Space technology for disaster management: examples from NE Africa

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The ways in which remotely sensed data can be used to manage and so alleviate the consequences of natural and human-induced disasters have never been fully exploited. If prediction of impending disaster is to be useful, those affected by catastrophe and those who come to their aid must work together. A global strategy based on a vision for disaster management that does not involve those affected in their own disaster preparation, mitigation and rehabilitation is doomed to failure.

Local people are experts in ground truth. All that is needed, is for those with expertise in remote sensing to pass on their skills, relevant knowledge and highly informative data in a way that can be understood and valued. To do this, those threatened by catastrophe must understand how disaster relates to their lives and homes, how to use information that can help them lessen the affects of catastrophe and how satellite data is one of the best means of reducing the hazards that affect them.

This can be achieved by making available remotely sensed images, which enhance natural features - geology, vegetation, natural hazards, volcanic activity, landslides and active faults. (Colour lithographic printing is an excellent educational aid.) Appropriate data should include perspective views, SRTM DEM data and stereo anaglyphs that mirror natural landscape, together with Landsat TM or ETM+ 742 images and ASTER 631 images that simulate natural-looking vegetation, all of which are free or low cost.

Dealing with disasters is important, but improving people’s normal living conditions is more so. A person's ability to survive disasters is enhanced if he or she has good food, water and a safe environment. Easily understood satellite images can help achieve this. Remotely sensed images can be used by local inhabitants to plan infrastructure: the best routes for roads, the whereabouts of building materials, agricultural possibilities, mineral wealth to finance projects, areas best avoided and safe water supplies.

With timely, reliable information, disasters can be prevented. Surface structures and features clearly enhanced on satellite images can guide refugee placement. Environmental factors affecting human health and well-being can be catered for and hazards can be anticipated and contained.

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