

Vetiver Solution

A Total Success in Landslide Stabilization at Itaipava, Petropolis, Rio de Janeiro, Brazil



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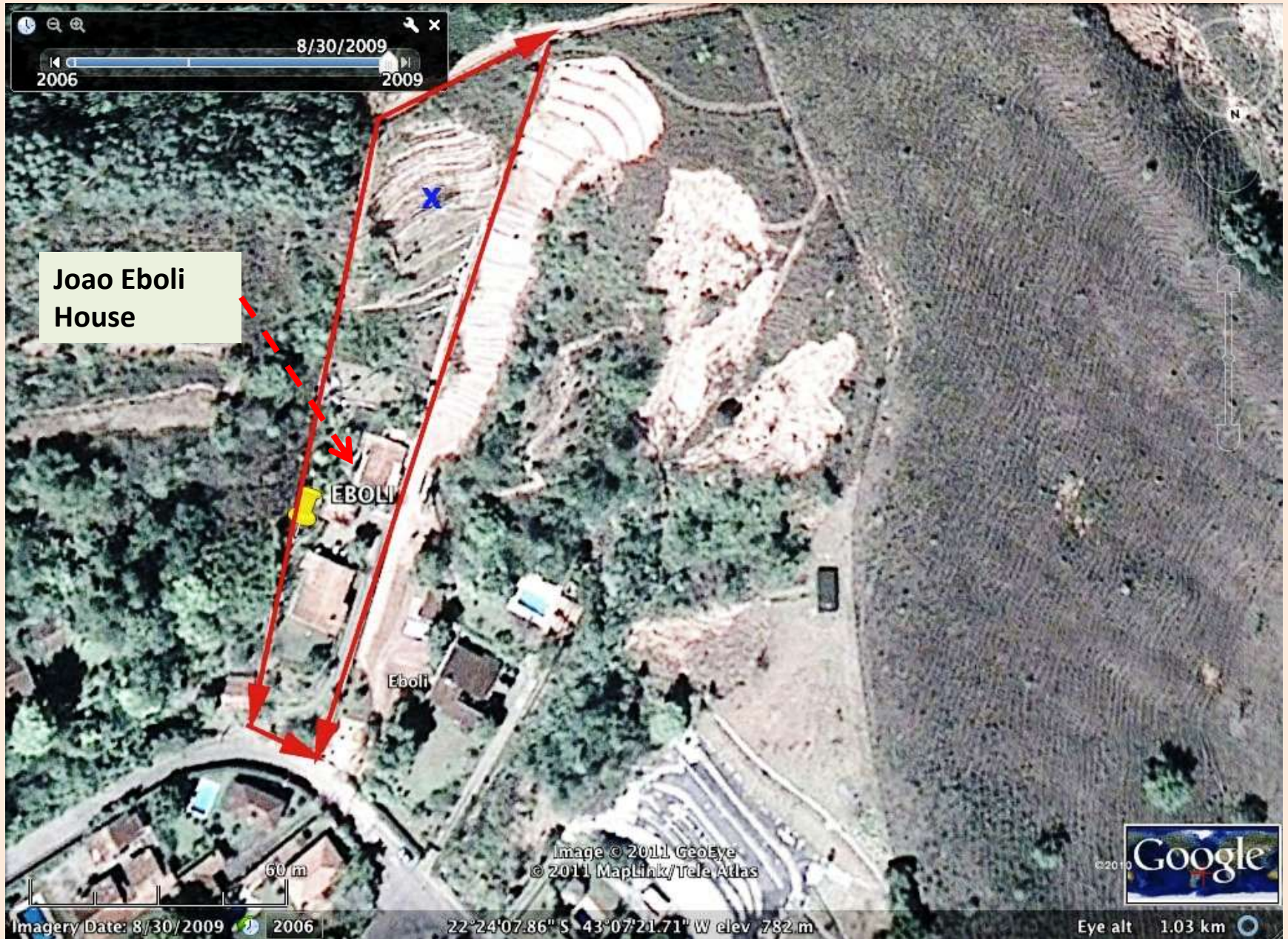
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Landslide in Brazil



Landslide like this is common in Brazil due to highly erodible soil and extreme weather

Landslide at Itaipava, Petropolis, Rio de Janeiro





Site before Landslide



Site after Landslide

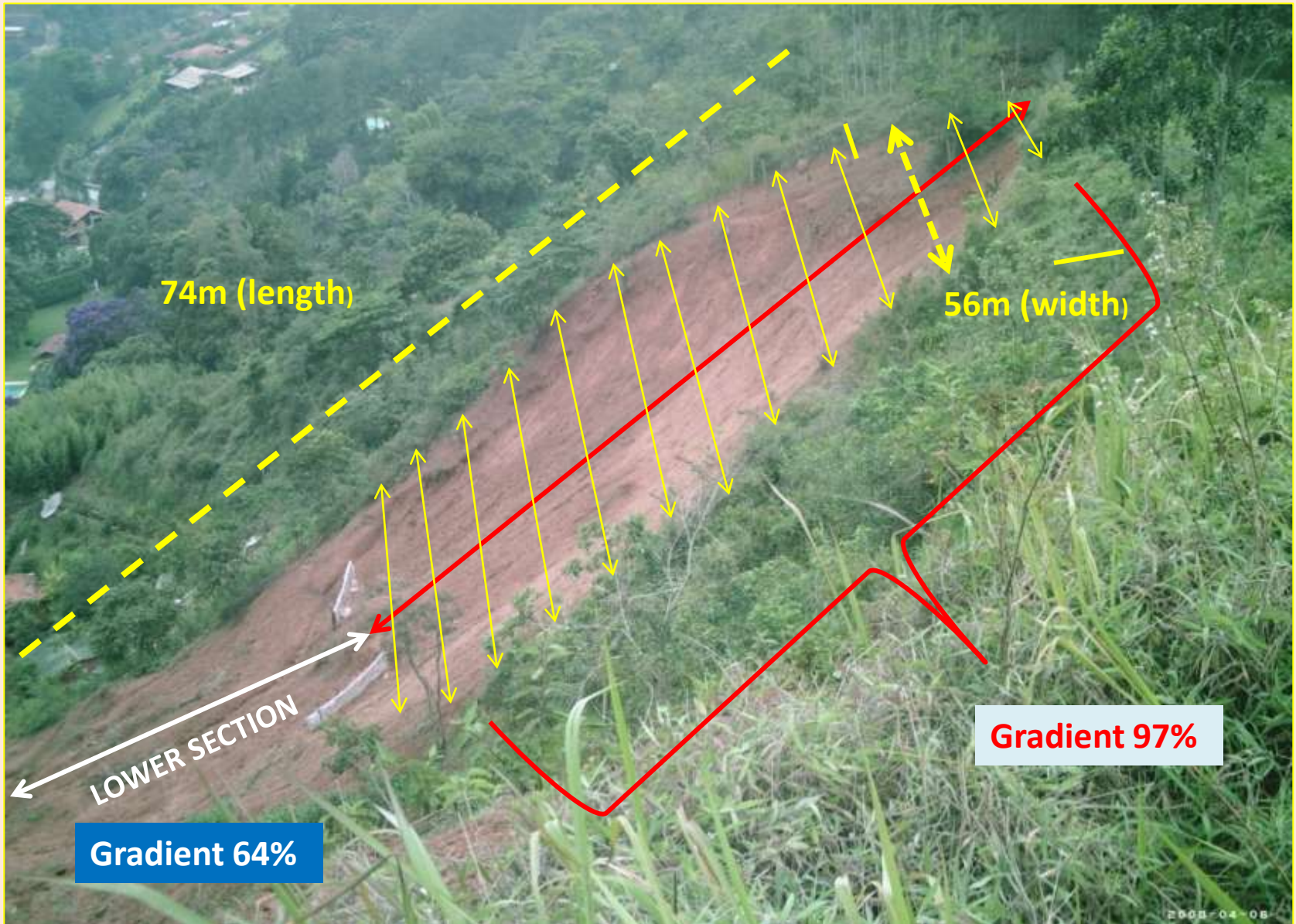
Site after Landslide



Landslide direction



Site steep gradient (66%-97%) and planting layout



Site preparation



Preparation of polybags in nursery





Planting on contour lines ay 1m Vertical Interval



New planting overview



Steep slope planting overview



One year after planting





Three years after planting and withstood several intense storms



Supporting Materials: Logs from vetiver leaves





Vetiver Logs

**Vetiver Logs
trapped
sediment and
enhanced
growth**



Supporting structures: Terraces with soil bags



Supporting plants: Pintoï peanut to improve soil fertility



A green solution: Four years later



Conclusion and Recommendations

- After four years the slope has maintained its integrity demonstrating and proving that Vetiver grass can rehabilitate and maintain slopes affected by landslides.
- The use of VS for the stabilization of slopes not steeper than 1:1
- The VS will fail when not properly applied or not well maintained.
- The Vetiver when installed and following the correct technical guidelines is a guaranteed success

Perhaps the only real defect of the Vetiver solution is: Too cheap to be true, too cheap to believe when compared to heavy stone structures.

THANK YOU

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