

## Responses at the project level (parallel sessions)

# Malaria and vegetable production in Côte d'Ivoire\*

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### *Abstract*

There is growing interest to enhance our understanding of the cross-talk between agriculture and health in the developing world. In sub-Saharan Africa, for example, agricultural intensification through irrigation is viewed as an important leverage to alleviate food insecurity and increase rural income. The system-wide initiative for malaria and agriculture (SIMA) and other initiatives are underway to address this issue, which in turn will contribute towards progress to meet the ambitious millennium development goals (MDGs). Although policy guidelines exist to address health issues in the face of intensified agricultural production by means of irrigation, there is a paucity of practical evidence from different eco-epidemiological settings.

At the Centre Suisse de Recherches Scientifiques in Côte d'Ivoire, a research-cum-action project was carried out between 2000 and 2002. The aim of the project was to improve livelihoods of rural populations through intensive vegetable farming. Health and wellbeing of the farmers were taken into account, as was the societal acceptance of the project. We found a negative association between ill health (expressed as number of days prescribed sick due to malaria), and yield or gross revenue of vegetable production. A micro-economic analysis showed that malaria is responsible for up to 50% of losses of yield and benefits, explained by absenteeism during critical time points during the vegetation cycle. Out of 12 farmers, 4 abandoned intensive vegetable farming because of low revenues; these were also among the sickest farmers during the study period, primarily because of malaria. A conceptual framework has been developed which shows that an improved spending of project money to use the instrument "health care or prevention" to meet both social demands and improve farmers' health could be a valid development policy. Diseases of poverty such as malaria and other vector-borne water-related diseases can be an important factor causing low agricultural productivity. In fact, an irrigation project can result in a positive effect, i.e. agricultural production fuelling health care, or a negative effect, i.e. enhanced frequency and transmission dynamics delaying agricultural production through higher morbidity.

It is recommended that projects, programmes and policies simultaneously address both health issues and agricultural development, particularly when intensive agriculture is aimed for. Health impact assessment (HIA) holds promise to enhance positive effects and mitigate negative ones, and hence should become an integral part of projects, programmes and policies that aim for intensive vegetable farming. In areas where malaria is endemic, an integrated malaria control approach should be embedded into an agricultural development programme, consisting of vector control (e.g. biological, chemical and environmental control), reduction of man-vector contact (e.g. use of insecticide treated bed nets) and early diagnosis and treatment. An agricultural development project's success depends on many factors, of which many are not controlled by the project itself. Adding a health component can have a double effect, namely on the success of project participants, and on acceptance of this success by non-participants.

\* Prepared together with: O. Girardin (Fondation Rurale Interjurassienne, Courtemelon, Switzerland) and J. Utzinger (Swiss Tropical Institute, Basel, Switzerland).

Based on: O. Girardin, D.Dao, B.Koudou, C.Essé, G.Cissé, T.Yao, E.N'Goran, A.Tschannen, G.Bordmann, B.Lehmann, C.Nsabiama, J.Keiser, G.Killeen, B.H.Singer, M.Tanner, and J.Utzinger. 2004. Opportunities and limiting factors of intensive vegetable farming in malaria endemic Côte d'Ivoire. *Acta Tropica* 89:109-123