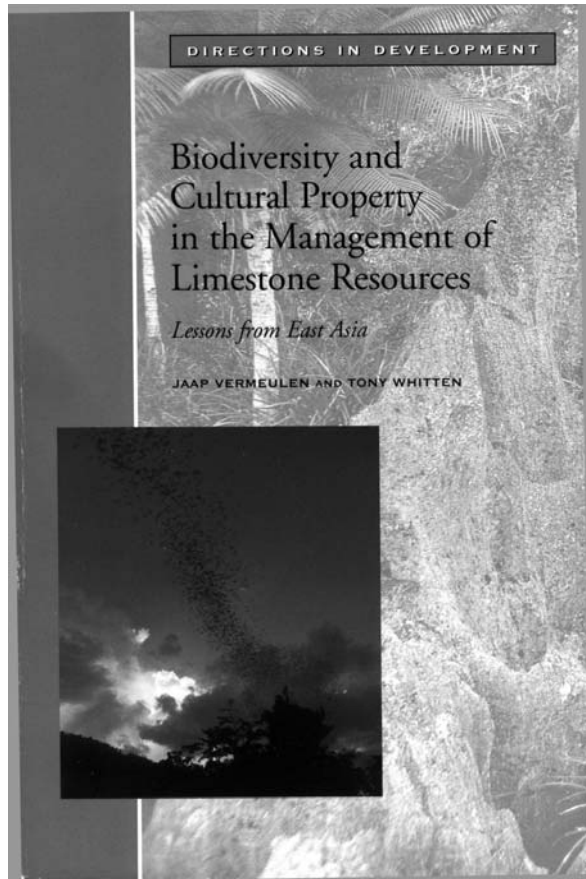


## A NEW LOOK AT THE DEVELOPMENT -CONSERVATION NEXUS

Reviewed by Elery Hamilton Smith\*

***Biodiversity and Cultural Property in the Management of Limestone Resources.*** Directions in Development series, The World Bank, Washington. Vermeulen, Jaap and Whitten, Tony. 1999. x + 120pp.

This publication is available from the World Bank for \$US 22.00 plus packing and postage. See the Web-page [www.worldbank.org](http://www.worldbank.org) (click on publications), or order from <books@worldbank.org> or fax your order (pay by credit card) to 0015.1.703.661.1501.



Cement plays a vital part in the development of modern infrastructural and urban construction. At this point in time, there is no feasible alternative. Inevitably, the quarrying of limestone for cement manufacture (and other purposes) will conflict with land conservation to at least some extent. This publication represents a major step forward in re-consideration of the basis upon which quarrying is to be planned, and although directed specifically to East Asian countries, it introduces principles of world-wide relevance.

It grows out of a consultative process established by the World Bank, and implemented in partnership with the International Union for the Conservation of Nature. A number of scientists were involved in preparing drafts from which the final report might be compiled, in discussions of the issues at a meeting held during January and/or in reviewing and commenting upon draft documents. Importantly, they were joined by representatives of major cement companies who also provided very positive input to and support for the project.

A review of previous environmental assessments in the region demonstrated that the distinctive character of karst, particularly in relation to biodiversity and cultural values has not been considered. Only one referred to aesthetic and wilderness values. Currently developing World Bank policies now address this problem, and support '... protection, maintenance and rehabilitation of natural habitats and their functions ... and expects borrowers to apply a precautionary approach to natural resource management ...'

Much of the volume is devoted to a state-of-art summary of knowledge about karst processes and landforms, the distinctive biodiversity of karst areas and the other values of karst. One of the most interesting chapters in this section details the non-quarrying economic benefits of karst, which in tropical regions may be considerable. Many of these relate to the diverse economic benefits provided by an intact eco-system, but tourism may also be of great value and benefit.

The ways in which quarrying has negative consequences are described at length and include dust deposition, impacts of blasting, partial or total destruction, fire, disruption of groundwater movements, siltation or chemical pollution of the aquifer, environmental damage as a result of worker migration onto the karst area, including hunting and collecting. The vulnerability of karst is the subject of a further chapter.

Finally, a series of proposals are presented dealing with impact assessment practices, site selection, the role of the Clean Development Mechanism under the Kyoto protocol, mitigation of impacts, and rehabilitation and reconstruction of sites. One can only say that if the practices advocated here had been observed in Australia, both the cement companies and the conservation movement would almost certainly have been spared both considerable environmental damage and some extremely costly conflict over the past 30 years. One can only hope for better standards of practice in the future.

Perhaps one of the important conclusions is that the cement industry is definitely one where "bigger is better". Only a large and professionally managed company has the necessary capital to properly carry out the essential investigation and planning before commencing operation, to operate with proper dust suppression and pollution

control, and to ensure satisfactory restoration on the decommissioning of any quarry site.

The one criticism that might be voiced is that this review concentrates entirely on the supply side of the equation, and no consideration is given to the ways in which demand for cement might be reduced. However, it is an extremely timely

publication, and one that deserves to be very widely read by those concerned with and involved in both the management of limestone-based industries and land conservation.

*\*Elery Hamilton-Smith is chair of the IUCN Working Party on the Protection of Caves and Karst.*