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**Soil Survey and Evaluation of Agrochemical Implementation on
Hydrology: the Tai Region Project (Côte d’Ivoire)**

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Abstract

In the framework of the project “Detection of water and nutrient pathways in a watershed in Western Côte d’Ivoire” (financed by the DFG/BMZ programme) soil conditions and the implementation of agrochemicals have been surveyed from November 2001 to February 2002.

In Côte d’Ivoire cocoa farmers have increasingly implemented nonshaded suntolerant cocoa tree hybrids. These systems require a considerable input of agrochemicals and technical support. Cocoa diseases and pests are currently causing losses of an estimated third of the total cocoa crop yield.

The region of Soubré, within which the investigation site is situated, is dominated by cocoa cultivation. The above mentioned problems are of major importance for the local farmholders. Detailed soil profiles and complementary soil samples show that the upper slopes are dominated by ferralsols with lateritic layers and high percentages of skeleton of more than 40%. Light-brown Cambisols are found in the “bas-fonds” (inland valleys). Detailed results are given.

Interviews with local planters indicate no significant changes regarding the implemented agrochemicals, their application, treatment and techniques for the last three years. In addition, the results show that an amelioration of application amounts and techniques could be achieved.

Based on these data, an investigation of pesticide concentrations in soil water, groundwater and river water is carried out. Within the investigation site the applied substances are following: diazinon, endosulfan, lindan, methidathion, deltamethrin, propanil, paraquat dichloride, thiamethoxam and DDT. Included are the metabolites of alpha-, beta-, and endosulfansulfate, lindan (further HCH-isomers) and DDT (DDD, DDE). Pesticides are sprinkled twice a year, the main dose is given in July/August and a further in December/January.

Keywords: Agrochemical implementation, Côte d’Ivoire, soil distribution