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**Land Use Classification by Remote Sensing Techniques and GIS in  
the Tai Region Project on Hydrology (Côte d’Ivoire)**

CLAUDIA SÜLTMANN

*Georg-August University Göttingen, Institute of Geography, Landscape Ecology, Germany*

**Abstract**

The investigation is part of the Ivorian and German cooperative project “Detection of water and nutrient pathways in a watershed in Western Côte d’Ivoire” (financed by the DFG/BMZ programme) which was initiated in April 2001.

Taking into account that the Côte d’Ivoire covers more than 50 % of the worldwide cocoa production and the Soubré region in the Western part covers 30 to 40 % of the Ivorian market the high agricultural and therefore human impact on the natural environment and especially the pressure on the Tai National Park is of major concern.

For this reason, the investigation site which is located in this area, evidently is dominated by cocoa and to a lower extent coffee cultivations. Land use and actual vegetation classification is done via two Landsat 7 ETM images taken in February and April 2001, groundcheck and GIS methods.

Results show that different regions between the National Park and the main traffic link (Gagnoa–San Pédro) can be identified. With increasing distance to the Park the small- and medium-scale cultivation areas of cocoa, coffee and annual crops (< 1 to 2 ha) are increasingly replaced by large-scale plantations of hevea and oil palms.

To cope with the problem of classifying smaller lots and/or identifying different cultures with similar reflectance, a summarizing analysis is striven for, which leads to the following classification: cash crops (above all cocoa, coffee, oil palm and hevea), annual crops by means of subsistence culture systems (maize, rice — rainfed and irrigation —, banana, manioc, yams, tarot, leguminoses, different spices and legumes), forest sites with further differentiation between primary, secondary and degraded forest and fallow.

**Keywords:** Côte d’Ivoire, GIS, land use classification, remote sensing