Effect of Salinity on Nutrients Uptake and Productivity in *Avicennia marina* (Forsk) Vierh. and *Rhizophora mucronata* Lam along the Coast of Dar es Salaam, Tanzania

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Salinity increase has an effect on nutrient uptake by mangrove plants that can cause poor productivity and growth. Increase in salinity in marine environments has been predicted as one of the impacts of climate change. Understanding the effects of salinity increase on the uptake of nutrients particularly those which limit growth in mangrove such as Nitrogen (N) and Phosphorus (P) may assist in developing guidelines for mangrove conservation that promote mitigation measures against climate change. The effect of salinity on N and P uptake in *Avicennia marina* and *Rhizophora mucronata* was investigated in and ex situ over eight months by measuring productivity as a function of stomatal conductance and growth by establishing plant height, number of leaves and dry weight. In situ plots of seedlings of both species were established at two different locations along the coast of Dar es Salaam, Mtoni Kijichi and Mbweni mangrove forests. Nutrients (N and P) uptake was recorded at salinity levels ranging from 4 ± 0.8 to 26 ± 1.3 psu for Mtoni Kijichi and 35 ± 2.3 to 61 ± 3.2 psu for Mbweni. Ex situ treatments of seedlings of A. marina and R. mucronata at salinity levels of 0, 10, 20, 30, 35, 40 and 50 psu indicated nutrient uptake to be best at salinity of 19 ± 0.6 - 20 psu for A. marina and 10 – 11 ± 1.3 psu for R. mucronata. Uptake of N and P, productivity and growth in the mangroves was found to be high at moderate salinities suggesting the projected increases of salinity due to climate change may affect nutrients uptake and ultimately poor mangrove productivity and growth along the coast of Dar es Salaam, Tanzania.