Tropentag, October 11-13, 2006, Bonn

"Prosperity and Poverty in a Globalised World—
Challenges for Agricultural Research"

Land Use/cover Map and their Accuracy in the Oueme Basin of Benin (West Africa)

Attanda Mouinou Igue[1], Jean Cossi Houndagba[2], Thomas Gaiser[3], Karl Stahr[4]

[1] *National Institute for Agricultural Research of Benin (INRAB), Benin*
[2] *University of Abomey-calavi,*
[3] *University of Hohenheim, Institute for Soil Sciences and Land Evaluation, Germany*
[4] *University of Hohenheim, Soil Science and Petrography, Germany*

Abstract

In the scope of the European Union water initiative for developing countries, the research programme RIVERTWIN (A Regional Model for Integrated Water Management in Twinned River Basins) was initiatited for three river basins, Neckar in Germany, Oueme in Benin Republic and Chirchik in Uzbekistan.

Our contribution in this work is to establish a soil and land resources information system (SLISYS). The objectives of SLISYS is to provide information about soils, climate and terrain conditions in the Oueme basin, to estimate crop yield in relation with soil quality and land management and to assess the extent of diffuse pollution from agricultural production. Apart from soil and climate information, the distribution of crops and land management practices is crucial to achieve the above mentioned objectives. Therefore, a land use/cover map has been established at the scale 1:200.000 from satellites images LANDSAT TM Plus of 2003 from 3 scenes. After image treatment, imaged maps were established and interpretation keys were defined. For efficacy reasons, the interpretation was carried out at the scale of 1:50.000 in order to get maximum information. Field controls were done during one month. More than 650 observations points were checked during the ground checks. Finally, 17 land use/cover classes were defined.

The subsequent accuracy check shows that the overall interpretation accuracy is high (89 %). The land use unit "mosaic of cultivation and fallows" has been interpreted most precisely, whereas the classification of the unit "humid and dry dense forest" has the lowest precision. Crops and fallow land were then distributed within the land use unit "mosaic of cultivation and fallow" according to agricultural statistics from 2003.

Keywords: Accuracy, Benin , land use/cover classification, RIVERTWIN project, Satellite images

Contact Address: Attanda Mouinou Igue, National Institute for Agricultural Research of Benin (INRAB), Rue de l'IITA Togoudo, B.P. 988 Cotonou, Benin, e-mail: igue_attanda@yahoo.fr