Factors supporting households' resilience capacities that contributed to their resilience to the drought

Frankenberger and Smith (2015) showed that all three dimensions of resilience capacity—absorptive capacity, adaptive capacity and transformative capacity—contributed in some way to making households resilient to the drought that took place in the PRIME project's operational area from March through October 2014.

Table 1 contains results of a regression analysis looking at which specific factors contributing to the three dimensions of resilience capacity may have played a role in the two areas of data collection, Borena (in Oromiya) and Jijiga (in Somali).[1] The dependent variable of the regressions is the change in food security over the drought period, which represents resilience because the greater the increase in household food security over the drought period, the more resilient the household was to the drought. Drought exposure is controlled for using six alternative measures (listed in the top row of the table). Most of these are calculated from satellite remote sensing data retrieved from the Africa Flood and Drought Monitor specifically for the villages (Kebeles) for which data were collected. The last one is a perceptions-based measure calculated using data on the number of downstream drought-related shocks households experienced in addition to the perceived severity of the shocks, the latter measured on a five-point scale.

The first column of Table 1 lists the indexes of resilience capacity in addition to the factors contributing to each.[2] For example, bonding social capital is thought to contribute to households' absorptive capacity. Other independent variables controlled for are household demographic variables, education, pastoralist status (whether the households is a pastoral, agro-pastoral or non-pastoral household), the project area (Borena or Jijiga), and an asset index based on ownership of consumer durables, agricultural productive assets and livestock. Note that when the perceptions-based measure is employed, since this variable is measured at the household level, it is possible to control for factors affecting households' resilience at the kebele level using kebele fixed-effects regression. The red-colored boxes signify that, for a particular shock exposure measure, the regression coefficient of the resilience-capacity factor of interest is statistically significant at least at the 10% level. The purple-colored boxes signify that the regression coefficient is negative and statistically significant at least at the 10% level.

It is important to keep in mind that the sample size for this regression analysis, 414 households, is quite small. Thus we can expect that some results that are nearly statistically significant might have been statistically significant if the sample size were larger. For this reason, is it important not to *rule out* factors as being important for households' resilience in the face of a shock based on the significance tests employed here. Also important to keep in mind is that the resilience capacities were far lower in Jijiga than Borena at the onset of the drought and

[1] See Frankenberger and Smith (2015), chapter 2 for a detailed explanation of the empirical methodology.
[2] The meanings and measurement of these factors is given in Smith et al. (2015).

Jijiga households experienced lower drought exposure. This may explain why the results are stronger for Borena.

Summary of regression results:

Absorptive capacity

- The evidence is strong that the absorptive capacity of households in Borena likely contributed to their resilience in the face of the drought. This result is robust to the measure of shock exposure employed.
- The two contributors to absorptive capacity that made a difference are: bonding social capital and access to informal safety nets.
- The regression results only point to one factor that may have contributed to the resilience of households in Jijiga: their holdings of savings prior to the onset of the drought.
- Although regressions with four of the drought-exposure measures signal a *negative* impact of access to informal safety nets on the drought resilience of Jijiga households, this result is not supported by the results using the perceptions-based measure of shock exposure, where kebele-level factors are controlled for.

Adaptive capacity

- The overall index of adaptive capacity has a statistically significant coefficient for the entire data collection area when the perceptions-based measure of shock exposure is employed (and factors at the Kebele-level are controlled for).
- All six regression models point to bridging social capital as an aspect of adaptive capacity that supported households' resilience during the drought.
- In Borena, an additional contributing factor was human capital.
- Access to financial resources might have also helped in this region.

Transformative capacity

- Although the overall index of transformative capacity is not statistically significant, three index components are found to have made a difference to resilience to the drought: bridging social capital, access to markets, and access to communal natural resources.
- While the evidence of the role of bridging social capital is strongest for Borena, the results suggest that it played a role in Jijiga as well.
- Access to markets and communal natural resources supported households' resilience in Borena, but there is no evidence from these data that it did in Jijiga.
- Contrary to expectations, access to basic services[3] is shown by the regression analysis to have had a *negative* impact on households' resilience to the drought in both regions, perhaps due to its correlation with some other unobserved factor, such as humanitarian assistance received.

[3] The services for which access is measured are: primary school, health center, facility for veterinary services, agricultural extension service, institutions where people can borrow money, and security services.

References cited

Frankenberger, Tim and Lisa C. Smith. 2015. Ethiopia Pastoralist Areas Resilience Improvement and Market Expansion (PRIME) Project Impact Evaluation: Report of the interim monitoring survey 2014-15. Feed the Future, United States Agency for International Development.

Smith, L., Frankenberger, T., Langworthy, B., Martin, S. Spangler, T., Nelson, S., and Downen, J. 2015. Ethiopia Pastoralist Areas Resilience Improvement and Market Expansion (PRIME) Project Impact Evaluation: Baseline survey report. Feed the Future, United States Agency for International Development.