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the *Institut National de Recherche du Génie Rural et des Eaux et Forêts* (INRGREF), the *Institut National Agronomique de Tunisie* (INAT) and UMR LISAH.

UMR LISAH, which is based in France (La Gaillarde Campus, Montpellier) and in the Mediterranean Basin, also relies on its network of partners, with the main ones belonging to the scientific community in France (e.g. *Institut Languedocien sur l'Eau et l'Environnement*) and abroad (generally in the Mediterranean region). Research stations have been developed in Morocco, with the *Institut Agronomique et Vétérinaire et l'École Nationale Forestière d'Ingénieurs,* and in Tunisia, with INRGREF, INAT and the *Direction Générale de l'Aménagement et de la Conservation des Terres Agricoles of the Tunisian Ministère de l'Agriculture.*

LISAH has developed activities in tropical environments focused on the study of environmental impacts on water and soils in intensively cropped areas in partnership with the World Agroforestry Centre in Kenya, the Office of Science for Land Development in Thailand, CIRAD and INRA in Guadeloupe.

The main areas of research concern studies on the agricultural impacts of pesticide pollution of soil and water in vineyards in Languedoc region (France) and in West Indian banana plantations, analysis of the hydrological cycle of the 'soil-crop' system in small Mediterranean catchments, the development of digital soil mapping methods and soil information systems, the analysis of soil erosion and sediment transport triggering factors and processes in catchments, and studies on the impact of water development projects (ditches, benches, hill lakes) on the hydrological functioning of cultivated soils and catchments. ■

* www.umr-lisah.fr/omere

Beninese farmers' perceptions of climate change and their adaptation strategies

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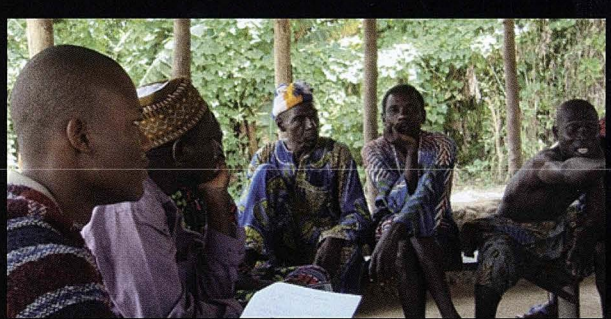

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▲ Photos 1 & 2 - *Negative impacts of adverse weather in the village of Alfakoara, northern Benin.*

Photo 3 - *Use of group questionnaires in the village of Athièmè, southeastern Benin.*

This research is focused on the adaptation of family agriculture to climate change. Based on the assumption that changes can best be described by those exposed to them, a survey of farmers was carried to determine their perceptions of the phenomenon and consequences on the environment and their daily lives. Technical adaptations adopted to deal with changes were also recorded. The survey was carried out in eight villages in the northern, central and coastal areas of Benin, and was also focused on cropping systems (cotton/food crops, food crops/soybean and food crops/oil palm, respectively). A broad climatic variability gradient was assessed, from the north (Sudanian climate with a monomodal rainfall regime) to the south of the country (Guinean coastal climate with a bimodal rainfall regime).

All interviewed farmers had perceived changes in climatic conditions over the previous 15 years. They noted: (i) a trend towards a shortening (or even disappearance) of the second rainy season, and an overall lag in the onset of the main, or only, rainy season, (ii) an increase in rainfall irregularity, more than a decrease in rainfall, (iii) an increase in maximum temperatures, especially during the main, or only, dry season, and (iv) an increase in violent wind storms at the end of the rainy season. One of the worst impacts that they pointed out concerns the violent winds which induce lodging in cereal crop fields, with substantial crop losses, and damage to buildings.

Adaptations differed depending on the farm type and region. Farmers who could: (i) switched to planting new crops such as lowland rice in the central region, while abandoning others (cotton and conventional legume crops such as cow peas and groundnuts, in favour of soybean, in the central region), (ii) adopted shorter cycle varieties, and (iii) modified their practices (inputs, land use, etc.). The most vulnerable farmers engaged in new activities such as charcoal production, or planned to move out of the region.

Contacts: Hervé Guibert, herve.guibert@cirad.fr & Euloge K. Agbossou, agbossou2001@yahoo.fr