Field-based landcover classification using TerraSAR-X texture analysis.

ABSTRACT

The present study aims to evaluate the field-based approach for the classification of landcover using high-resolution SAR data. TerraSAR-X (TSX) strip mode imagery, coupled with digital ortho-photos (DOPs) with 20 cm spatial resolution was used for landcover classification and parcel mapping respectively. Different filtering and analysis techniques were applied to extract textural information from the TSX image in order to assess the enhancement of the classification accuracy. Several attributes of parcels were derived from the available TSX images in order to define the most suitable parameters discriminating between different landcover types. Then, these attributes were further statistically analysed in order to define separability and thresholds between different landcover types. The results showed that textural analysis resulted in high classification accuracy. Hence, this paper confirms that integrated landcover classification using the textural information of TerraSAR-X has a high potential for landcover mapping.