IMPACT OF DIFFERENT FUNCTIONAL CRAB GROUPS ON PROPAGULE RECRUITMENT AND MANGROVE FOREST STRUCTURE

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The structure of the mangrove ecosystems is affected by various abiotic factors (temperature, salinity, nutrient availability, tidal range, topography, etc.) and biotic factors (intra and inter-specific competition, fauna, anthropogenic pressure etc.) (Lee, 1999b). Faunal impact is largely due to the crab activities (Cannicci *et al.*, 2008). Some authors refer to 'crabs' as mangrove ecosystem keystone species (Smith III *et al.*, 1991; Schories *et al.*, 2003). They contribute actively to the forest structure through two activities: the activity of 'engineering' (Bartolini *et al.*, 2010) and herbivory behaviour (Schories *et al.*, 2003). Burrows and galleries in hypoxic or anoxic soils allow a better soil oxygenation and increase the bioavailability of nutrients such as nitrogen and phosphorus (Smith III *et al.*, 1991). In addition, some families of herbivorous crabs are known to be a threat to natural and artificial mangrove regeneration (Dahdouh-Guebas *et al.*, 1998) and a regulator of competition in high stand density areas (Bosire *et al.*, 2005), both through consumption of mangrove propagules and juveniles. We focus this ongoing study on the interaction between herbivorous crabs (Sesarmidae), detritivorous crabs (Ocypodidae) and mangrove propagule settings and growth abilities in Gazi Bay, Kenya. Two hypotheses are central: herbivorous crabs influence the structure of mangrove forests by selecting and consuming propagules. Scavengers and herbivorous crabs lead to biogeochemical changes by the construction of burrows and the recycling of organic soil matter. These biogeochemical changes will profoundly influence the structure and the health status of the mangrove forests. We found that herbivorious crabs are not homogeneously distributed and that their distribution is correlated with vegetation structure. Although propagules pulled into burrows are considered predated and lost, we observed that part of these buried propagules did germinate after two days under *Avicennia marina* cover and after 6 days under *Ceriops tagal* cover. We found that one propagule out of five on average germinated despite its being below-ground. This prompts us with the question whether or not predation can also be a positive regulator of mangrove regeneration, rather than a negative.

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