Maps, Satellite Imagery, Photos

Indonesia - Banda Aceh Subset 2

1 : 10.000

IKONOS - January 10, 2003 - PRE-DISASTER IMAGE

IKONOS - December 29, 2004 - POST-DISASTER IMAGE

Center for Satellite based Crisis Information
- Emergency Mapping & Disaster Monitoring -

German Remote Sensing Data Center
German Aerospace Center

DLR

Ikonos - Subsets

Damaged Area

Legend

Coastline before Tsunami

Interpretation

This map shows an area north of the village of Lhoong on the northwestern coast of Sumatra (Indonesia) before and after the devastating Tsunami flood wave, which struck many countries in the Indian Ocean on December 26, 2004. The IKONOS images were taken on January 10, 2003 and December 29, 2004, respectively.

The region of Banda Aceh is one of most severely damaged areas. The Tsunami reached up to two kilometers inland and destroyed major parts of the coastal plains, including settlements, forests and farmland.

Scale

1 : 10.000

N

Projection: UTM Zone 46 N
Spheroid: WGS84
Datum: WGS 84

Data Source

IKONOS imagery provided through

CRISP
National University of Singapore

SPACE IMAGING

Map created December 30, 2004 by ZKI@DLR.DE
updated January 4, 2004 (Version 03)

Estimated Collapsed Structures–Banda Aceh

Primary Impact Zone (PIZ)
6,466 ha
36,016 structures digitized (before tsunami)
5.6 structures per ha (before tsunami)
29,545 structures collapsed
82% structures collapsed in PIZ

Notes:
- **The number of collapsed buildings does not include number of structures severely damaged or destroyed** in the Primary Impact Zone that cannot be directly observed from satellite imagery.
- The boundary for the Primary Impact Zone does not include Lho Nga.
- See attached methodology.

29,545
structures collapsed, est

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Source:
QuickBird (60cm), Landsat 7, ETM+, and SRTM (90m DEM)

Imagery and Mapping by:

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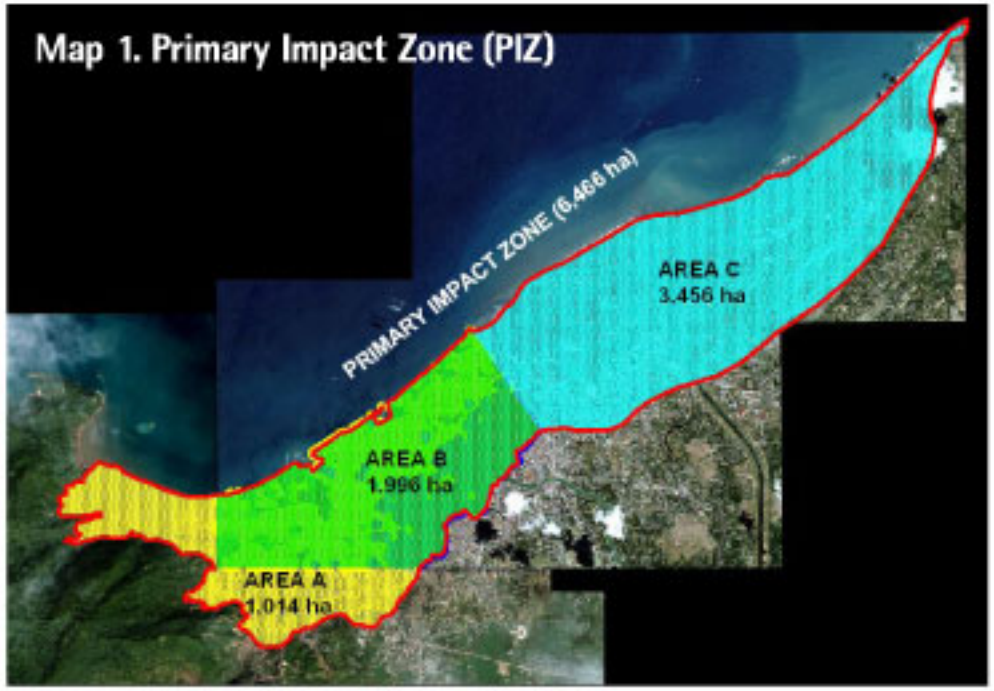

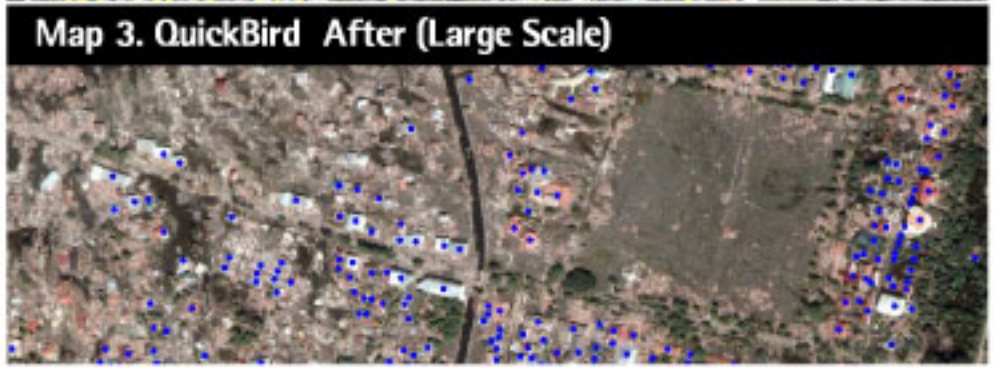

Methodology

Estimated Collapsed Structures

Methodology

The Primary Impact Zone (PIZ) was determined by observations based on QuickBird (60cm), LandSat 7, ETM+, and SRTM (90m DEM). The range of heavily damaged structures was estimated and digitized using QuickBird imagery viewed at large scale (maps 2 & 3). For the areas beyond available post-tsunami QuickBird coverage (map 1, area C), the PIZ was estimated based on interpretation of post-tsunami LandSat 7 and low elevation (<25m) areas defined by DEM.

All observable existing structures pre-event were digitized (map 2) using QuickBird at large-scale, covering areas B&C on map 1.

For areas within the PIZ, not covered by pre-event QuickBird (map 1, area A), an estimated density of 4 structures per ha. was applied

Available pre and post-event QuickBird images (map 1, area B) were analyzed, and remaining structures post tsunami (map 2 & 3) were digitized and counted. A ratio of pre and post-event structures collapsed in the PIZ was calculated (82%), and applied to the remaining area (map 1, area A & C) of the PIZ not yet covered by pre *and* post-event QuickBird.

Summary

Primary Impact Zone (PIZ)

6,466	ha
36,016	structures digitized (before tsunami)
5.6	structures per ha (before tsunami)
29,545	**structures collapsed**
82%	**structures collapsed in PIZ**

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Critical Infrastructure Destroyed

Coastal Communities Devistated

Homes and Shops Turned to Rubble

Earth Quake Damage, Leveling Shops