

Economics of resilience to drought

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Summary

The humanitarian system is stretched very thin, with funding struggling to keep up with needs. While humanitarian aid can save lives, it has historically arrived late, well into the peak of a crisis. There is increasing recognition that responding to these chronic and protracted crises with ongoing emergency aid is costly and unsustainable. Investing in people's resilience – their ability to manage shocks and stresses without compromising their future well-being – is critical for reducing humanitarian assistance needs in complex and protracted crises. The study findings demonstrate that billions of dollars in humanitarian assistance can be saved by investing in a proactive approach to protracted crises, with investments in resilience building activities combined with safety net transfer and an early humanitarian response yielding returns of \$3.6:1. When the wider benefits of disaster risk reduction are incorporated, returns could rise to as much as \$19:1.

Identification of the problem

The Horn of Africa is dominated by arid and semi-arid lands (ASALs) - areas that are characterized by low and irregular rainfall as well as periodic droughts. Between 1900 and 2011, more than 18 famine periods were registered in the region's history.⁵⁸ Food insecurity is driven by a combination of weather, price shocks, and conflict. Aid organizations have come to play a significant role in providing humanitarian response to fill the deficit in household needs during times of shock or stress. While humanitarian aid can save lives, it has historically arrived late, well into the peak of a crisis.

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and unsustainable. Investing in people's resilience – their ability to manage shocks and stresses without compromising their future well-being – is critical for reducing humanitarian assistance needs in complex and protracted crises.

The aim of this study is to investigate and quantify the impact of an early humanitarian response and resilience building on humanitarian outcomes, both in terms of cost savings, as well as the avoided losses that can result from a more proactive response.

The proposed solution

The counterfactual is a late humanitarian response.

The proposed solution is a layered approach combining:

- **An early humanitarian response.** Providing early humanitarian assistance to populations affected by crisis – in other words before assets have been depleted and negative coping strategies have been employed – can save lives and livelihoods and reduce the amount of humanitarian assistance required to protect those affected.
- **A safety net transfer to all poor and very poor households.** Regular and predictable safety net transfers have become a core component of government strategies to cope with and mitigate the effects of crises for those who are most vulnerable. The safety net transfer occurs in all 15 years of the model.
- **Investment in resilience building that increases household incomes.** Resilience is defined as the ability of a person or household to cope with a shock or stress without external assistance. A wide range of types of interventions can contribute to resilience building, and there is no one size fits all approach. For this analysis, it is

⁵⁸<http://www.globalhumanitarianassistance.org/wp-content/uploads/2011/07/gha-food-security-horn-africa-july-20111.pdf>

assumed that households receive an (unspecified) package of interventions that raise income by a certain amount. Note that the analysis does not measure the cost to graduate households to a resilient status; this is not possible because resilience is fluid, depending on the conditions in each year. Rather it estimates the impact that a more proactive response would have on the ability of a household to cope with a shock or stress without external assistance, and the effect that would have on the overall humanitarian budget to fill those needs.

An economic model estimates costs and avoided losses/benefits over a 15-year period (2000-2015) at a discount rate of 5%⁵⁹, for a population of 15 million people across Kenya, Ethiopia and Somalia. The model specifically investigates the impact of changes in crop and livestock production, as well as local prices, on a household economy and hence the ability of that household to meet their food needs. This data on changes to production and prices is taken from actual data for the last 15 years, and mostly reflects repeated drought cycles, alongside any other drivers of change to production and prices such as global price trends and conflict.

The model is further broken down by livelihood zone (pastoral, agro-pastoral and urban) and wealth group (very poor, poor, middle, better off).⁶⁰

Identification of the costs and benefits

Costs: The cost of the scenario is the cost of providing early humanitarian assistance over a 15-year period to all households in the modelled areas; the cost of providing a safety net program to all poor and very poor households; and, the cost of investing in a resilience building measure.

Benefits: The benefits are represented as the avoided losses in income (including the

transfer amount that is surplus to filling the food deficit) and livestock as a result of an earlier and more proactive response, as well as cost reductions in providing late humanitarian assistance over a 15-year period to modelled households.

All model inputs are adjusted for inflation, to 2016 USD. All prices for valuation are based on actual data for each country (localized within the country where possible).

Costs and Benefits

Costs	Per year	Over 15 years
Transfer program - only very poor/ poor households	\$258 million	\$3.9 billion
Resilience investment	\$8.8 million	\$0.1 billion
TOTAL	\$267 million	\$4.0 billion
TOTAL Discounted		\$2.9 billion
Benefits		
Avoided cost of food aid	\$347-\$650 million	\$7.1 billion
Surplus income from transfer	\$74-\$200 million	\$2.3 billion
Avoided income loss	\$172-\$444 million	\$4.2 billion
Avoided livestock loss	\$23m-\$64 million	\$0.7 billion
Multiplier effects ⁶¹	\$13 million	\$0.2 billion
TOTAL	\$850-\$1,090 million	\$14.5 billion
TOTAL Discounted		\$10.3 billion
BCR		3.6

Summary of Analysis (discounted figures):

- An early humanitarian response saves US\$2.1 billion in humanitarian aid costs over 15 years in comparison to a late humanitarian response. When avoided losses are incorporated, **an early humanitarian response saves US\$3.3 billion, or an average of US\$220 million per year.**

⁵⁹ Note that the original published study used a discount rate of 10% and therefore the figures presented here represent a sensitivity analysis adjusting the rate to 5%.

⁶⁰ The wealth breakdown is a division of the livelihood zone population into 4 locally defined wealth groups,

based primarily upon the ownership of/access to productive assets (land, livestock, household labor, etc.).

⁶¹ Note that the multiplier was only included for the Kenya analysis where evidence on the multiplier effect of cash transfers in the local economy was available.

- Safety net programming (combined with an early response) saves an estimated US\$2.8 billion in humanitarian aid costs over 15 years over the cost of a late response. When avoided losses are incorporated, **a safety net transfer scenario saves US\$4.7 billion, or an average of US\$310 million per year.**
- A resilience-building scenario (that combines an early humanitarian response with a safety net as well as resilience building measures that improve household income) reduces the net cost of humanitarian response by US\$3.8 billion over 15 years over the cost of a late response. When avoided losses are incorporated, **a resilience building scenario could save US\$5.8 billion, or an average of US\$384 million per year.**

When intervention costs are offset against the avoided humanitarian aid costs and the avoided losses (benefits), **every US\$1 spent on resilience programming results in net benefits of US\$3.6.**

It is important to note that these BCRs account for the benefits that arise as a result of mitigating the effects of a production or price shock. Investment in disaster risk reduction can also yield numerous benefits outside of a drought or price shock, that would be additional to the estimates provided here. The World Bank estimates these benefits as ranging between US\$3:1 and US\$15:1.⁶² **Thus the additive return would equate to a BCR of between US\$6.6 and US\$18.6.**

Implications for scale up

Across each of the three countries analyzed, the modelled population represents approximately one-half to one-third of the total population considered to be chronically food insecure, and therefore the savings articulated in this study could increase by a

magnitude of two to three if extrapolated to all of the food insecure population.

The findings would be highly replicable for any country that faces recurrent food insecurity due to price or production shocks, with a large population of agricultural, agro-pastoral and pastoral households.

The humanitarian system is stretched very thin, with funding struggling to keep up with needs (UN coordinated appeals in 2017 saw a 41% shortfall in funding as compared with the amount required⁶³). The study findings demonstrate that billions of dollars in humanitarian assistance can be saved by investing in a proactive approach to protracted crises – which accounted for 86% of humanitarian assistance globally in 2016⁶⁴. By way of example, if we were to extrapolate these findings to the US Government (USG), as the largest donor to humanitarian assistance in Africa, the USG could have saved US\$1.7 billion over the last 15 years on its humanitarian aid spend in these three countries, a savings of 31 percent. Incorporating the avoided losses to households, the model estimates net savings based on USG spend of US\$4.4 billion.

⁶² UNISDR (2015). “Making Development Sustainable: The Future of Disaster Risk Management.” Global Assessment Report on Disaster Risk Reduction. Geneva, Switzerland, UNISDR.

⁶³ Development Initiatives (2018). “Global Humanitarian Assistance Report 2018.”

⁶⁴ Ibid.