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MAPPING CROPLAND PARAMETERS – RESULTS FROM THE CENTRAL ASIAN WATER (CAWa) PROJECT

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ABSTRACT:

The CAWa (Central Asian Water) project aims at providing a sound scientific basis for trans-national water resources management in Central Asia (see www.cawa-project.net). A network of scientific institutions in Germany and all over Central Asia aims to produce joint scientific results for supporting land and water management in the arid Aral Sea Basin, where over eight million ha of land are annually under irrigation for crop production. The German Research Centre for Geosciences in Potsdam (GFZ) has taken over the project coordination. The Remote Sensing Unit, Würzburg University, associated with the German Aerospace Centre (DLR) is one of the project partners. One strong focus is set on the means of remote sensing as this technology can provide area-wide environmental information and fill data gaps, which in Central Asia widely occur in all sectors related to agriculture. Its major research includes cropland mapping and change detection, field-based and regional crop classification, the creation of agricultural field cadasters (rotation mapping), assessments of water demand, crop production monitoring (yield), and drought detection from field level to regional scales. Therefore, multi-sensor optical data was utilized (RapidEye, Landsat, SPOT-5, and MODIS). Detection of marginal land or agricultural land abandonment, a widespread phenomenon in this region that has strong socio-economic and ecological consequences, is another research focus. The results demonstrate the value of remote sensing technologies to supporting regional decision makers and planners for an improved and sustainable land and water resource management in Central Asia.

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