**Title**

Identification of Rice Fields in Rwanda with Sentinel-1 in Google Earth Engine: An exploration of remote sensing and rice fields

**Author**

[Jiang, Shilian](https://repository.tudelft.nl/islandora/search/author%3A%22Jiang%2C%20Shilian%22?collection=education)

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**Abstract**

This article uses Sentinel-1 satellite images to identify rice fields in Rwanda from 2017 to 2021 in an attempt to derive the current status of rice in Muvumba catchment, in the northern part of Rwanda. The timing of rice cultivation in each season in that area was identified as not homogeneous, but generally aligned with the local rainy season. The results identified after late 2019 show a large change, with flooding from extreme rainfall as a possible cause. The paddy fields may have been completely flooded and the infrastructure destroyed. Policy changes in Rwanda’s agriculture may also be a contributing factor. Among them, the implementation of land consolidation policies can influence some of the farmers’ options, for example, by withdrawing from the rice planting program. The absence of official data and field data makes this project not being able to provide definite reasons for the results. The open discussion of this project makes it exploratory and offers the possibility for potential follow-up studies. The uncertainty of the results also suggests that more attention needs to be focused on these topics. However, what is certain is that the use of remote sensing images to monitor rice has the potential to be cost-effective.