



**Land-Water Linkages in Rural Watersheds
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Case Study 16

**Water quality and management in
peri-urban Kumasi, Ghana**

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INTRODUCTION

This short paper reports some preliminary results from an investigation of water quality and water use in the peri-urban area around Kumasi, Ghana. The issues focused on here are: 1) an assessment of the consequences of land use practices within peri-urban watersheds around Kumasi; 2) the implications of this for the downstream rural sub-catchment area; 3) development and implementation of 'good practice' guidelines to improve awareness and management of water resources.

Kumasi has a semi-humid tropical climate, with a total average annual rainfall of 1340mm (Cornish et al, 1999). The rainfall distribution is weakly bimodal, with a main peak between March and June, and a secondary peak in September to October. Kumasi itself lies across the top of a local watershed at approximately 280m asl. The terrain is moderately dissected (amplitude of relief up to 30m) with slopes commonly of 5° to 15°. Two subcatchments (one small – c. 35 km²; one larger – c. 200 km²) were identified which were representative of the range of environmental conditions and human activities in the Kumasi peri-urban zone. The headwaters of both these subcatchments are part-rural (though becoming urbanised) and part-urban. Twelve water sampling points were identified, in a range from predominantly rural, through more urbanised, to sites representative of urban pollution. Monthly water quality sampling was initiated at these points in September 1999. Eight villages were selected in the peri-urban area, close to these water quality sampling points, and a detailed questionnaire survey of water-related issues was undertaken.

With a rapidly-expanding city of approximately 1 million people (Government of Ghana, 1996), the principal land pressures are in the peri-urban zone, where agricultural land is gradually being converted to housing, predominantly one-storey private housing. Traditional authorities still continue to play a major role in the rural/peri-urban villages, particularly in respect of land allocation and land sales. Elected Unit Committees have responsibility for maintenance of facilities such as communal toilets and refuse dumps. These Unit Committees are as yet newly formed, and their functions appear to conflict to some extent with the specifically water-oriented Water and Sanitation Committees (WATSANs) which have also been set up in four of the survey villages.