IDMC/NRC Displacement Models: Horn of Africa Livelihood and Displacement Simulator

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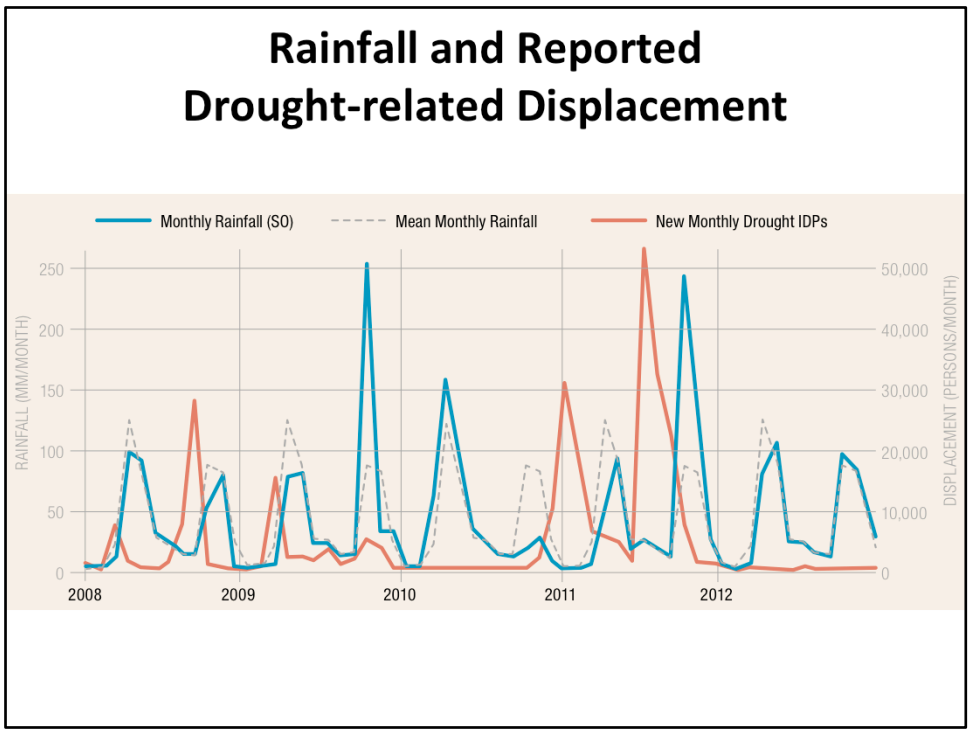
Area Included in the Pastoralist Livelihood and Displacement Simulator at Present

About the Simulator

- It incorporates the best available information from physical and social sciences (FEWS NET, FAO, ICPALD, ILRI, others)

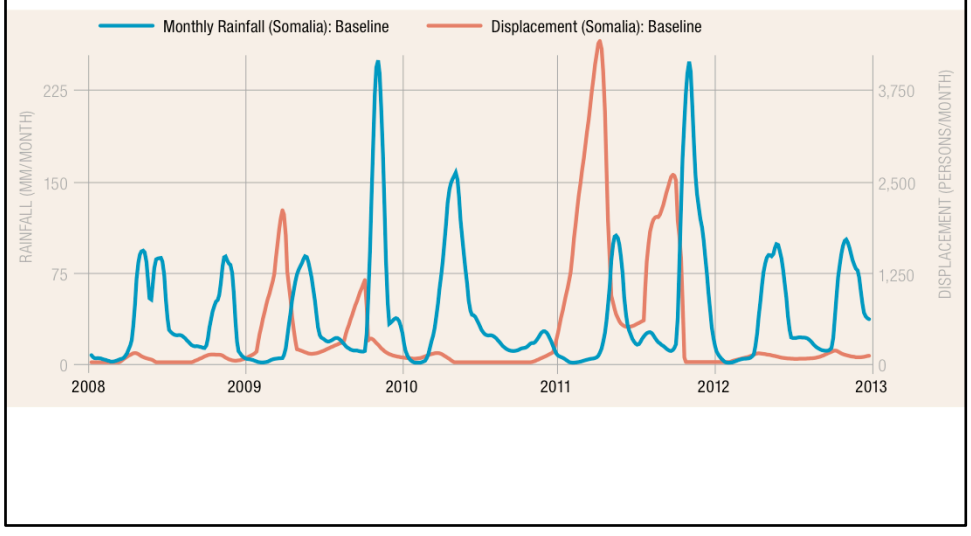
- Combines data into an integrated impact model and interactive decision-support tool

- Next steps: expanding model (Nigeria's NEMA) and customizing model (Kenya's NDMA)



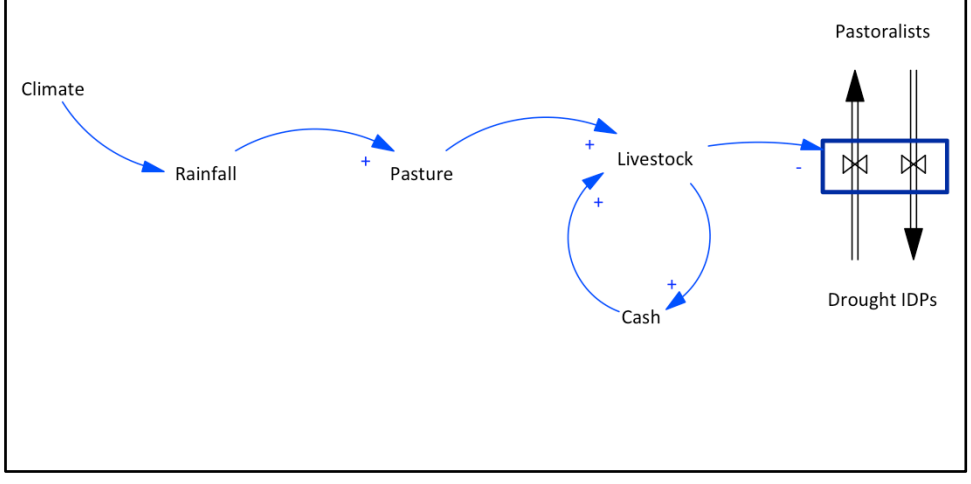
This is historical drought-related displacement as reported by UNHCR. The blue lines are the rainfall, the orange lines represent displacement.

Simulator Results: Drought IDPs in Somalia

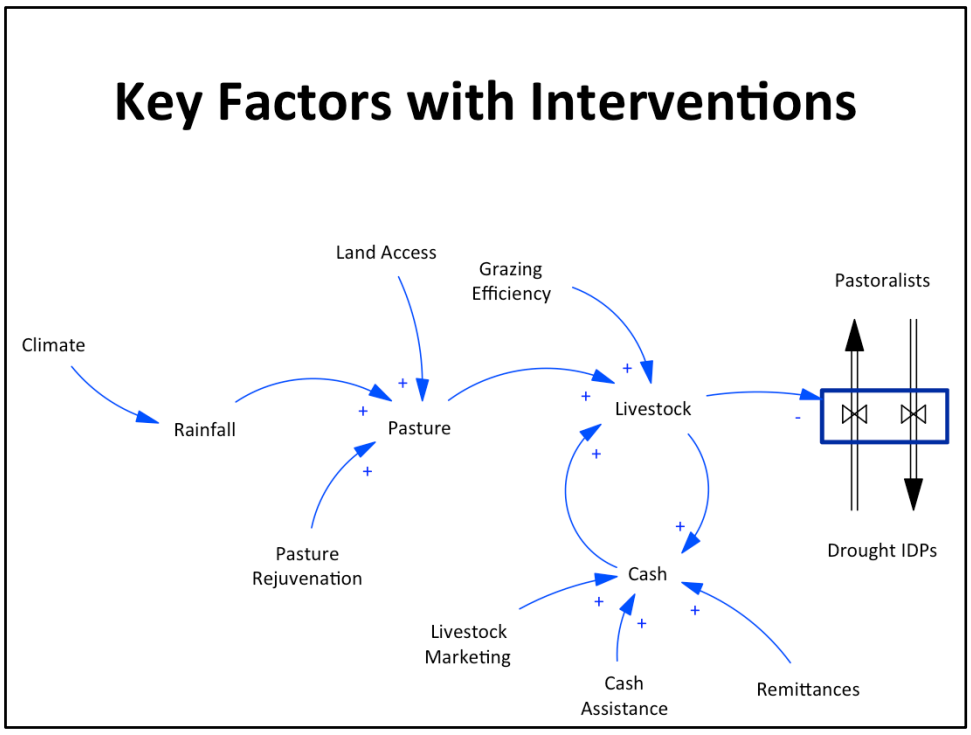


As you can see, with the same historical rainfall inputs, the model was fairly accurate in its ability to match displacement patterns.

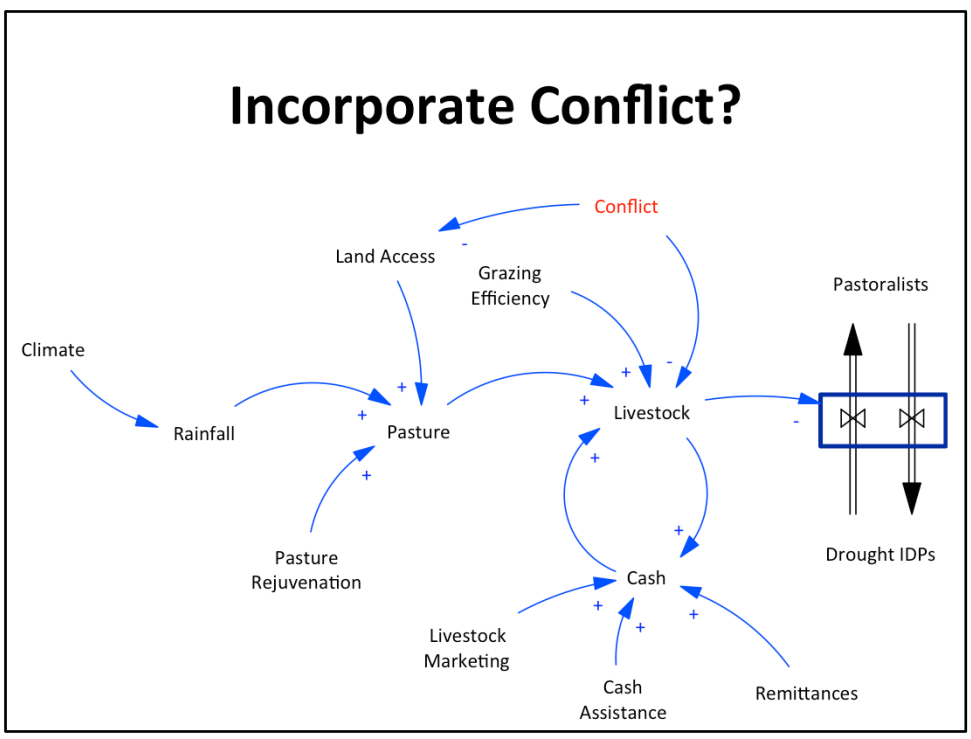
Pastoralist Displacement: Key Factors



These are the main factors involved in the drought-related displacement of pastoralists. How is it that pastoralists, an inherently mobile/nomadic population can become displaced? They become displaced when their livestock holdings fall below a critical threshold at which point pastoralism ceases to be a viable livelihood strategy. Thus, pastoralist displacement is very much a characteristic of pastoralist livelihoods. Pastoralists may be displaced spatially or they may be displaced “sur place” if that is where they are receiving food and other forms of humanitarian assistance/drought relief.


Key Factors with Interventions
Land Access
Grazing Efficiency
Pastoralists
Climate
Rainfall
Pasture
Livestock
Pasture Rejuvenation
Drought IDPs
Cash
Livestock Marketing
Cash Assistance
Remittances

Incorporate Conflict?

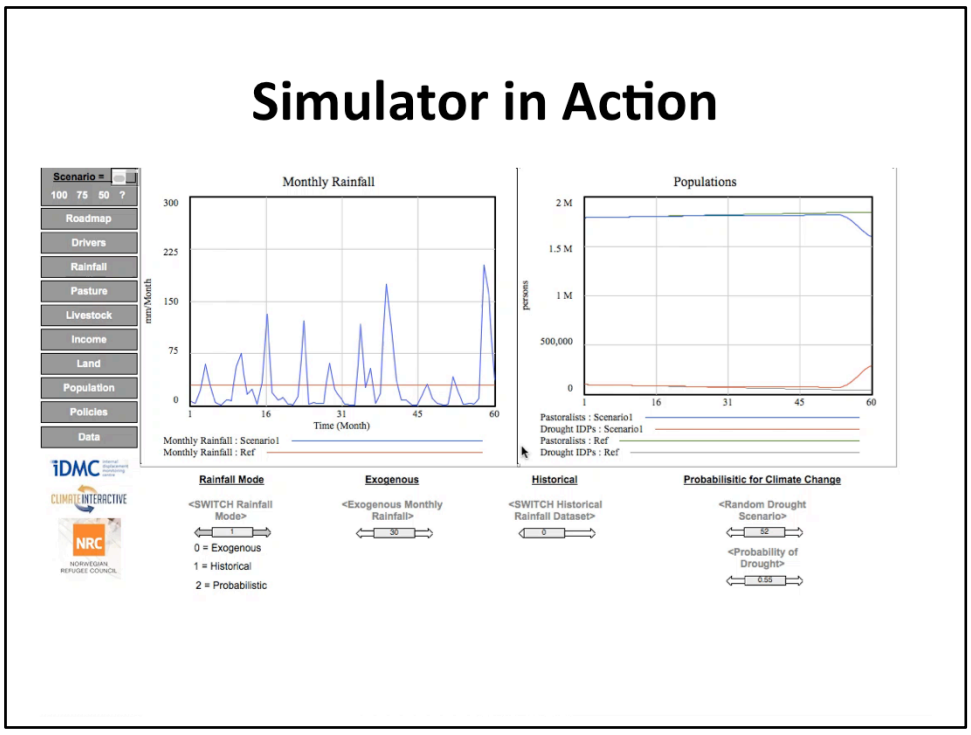


The model doesn't include conflict effects at present. But we are aware of them and could add them to make it even more realistic.

Uses of IDMC's Simulator

- Indicate the likely the impact of droughts, floods and other hazards before they occur
- Early warning → ***Effective*** early action
- Inform (joint) humanitarian and development planning

Simulator in Action



Graph on the left is historical rainfall. Graph on right is displacement, which is due to drought effects on pasture productivity, with knock-on effects on livestock production and pastoralist income and food security.

The rainfall graph, from 2007-2011, reveals the drought in 2010-2011 and the displacement that occurs as a result of the drought after a delay.

The model allows us to explore future scenarios too by including probabilistic rainfall distribution. Thus, we can see what happens if/when the probability of drought changes.

What the model also allows us to do is test the effectiveness of measures to mitigate drought risks. Here we see how the introduction of drought-tolerant vegetation can reduce displacement as well as changes in herd composition toward more drought-tolerant species (i.e., away from cattle and toward herds with more camels, sheep and goats).

QUESTIONS?

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