Land tenure security has little influence on the agricultural productivity of smallholder oil palm growers in Papua New Guinea

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In agriculturally suitable areas of PNG there is a high demand for access to customary land by land-poor migrants from remote and poorly-serviced rural locations and by companies seeking to establish large-scale agricultural developments. Shortages of state land and land under freehold title mean that migrants and companies are entering into a range of agreements with customary landowners to access land. In PNG, as in most developing countries, there has been a significant push for the registration of customary land underpinned by the notion that successful development can only occur when people hold title to their land and are able to use these titles as collateral for bank loans. It is commonly assumed that without secure individual title to land, agricultural productivity will be low. We examine this argument through a study of smallholder oil palm productivity under three different tenure regimes in declining order of tenure security: smallholders with 99-year leases on state land (6-ha blocks); village oil palm growers using their own customary land (2-ha blocks); and migrant producers using informal arrangements with customary landowners (2-ha blocks). We show that there is little relationship between tenure security and productivity. We argue that new approaches to land tenure reform can be found that both meet the changing demands on customary land and move away from previous failed land reform initiatives based on the notion that secure individual property rights through land titling are a prerequisite for building a modern economy.

The use of a multiple criteria analysis to identify translocation sites for the Critically Endangered Western Swamp Tortoise (Pseudemydura umbrina)

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Climate change is a severe threat to biodiversity as many species are unable to shift to more climatically suitable areas due to poor dispersal ability or geographical barriers, increasing their extinction risk. One possible solution is assisted colonisation: translocating species to climatically suitable sites outside their historical range. Identifying suitable translocation sites requires the consideration of multiple habitat criteria, which can be done using a Multiple Criteria Analysis (MCA), an evaluation method that ranks sites based on criteria. This study used a spatially explicit MCA to identify potentially suitable sites for the assisted colonisation of the Critically Endangered Western Swamp Tortoise (Pseudemydura umbrina), a species threatened by climate change. The current natural range of this species is limited to two small reserves on the outskirts of Perth, in the South West Bioregion of Western Australia. Expert knowledge, a visit to known P. umbrina habitat and a review of relevant literature were used to determine habitat and socio-economic criteria and their relative importance to a successful translocation. With these criteria, a suitability index was created using Geographic Information Systems showing the degree of habitat suitability across the South West Bioregion. A selection of suitable sites were then ranked using weighted summation. The most suitable sites were 150-250km south of the current P. umbrina range, in areas of high landscape connectivity and low human population density. Careful use of MCA, taking into account uncertainties in available data and differences in expert opinion, can be a valuable tool when evaluating the potential for new locations to support threatened species.