

Case Study

Skin Problems of a farmer engaged in Water Morning Glory cultivation in Beoung Cheung Ek Lake, Phnom Penh, Cambodia.

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Beoung Cheng Ek Lake is a large water body of 3403 hectares located 5 kilometers south from the centre of Phnom Penh city. As a lake it receives 80% of the waste/sewage water from the city. People, who are living around the lake, mostly produce several types of aquatic vegetable, particularly morning glory (*Ipomoea aquatica*) and water mimosa (*Neptunia oleracea*). This lake is very important for the livelihoods of the local communities through activities such as aquatic vegetable growing and fishing. However, working daily in contact with wastewater in the lake, people, particularly aquatic vegetable growers are often affected by health problems, for instance wastewater related skin conditions which often occur in the end of hot dry season and at the beginning of rainy season (April to June) (PAPUSSA SOS report, 2002).

According to data collected from household interviews of the PAPUSSA Baseline and Monitoring surveys, results showed that almost all of the aquatic vegetable producers living around Beoung Cheung Ek Lake had been suffering from skin problems during past years. Therefore from July 2004 to May 2005, a three-round specialized study focusing on skin conditions of people exposed to wastewater in the lake was conducted by the National Institute of Hygiene and Epidemiology, Hanoi, Vietnam in collaboration with the Royal University of Agriculture, Phnom Penh and health experts from Denmark. As estimated, approximately 32 % of those who were interviewed in the PAPUSSA Baseline survey, 42 % of those who were interviewed in the 1st Monitoring survey (5th -31st July, 2004), 44 % of those who were interviewed in the 2nd Monitoring survey (November 8th to December 8th, 2004) and 62 % of those who were interviewed in the 3rd Monitoring survey (January 1st to February 4th, 2005) had had skin problems in the previous month to the survey. Farmers, who were reported to have had skin problems at the time of the special study, were then referred to dermatologists at the Cambodian Clinic for Dermatology, and STD unit Phnom Penh for physical examination and treatment. Data from the skin problems study as above mentioned is

now being processed at the National Institute of Hygiene and Epidemiology, Hanoi, Vietnam and will be analyzed and published at a later date.

In general, as interviewed, several local farmers said that they usually self treated themselves for these skin problems by using traditional methods such as using lemon, alum, moisturizing cream (Muôn Thuở, is Vietnamese name of the moisturizing powder). They mixed lemon, alum and moisturizing cream all together, and then spread the final mixed product on their hands, feet or any other parts of their body which were in contact with wastewater According to the dermatologists who examined referred patients in the skin problem study, the main signs of skin problems were itching, papules, and dry skin which commonly occurred to those growing morning glory in Beoung Cheung Ek Lake. Body parts mostly affected were the hands since hands were consecutively in contact with wastewater during each working day. Moreover, other body parts including feet, legs, arms, and trunk were also affected.



Mr. Ouk Makara is a 25 year-old water morning glory farmer in Kbal Tumnub village which is located on the banks of Beoung Cheung Ek Lake. He got married in 2000 and currently has 3 sons of five, three and one year old. Since 1997, he took over a morning glory field that his parents cultivated previously as well as currently renting an additional 2 hectare plot on Beoung Cheung Ek Lake near to his house. He earns his living mainly from cultivating morning glory and partly from fishing to support his 7 family members including himself, his wife, his mother-in-law, his brother-in-law and three



Harvesting Activities of Makara's family

children. All of his family members, except the three boys, share their responsibilities in different farming activities of morning glory cultivation such as field and raft preparation, overall maintenance, fertilizer and pesticide spraying as well as harvesting. Mr. Makara is responsible for almost all of the heavy farming work such as setting up poles for making rafts and spraying pesticides, whilst his wife and mother in-law are involved in maintaining and harvesting aquatic plants as they are much more vulnerable to the strong effects of pesticides (due to their current weak health status). Although his younger brother-in-law lives under the

same household roof he also owns a separate morning glory plot on the lake which he currently farms in order to earn and save money for his future family when he marries. Mr. Makara's household members can collect 300-400 bunches of morning glory per day (0.7 kg per bunch). However the amount collected depends on orders of the middlemen or traders who buy the morning glory from the farmers. He can receive 200 to 300 Cambodian Riel per bunch (0.05 to 0.075 US\$ per bunch) of morning glory sold to middle men.

Mr. Makara spends approximately 3 to 4 hours a day (3 to 4 days per week) for spraying pesticides on his crop. During spraying pesticides he only wears a mask to protect his face. Occasionally he spends 6 to 7 hours a day helping his family members to harvest but this does not happen often as he harvests morning glory slower than his wife and rented laborers.

Mr. Makara said that he suffers from health problems such as catching colds, exhaustion, itching, dizziness, etc. during and after pesticide spraying. The most common health problems which disturbed his work capacities were skin papules, scabs and itchiness as they caused him to stop working and stay at home when they became more serious.



Papules and scab problem on nape

His fingers and toes are affected seriously although he uses cloth gloves to cover his hands during processing and harvesting, Mr Makara said that his other family members also suffer from many kinds of skin problems such as tiny water blisters (vesicles), appearing itchy weals, general itching, sore fingernails and toenails, papules, and scabs, etc.

In general, there are 2 main causes of skin and health related problems for farmers around the lake: the first is spraying pesticides and the second is harvesting aquatic morning glory cultivated in wastewater. In the dry season (April to June), almost all farmers around the lake get more severe itchiness as they expose their body parts such as hands or legs directly to wastewater when the water levels in the lake goes down (since boats cannot be used in this season). Moreover, in the dry season, due to lack of rainwater dilution wastewater discharged from the city contains higher concentrations of pollutants including heavy metals

Similar to other farmers who are involved in morning glory farming Mr. Makara often treats himself by using lemon juice and the Vietnamese moisturizing cream for his skin problems. If

he then keeps himself out of contact with wastewater, his skin problems tend to disappear one week later. If not, he would then normally go and see a doctor at local village or National Clinic for Dermatology and STD, in Phnom Penh city.

When asked about the future impact of the morning glory wastewater production system on his health, Mr. Makara believed that his and other local peoples skin problems would become more exacerbated if no further measures were taken for the treatment of increasing volumes of contaminated urban wastewater, for instance applying preventative measures or regulation to reduce or eliminate industrial wastes discharged from the increasing numbers of factories being built around the lake. Finally, he added this increasing contamination of untreated wastewater would not only affect local peoples health but also is already being seen to adversely affect the growth and production of aquatic vegetables within the lake which is a very important source of income for many people living around Beung Cheung Ek lake.

References

Production in Aquatic Peri-Urban Systems in Southeast Asia (2/2003) State-of-the-System Report. Cambodia.