.

► You can access all of the LEGS case studies at livestock-emergency.net/resources/case-studies

► For more information see the Livestock Emergency Guidelines and Standards Handbook at livestock-emergency.net