

High-Resolution Satellite Imagery and Community Demolitions in Kenya

Introduction

At the request of [Amnesty International](#), the [Science and Human Rights Program](#) (SHR) of the American Association for the Advancement of Science (AAAS) undertook a review of satellite imagery acquired of two areas in Kenya: Waruku and Githogoro. Forced evictions and demolition of structures were reported to have occurred in these two settlements. After reviewing the available imagery, AAAS SHR no evidence of destruction in Waruku, but found that approximately 156 structures had been removed between June 25, 2009 and September 22, 2009 in Githogoro.

Methods and Technologies

High-resolution satellite imagery was obtained of Waruku and Githogoro that pre-dated and post-dated the forced evictions and demolitions. All images used in this study were acquired by satellites operated by GeoEye, Inc. Images of Waruku were acquired on March 25, 2009 and October 13, 2009 by Ikonos-2 and GeoEye-1 satellites, respectively. The Githogoro settlement was imaged on June 25, 2009 by GeoEye-1 and September 22, 2009 by Ikonos-2.

A visual comparison of the two areas in Kenya was conducted using ERDAS Imagine and ESRI's ArcMap software. A side-by-side analysis of the images using these tools allowed for the identification of removed structures.

Results

A. Waruku

On 11 August, an eviction order was erroneously put into action in the settlement of Waruku. As a result, approximately 300 structures were reportedly demolished without prior notice. Included among the destroyed structures were 27 businesses, three churches, three schools and one sanitation block. The available imagery, however, shows no clear signs of any destruction between March 25, 2009 and October 13, 2009.

Figure One: Waruku



The "before" image is from March 25, 2009. Image © 2009 GeoEye.



The "after" image from October 13, 2009 shows no obvious destruction. Image © 2009 GeoEye.

B. Githogoro

Residents of the Githogoro settlement were reported to have been forcibly evicted during the week of 20 July 2009 by local authorities to make way for the construction of the Northern Bypass road. Based on a comparison of images taken on 25 June 2009 and 22 September 2009, approximately 156 structures were removed.

Figure Two: Githogoro



The "before" image was taken June 25, 2009. Image © 2009 GeoEye.



The "after" image from September 22, 2009 clearly shows the removal of structures that were evident in the "before" image. Image © 2009 GeoEye.

Conclusion

After reviewing the available imagery, AAAS SHR found no evidence of demolitions in Waruku as described by reports, but counted approximately 156 removed structures in Githogoro. The finding in the Githogoro slum corroborates reports of community demolitions in the area to make way for construction of a new road, the Northern Bypass. AAAS SHR and Amnesty International are now looking to determine whether the possible damage in Waruku may have occurred at a location outside of the extent of the imagery used in this study.