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Characteristics of pesticides and agriculture behaviors related to pollution of water in Kalpitiya and Walawa areas

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Walawa basin includes high agricultural potential areas and Kalpitiya has a heavy growth of vegetables and coconut. Both consume high amounts of fertilizers and pesticides. A study was conducted to understand the crop types, pesticide distribution patterns and ground water contamination potential pathways of pesticides in both Kalpitiya and Walawa areas.

63 and 162 farmers were selected and interviewed in Kalpitiya and in Walawa area respectively. In addition to coconut in Kalpitiya, Onion was the most common cultivation, which covers 35% of total cropping area. Further Chilies, cabbages, curry chilies were more abundant. Paddy, which covers about 48% of total cropping area, was the main crop in Walawa. Banana was over 20%. Other field crops are chilies, onion, sugarcane, etc.

Thirty-five chemical types of pesticides have been circulated in the selected area during the surveyed period in Kalpitiya. Chemical types that the farmers selected were profeneofos (62%), dimethoate (53%) and carbofuran (47%). In the Walawa area propanil is the most common, which consumes over 93%. MCPA (69%), carbofuran (64%) and pentoate (34%) were abundant. Weedicides were the most common in Walawa area, which covers over 47% of total chemical types, but very low usage of weedicides in Kalpitiya, which is about 4%.

In both areas 100% of farmers use irrigation systems like wells, tube wells or canal water. The knowledge about pesticides in farmers is very week and they use very poor handling techniques for pesticides. 57% of farmers didn't know the pesticides that they have used for their crops. In both areas farmers do not have any idea about occupational exposure or adverse effects of pesticides. Therefore they use over doses and apply in unsuitable time periods. Kalpitiya has sandy soils with high infiltration rates and Walawa area has soils with low organic carbon, which absorbs residues. Extra care should be taken when pesticides that have high water solubility (carbofuran 351 mg/L, dimethoate 2380 mg/L and propanil 200 mg/L) are used in these areas.

Financial assistance from International Atomic Energy Agency and International Water Management Institute is acknowledged.

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