

Recent land cover change in the Silang-Sta. Rosa sub-watershed of the Philippines, and implications for flood risk

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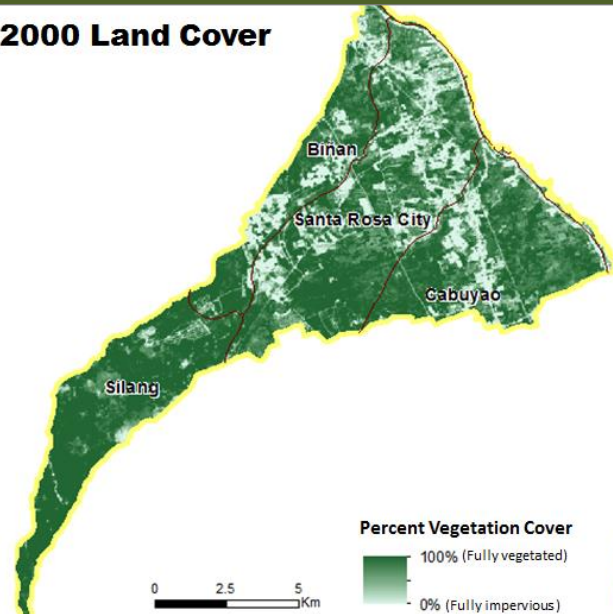
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Overview

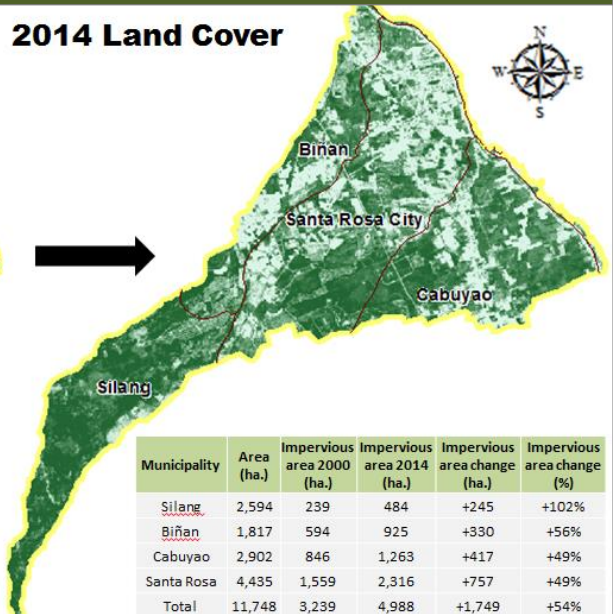
- Landsat satellite images¹ analyzed using remote sensing techniques to map the extent of impervious and vegetated land in 2000 and 2014. Land cover change calculated to assess implications for flooding.
- Results shared with local government units to stress the need for climate-resilient land use planning.

Rapid conversion of vegetated areas to built-up land

2000 Land Cover



2014 Land Cover

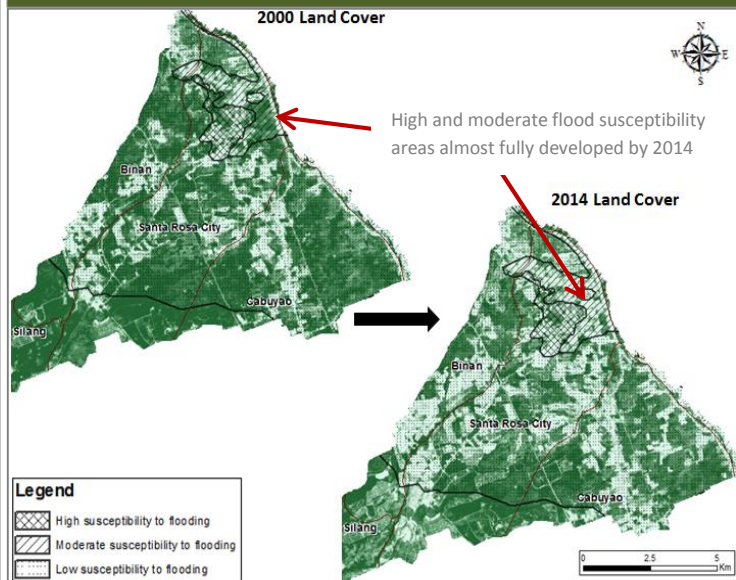


Municipality	Area (ha.)	Impervious area 2000 (ha.)	Impervious area 2014 (ha.)	Impervious area change (ha.)	Impervious area change (%)
Silang	2,594	239	484	+245	+102%
Biñan	1,817	594	925	+330	+56%
Cabuyao	2,902	846	1,263	+417	+49%
Santa Rosa	4,435	1,559	2,316	+757	+49%
Total	11,748	3,239	4,988	+1,749	+54%

Key Messages

- Impervious area of sub-watershed increased by 54% (from 3,239 ha. to 4,988 ha.).
- Vegetated area decreased by 21% (from 8,509 ha. to 6,760 ha.).
- **Upstream:** Impervious area increased by 102% in upstream municipality of Silang, and also increased in upstream parts of Biñan and Santa Rosa City, causing higher runoff (more frequent and intense floods downstream).
- **Downstream:** The most flood-prone areas in the watershed underwent some of the most development.

Significant development in flood-prone² areas



¹Landsat satellite data courtesy of the United States Geological Survey (USGS). Spatial resolution (i.e. pixel size) of the images are 30m x 30m.

²Flood hazard data courtesy of the Philippine National Mapping and Resource Information Authority (NAMRIA).

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