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Implementation of an operational land cover classification system to support Mexican activity data reporting

T. Wehrmann [a, *], S. Gebhardt [b], R. Kopeinig [c], M. Schmidt [b]

[a] National Commission of Natural Protected Areas (CONANP), Camino al Ajusco 200, Jardines en la Montaña, 14210 Tlalpan, Mexico City, Mexico - thilo.wehrmann@conanp.gob.mx
[b] National Commission for the Knowledge and Use of Biodiversity (CONABIO), Liga Periférico-Insurgentes Sur 4903, Parques del Pedregal, 14010 Tlalpan, Mexico City, Mexico - steffen.gebhardt@conabio.gob.mx, michael.schmidt@conabio.gob.mx
[c] United Nations Development Program (UNDP), Representation in Mexico, Montes Urales 440, Lomas de Chapultepec, 11000 Miguel Hidalgo, Mexico City, Mexico- rene.kopeinig@conabio.gob.mx

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ABSTRACT:

In context of the emission factor estimation according to the IPCC protocol, Mexico is building a national forest monitoring system to provide the accurate base of the activity data section. The system provides all required functionality for an operational land cover (change) production chain implying a scalable and reproducible data processing platform, multi sensor processing capability, and complete data and product management for product provenance/transparency. For the historic base line estimation Landsat TM/ETM time series data is used. Recent land cover (change) is derived from bi-temporal RapidEye coverage. The system is developed and implemented in CONABIO's in house cluster environment consisting of a moderate 100 cores commodity cluster. The central components include an EO data and product catalogue, the distributed processing system, integrated training and validation data sets, hierarchical class scheme management for land cover and land cover change products and various user interfaces. The processing workflow takes advantage of object based image processing and the availability of whole data coverage of the Landsat mission. The system autonomously processed multiple versions of national Landsat based products for different years within few days. For the RapidEye products recent estimation is around 2-3 weeks. Development versions of the system are already installed in partner institutions of the project.

* Corresponding author. This is useful to know for communication with the appropriate person in cases with more than one author.