Low-cost lime for small-scale farming in southern Africa

The occurrence of acidified soils in many developing countries often leads to poor crop yields, a situation that could be easily remedied if agricultural lime were used. However, subsistence farmers often fail to do so, in part due to lack of knowledge but also because agricultural lime is too expensive. Local production of low-cost lime from suitable carbonate resources within farming districts would improve the access of small-scale farmers to this valuable additive. The present study, which is being funded under DFID’s Knowledge and Research (KAR) programme, is focusing on the development of a small lime production facility in the farming area of Mkushi in Central Zambia using local dolomite resources. The project builds on an earlier study by BGS, also funded by DFID, which evaluated a number of Zambian limestone and dolomite deposits suitable for the production of cheap lime. In conjunction with the Zambian Geological Survey Department and the University of Zambia, tests are being conducted on grinding dolomite using an adaptation of a hammer mill designed originally for maize milling. The results of crop trials using local ground dolomite have shown a threefold increase in yields of maize from limed as against un-limed plots. The success of the hammer mill has prompted local entrepreneurs at Solwezi in NW Zambia to copy the design, with the result that agricultural lime production is now taking place there.

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Project leader, Clive Mitchell, inspects a crop of maize successfully grown with the application of locally produced ground dolomite in Mkushi, Zambia.

Photo: BGS, 2002