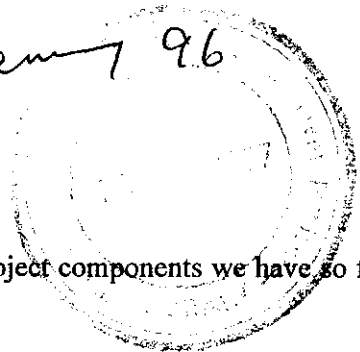


IIMI
G16-9362
10 G 744
KOP
as link to [unclear]

Malaria, health, [unclear]
[unclear]

Fleming 96



Doug,

Given below are a selection of major findings I have taken from the project components we have so far finalized under IIMI's health and irrigation activities:

The Household Cost of Malaria in Rural Sri Lanka

A study focusing on the household cost (direct cost) of malaria in five villages in a traditional tank based irrigation area in the Dry Zone (Hurluwewa Watershed). The survey also attempted to provide answers linked to knowledge and treatment seeking practices of the community. We have also attempted to estimate the indirect cost of malaria on the basis of working days lost and school days lost. This was done by monitoring 60 families (all families in one village in the Hurluwewa watershed) over a period of one year on the basis of bi-daily visits.

Major findings:

- The community had a high knowledge of malaria and sought prompt diagnosis and treatment at western type facilities: with 78% making use of government facilities as their first choice and 15% preferring private facilities;
- The most used preventive measures were burning of coils and special leaves and the majority of the families had their houses sprayed with insecticides;
- Malaria was ranked as the third most serious community problem following lack of water for cultivation and poverty;
- The total direct expenditure on a single malaria episode ranged from 0% to more than 10% of the annual household net income, with an average of 1.2%. In only one of the villages was a system of perspective incidence data collection established. In this villages each family had on average four cases of malaria per year. However, after studying the hospital records for the past ten years, this year [1994] appears to have been a year of low to moderate transmission.
- In a village of 305 people (only the permanent inhabitants were included) the total labor input into agriculture (including irrigation, chena, livestock rearing and home gardening) over a period of 12 months was 16,425 full working days with a highly seasonal pattern and with approximately 5% of the labor days provided by child labor (using the ILO definition). Only 74 days were spent on working outside the village. In comparison, 2,316 potential labor days was lost due to any form of illness among otherwise healthy individuals (days lost due to pregnancy were not seen as an illness since the community [the women] would not accept that these days were recorded as illness although they were unable to work; also people permanently disabled were not included). Of the total number of days lost due to illness 974 was owing to confirmed malaria cases. Of the 974 days lost due to confirmed malaria, approximately 450 were among economically active adults and 30 days were lost by economically active adults by caring for a family member sick with malaria. [Doug: during the next week or two I will be able to give you the financial loss linked to the labor days on the basis of the opportunity cost of labor. I have worked out an agricultural calendar with the farmers and know the actual wage rate used in the village (gender specific). We have divided the year into three periods: 1 = high agricultural activity (100% of wage rate); 2 = medium agricultural activity (50% of wage rate); and low agricultural activity (25% of wage rate). I will calculate the financial loss for each of the households to give a better picture than an overall average.]

1994-1995

Entomological survey

The first phase of a large scale entomological survey in the Hurluwewa Watershed has been analyzed. However, the most important findings and the design of environmental management interventions to control disease vector will be out during the next year.

Initial major findings:

- The analysis of the entomological data showed that in addition to the pools created in the stream (feeder canal for the Hurluwewa tank), the tank and the seepage area along the tank bund are the main breeding sites for the main vectors of malaria, *An. Culicifacies*. Other habitats such as chena, home gardens, forests, irrigation canals, drainage areas and rice fields were of minor importance for the breeding of the main malaria vector.
- The analysis shows that if the irrigation water diverted to the Hurluwewa tank through the feeder canal could be maintained at a constant level, avoiding pooling, then the breeding of the main malaria vector *An. Culicifacies* would be reduced considerably and the transmission period would be shortened considerably. We have followed the density of larvae in the feeder canal, the density of adult mosquitoes along the canal and the malaria incidences in a village next to the canal over a 19 month period. We were lucky in that the Irrigation Department managed the water very differently in the period we conducted the survey. In addition, the SCOR project apparently managed to prevent illicit pumping from the feeder canal during the dry season. The overall effect is that in one year we had pooling of water in the feeder canal in the dry season due to constant low water level which resulted in a high density of malaria vector and high incidences of malaria. The next year we had constant relatively high water levels in the feeder canal in the dry season (no pooling), almost no malaria vectors and very very low malaria incidences. We will now identify, with help from SCOR water level recordings, the critical minimum water level to be maintained to avoid the breeding of vectors.

Pesticide poisoning a major public health problem in Sri Lanka

An eight month KABP survey was carried out in Galnewa and Thambuttegama Divisions of System H including bi-weekly visits to 30 households, 30 key informants and participant observations. A hospital based survey was also included reviewing hospital in-patient record for four years. In addition, a literature review was undertaken with a focus on Sri Lanka.

Selected major findings:

- The incidences of serious acute pesticide poisoning in the Thambuttegama Division ranged from 2.6 to 2.9 per 1000 population between 1990 to 1994. *
- In 1994 pesticide poisoning made up 29% and 50% of all death reported at the Galnewa and Thambuttegama hospitals respectively.
- Currently, very little, if any, information on the use and hazards of pesticides is obtained from government institutions.

* Most patients were young adults and 70% were males. 68% was self inflicted (suicide) 19% due to spraying and 13% due to accidental ingestion among children

- The frequency of spraying is excessive by any agricultural standard. However, most standard safety precautions to prevent exposure to spraying are known to the farmers.
- Rather than repeating health messages that people already know and promoting practices that are not feasible, it would seem more effective to approach the problem of pesticide poisoning from an economic and agricultural angle. The financial risk to the families using pesticides are indeed very high. Every cultivation season high investments in agro-chemicals are needed, constituting a significant part of the yearly family income. Crop failure after these investments therefore has devastating effect on the family income leading to indebtedness.

February 19, 1996