

## Rock anchoring in Karimun Jawa, Indonesia: Ecological impacts and management implications

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CORAL reefs everywhere are under increasing pressure from a suite of stressors. Recently, threats associated with climate change have been brought closer into focus and now dominate discussions and debate relating to the coral reef crisis (Hughes *et al.* 2003, Hoegh-Guldberg *et al.* 2007). Indeed, mitigating local stressors on coral reefs has been given less priority and publicity than the global need to reduce greenhouse gas emissions. Interestingly though, recent

surveys demonstrate that most reef scientists agree that coral reefs are under greater threat from impacts associated with human population growth, coastal development, and overfishing than from global climate change (Kleypas and Eakin 2007). This is especially true for the reefs in SE Asia and the Pacific, which make up the bulk of the reefs in the world (Bryant *et al.* 1998). In these areas, regulations to ensure that anthropogenic activities near and on coral

reefs are conducted sustainably, such as development, sanitation, fishing and even tourism; either do not exist or are rarely enforced due to a lack of resources. Here, we present one such example from Indonesia, one of the most densely populated countries in the world—a country where over 60% of the population relies in some way on marine resources.

Karimun Jawa Marine National Park is an archipelago area that includes 27



Fig. 1. Abandoned rock anchor (a) and characteristic scar (b). Scale bars equal 30cm.