

Assessing Laserscan data of Tropical islands

It is well known that small island development states (SIDS) will disproportionately be affected through sea-level-rise, salt-water-intrusion and increasingly severe weather events. For instance, hurricanes will hit the Dutch Caribbean islands 7 times in comparison to larger nations.



To combat these challenges, it is of great importance to have digital mirror of these islands (in the form of detailed altitude maps and good topographical maps). Detailed elevation maps (Digital Terrain Models, DTMs) are important not only for the pre-processing of very high resolution satellite imagery, but also for e.g. geomorphological studies, soil surveys, hydrological modelling, species niche modelling, that all need altitude information as an input. Over the last couple of months, Airborne LiDAR have for the first time been acquired for these special Dutch municipalities (Bonaire, St Eustatius and Saba). Likewise, airborne Laserscan data has been recently been acquired for Puerto Rico and various French Colonies. This collected data is valuable for nature monitoring and drawing up nature and climate plans. Furthermore, they can serve as a reference for utility companies that supply electricity or water, as well as for safety enforcement by police and fire brigades. However presently a lot of this data is not yet processed resulting in an untapped potential. Within this project, you will focus on capitalizing on this potential by processing this data into essential (biodiversity) variables to monitor climate change impacts.

Proposed Activities

- Assess quality of Airborne LiDAR datasets
- Create a DTM for tropical SIDS (e.g., Dutch Special Provinces, Puerto Rico,..)
- Process DTMs to create detailed land cover/use map
- Integrate DTMs with high resolution optical remote sensing to estimate risks to biodiversity and climate change.

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