



Climate Resilience through Sustainable Rangeland Management Catalyzed by Effective Early Warning

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Cross-Border Region within IGAD – the Karamoja Cluster

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BMZ-funded • Implemented by GIZ • Strengthening IGAD's Capacity to Increase Drought Resilience in the Horn of Africa (SCIDA III)

1 Introduction

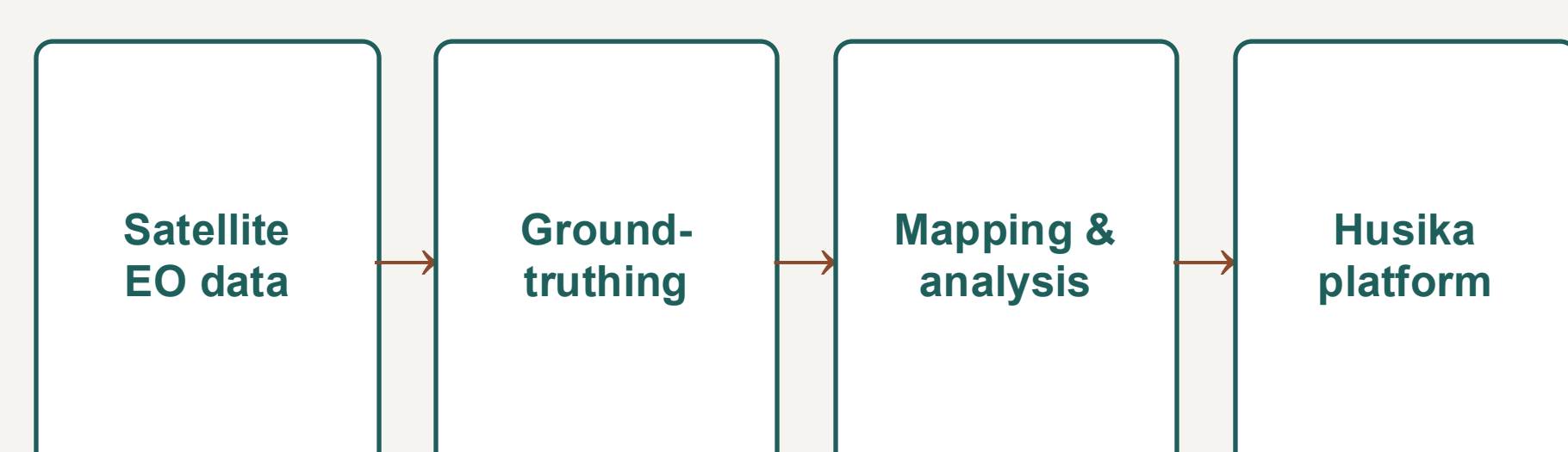
- The Karamoja Cluster (Kenya–Uganda border area, extending to Ethiopia and South Sudan) is a hotspot of climate-induced drought, rangeland degradation and resource conflict.
- Pastoral and agro-pastoral communities depend on cross-border grazing – transboundary coordination is essential for resilience.
- The BMZ-funded SCIDA III project, implemented by GIZ, strengthens IGAD's regional role through cross-border resilience measures.
- Addresses Thematic Area 1 (sustainable rangeland management), Thematic Area 2 (climate-change adaptation and mitigation) and Thematic Area 6 (technology, data and knowledge systems).
- The natural resource dynamics are driven by severe resource scarcity, where recurrent droughts and ecological pressures frequently trigger intercommunal conflict and seasonal cross-border mobility over access to essential pasture and water for pastoralist livelihoods.

2 Materials & Methods

- Multi-sensor satellite data: vegetation indices (NDVI), soil moisture, and land-cover change.
- Participatory ground-truthing combined with indigenous knowledge from pastoral communities.
- Characterisation and mapping of transboundary rangelands.
- Identification of grazing capacities and quantification of degradation hotspots.
- Findings feed into the Husika early warning platform for last-mile dissemination.



Participatory GIS – validation of EO delineated rangeland units and calendars

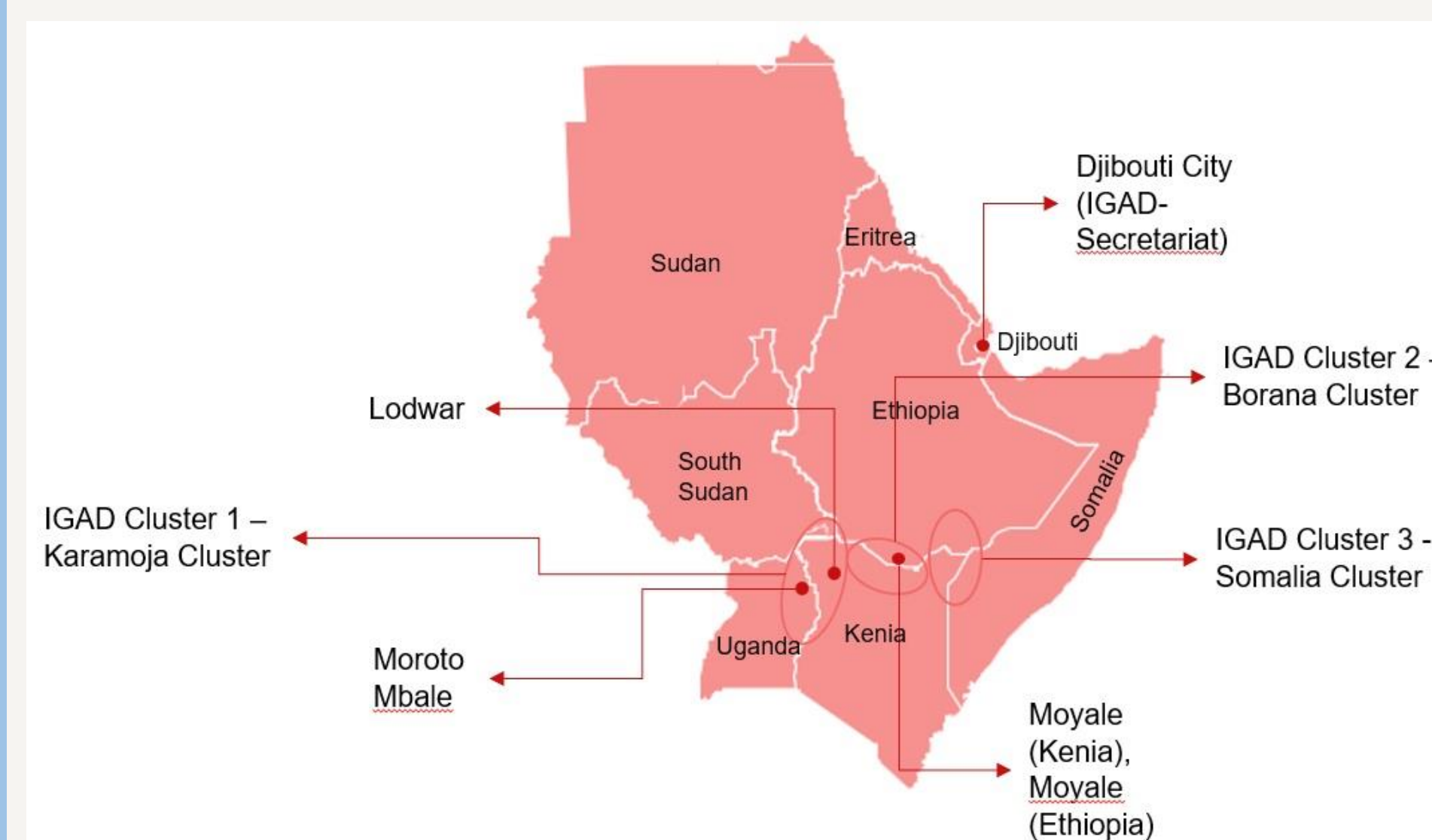


EO-to-action workflow

3 The Karamoja Cluster

IGAD Karamoja Cluster is an arid to semi-arid cross-border region straddling the contiguous frontier areas of northeastern Uganda, northwestern Kenya, southeastern South Sudan, and southwestern Ethiopia.

Natural resource dynamics: severe resource scarcity, recurrent droughts and ecological pressures trigger intercommunal conflict and seasonal cross-border mobility over access to essential pasture and water for pastoralist livelihoods.



Cross-border country map - Karamoja

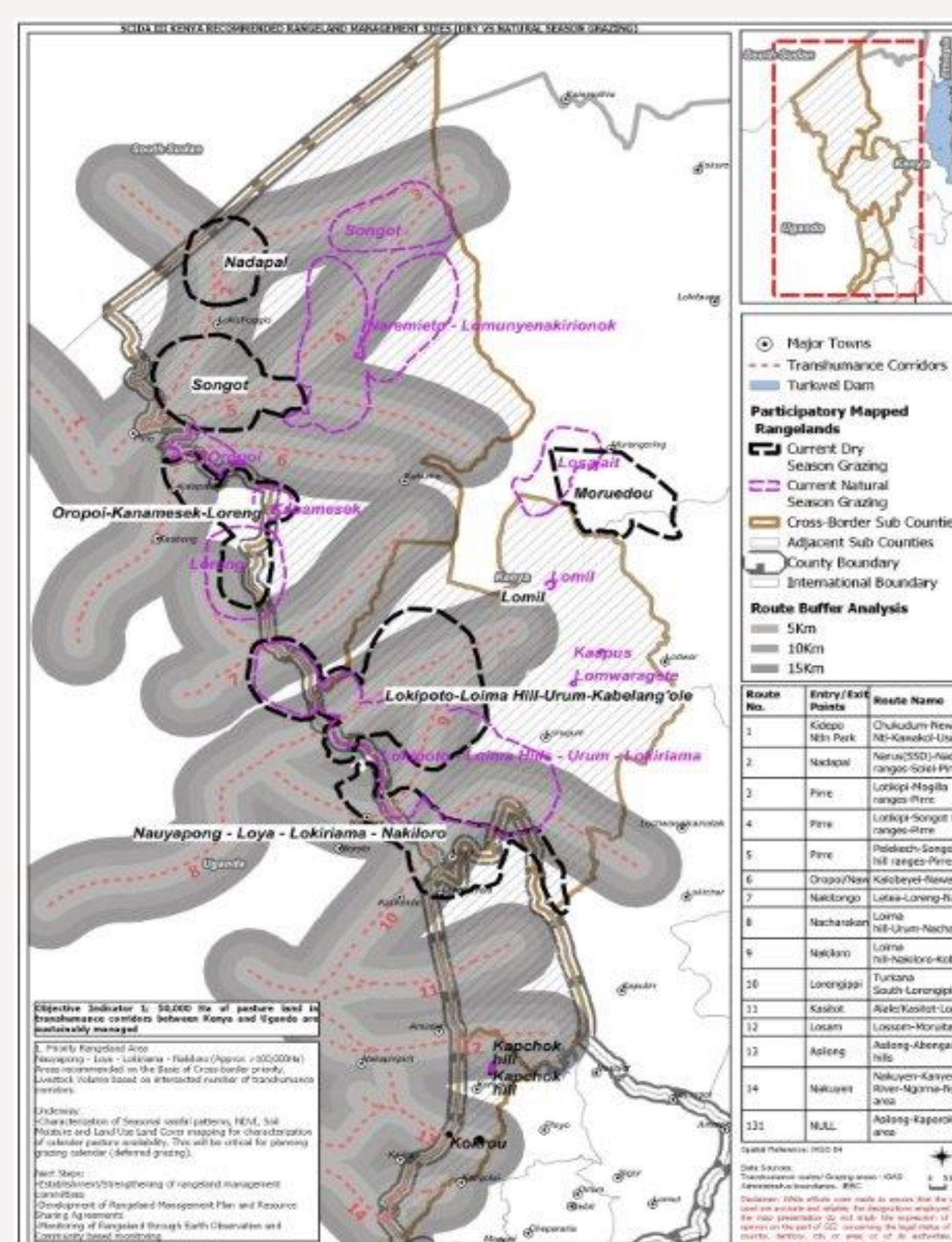
4 Results

>85% Rangeland monitoring accuracy

↑ Improved drought-detection lead time

IGAD Enhanced cross-border coordination among member states

- SCIDA III demonstrates that EO-driven, participatory systems can transform vulnerability into resilience in dryland agro-ecosystems.



Rangeland management units with seasonal c=grazing calendars

5 Husika Early Warning Platform

- Most early warning systems fail to reach beneficiaries in hard-to-reach areas and in appropriate local languages.
- SCIDA III scaled up Husika: a multi-layered information management system for last-mile reach.
- Increased interoperability with other early warning systems improves decision support for the last-mile beneficiary, including women and youth.

Actions enabled for last-mile users:

- Timely livestock mobility decisions
- Early destocking alerts
- Nature-based restoration planning



2-way delivery of EWS for sustainable rangeland management

6 Conclusion

- EO-driven, participatory rangeland management combined with last-mile early warning transforms vulnerability into resilience.
- Lessons from the Karamoja Cluster are scalable to other IGAD clusters and tropical rangelands.

Early Warning Information Dissemination

husika

Validation and Collection of MH information from Beneficiaries

HUSIKA App - delivers trusted advisories directly to communities via SMS, a lightweight mobile app, and the web