

From Forests to Fields in Côte d'Ivoire



When it comes to the sale and use of agrochemicals, it is anarchy, says Ivorian researcher, Dr Pascal Houénou.
(CIDA Photo: R. LeMoynes)

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For most of its history, the town of Buyo has been an isolated backwater in the humid equatorial forests of Côte d'Ivoire. In the late 1960s, the national government launched an ambitious plan to develop the region's rich resource base. The key economic drivers were programs to promote intensive agriculture, and a hydroelectric dam built in 1980 on the Sassandra River. Today, Buyo is part of Côte d'Ivoire's "new coffee and cacao belt" and a magnet for economic migrants. Most come in search of land on which to grow cash crops for export or produce for the local market. Some find work in forestry operations or in the thriving fishery on Lac Buyo, the name given to the reservoir behind the hydroelectric dam. The flood of immigrants has pushed the population from 7,500 in 1972 to more than 100,000 today.

The price of progress

Buyo's rapid transformation from forests to fields has come at a price. People and communities are struggling to cope with the magnitude of economic, environmental, and social changes. A 1996 study, led by Dr Pascal Houénou from the University of Abobo Adjamé, catalogued a litany of ongoing problems, many of which stem from the success of regional development plans.

"Unfortunately," says Houénou, "the agricultural policies put in place have translated into a veritable race against the clock as people clear as much land as possible to secure ownership and title in order to bequeath it to their families."

Figures show that land cleared for coffee and cacao production has grown a hundredfold since 1975. Palm oil and rubber production has also expanded. Land is now a highly marketable commodity subject to speculation and disputes, especially between the region's original inhabitants and new migrants. A presidential dictum stating that "the land will belong to he who exploits it" has done little to ease tensions or promote integration.

The impact on the environment

Economic development has also left its mark on the environment. As savannas replace forests, less rain falls and biodiversity disappears. The heavy use and misuse of fertilizers and pesticides on crops is also affecting the water quality in Lac Buyo and its watershed.

Pesticides that are banned or tightly regulated elsewhere in the world are in common use here. In warm aquatic systems, like Lac Buyo, these pollutants are easily transformed into compounds that can readily enter the food chain. Samples taken from fish confirm the presence of toxins and clearly show increasing contamination levels as these compounds are carried up the food chain.

Water quality is further compromised by the lack of sanitation and waste disposal throughout the area. "Lac Buyo has become a dump," says Houénou.

Water hyacinth and algae thriving on the nitrates and phosphorus flushed into the local watershed from fields, villages, and the town of Buyo are choking waterways and reducing the dissolved oxygen content of the water. This, in turn, is affecting fish species in the lake and surrounding rivers.

The effects of all these changes on the local population are noticeable. Water-borne diseases, such as malaria and diarrhea, and respiratory ailments are on the rise, and malnutrition and poverty are widespread despite decades of economic growth.

The search for solutions begins

Finding solutions to the health problems is the goal of a follow-up study led by Houénou and supported by Canada's International Development Research Centre (IDRC). This time around Houénou and his research team will look for ways to manage the local environment to improve its health and the health of the villagers and townspeople.

"In any research that aims to ensure a better standard of living for the local population, the viewpoint of community members must be taken into account so as to capture their perception of their own *milieu* and to identify their priorities," says Houénou.

The risk, as the research team found out, is that community motivation may be very different from that of the researchers. In a workshop that brought together Houénou's research team, administrative authorities, non-governmental organizations, and village leaders, as well as men, women, and children from across the study area, community priorities were set squarely on infrastructure improvement – electricity, better roads, more clinics and schools, wells and boreholes that were maintained and reliable. Topping the list was housing.

Community participation

"Housing was not part of our original research problem," says Houénou, "but from a community perspective it is certainly a problem of well-being. It meant we had to work hard to communicate with the responsible authorities, local and national."

The group also decided to restrict the study area to Buyo and its immediate surroundings and focus more intensely on the urban, agricultural, and aquatic components of the local ecosystem. To bolster community confidence in the whole process, Houénou's team targeted the lack of safe drinking water for more immediate action. They drew on the work of IDRC-supported researchers from Latin America who have perfected a kit of affordable, efficient community-based water management technologies.

The Buyo researchers chose to pilot slow sand filters to provide potable water to households in the study area. These are easily constructed and maintained, and are part of a larger information, education, and communication strategy designed to educate the population about water-borne diseases and other problems associated with the way water resources are managed. Researchers will also examine how social and economic practices contribute to the problem.

Houénou is the first to admit that community participation can complicate the research process, but it can also pay dividends. "We can use community-know-how and expertise to blend with the results of our research. The two work in synergy to produce concrete changes within the community."

Transdisciplinary efforts pay off

On the research side, a transdisciplinary team is contributing to the data being collected. Before starting its work, however, it first had to define a common research question and common strategy for tackling it.

"Researchers have to overcome some of their habits to go beyond their own sense of scientific security," says Houénou. "Most are not used to working with researchers from other disciplines. But when they get talking you can see them asking different kinds of questions."

This approach often unearths links or factors not evident at first glance. For example, seasonal changes in Lac Buyo's water level influence the way biological and chemical contaminants move through the lake.

This approach also underscores the "gendered" aspect of resource use or misuse. The health effect on women and young children of exposure to pesticides and other agrochemicals has been given priority, and mothers' milk and hair will be tested for pollutants. Socio-economic factors, such as the use of discarded pesticide containers as water carriers or a diet rich in fish, will be examined to see if and why certain populations are at greater risk.

Power relations are reflected between the genders and also in ethnic conflicts in Buyo. Access to and use of resources often depends on ethnic affiliations. Understanding how this functions is important in developing resource management strategies that are sustainable and equitable.

Implementing change

Once the researchers have completed their analysis, a clearer picture of people's health will emerge. Then will come the work of devising solutions. Change is never easy, but communities that have contributed to analyzing the problems will be more likely to adopt proposed solutions.

Knowing what factors affect their health can help them make informed decisions. This is a vital first step in promoting community well-being.

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