

CHAPTER 5 CONCLUSIONS AND SUGGESTIONS

5.1 Conclusions

1. From this study, it may be inferred that salinity significantly impairs *A. corniculatum* propagule germination but not seedling growth. Salinity up to 15 ppt might be thought of as ideal for *A. corniculatum* in Pakistan, both for germination and growth. It is advised to utilise nursery produced seedlings of the species when planting it in severely salinized places because *A. corniculatum* seedlings may tolerate greater salinities well. *C. tagal* showed a progressive increase in tissue water and osmotic potentials with increase in salinity of the medium as similar to *tomarina*, indicating that it follows an osmoconformer strategy to maintain its osmotic balance. This may indicate that low carbon assimilation and low water-use efficiency could be the reason for reduced growth in *C. tagal*.
2. The decline in fresh water and silt supplies to the Indus Delta over the past 50 years is strongly correlated with the extinction of mangrove species. The rise in the volume of untreated residential and industrial wastewater discharges from Karachi and its surroundings is likewise associated with the loss of mangrove species. Domestic industries are noncompetitive and have inefficient production and post-production technology and processes because they have continually been shielded from international competition. Additionally, international dredging regulations are completely disregarded when port channel dredging is being done. Mangrove development has been hampered by the current amount of marine pollution in the Delta, which is expected to extend to Somiani in Baluchistan and constitutes a persistent danger to biodiversity.

5.2 Suggestions

1. EPAs should conduct environmental impact assessments on a regular basis and publish the results in an official manner to support the mandatory efforts to raise public awareness about the environment and promote research.
2. Reforms must be developed to encourage collaboration between the Department and coastal communities in order to ensure the effective preservation and conservation of mangroves, based on consultations with department employees and local community members.
3. Dredging activities need to be closely supervised by organisations like EPAs rather than port authorities in order to prevent conflicts of interest and ensure strict compliance with the International Dredging Convention, to which Pakistan is a party.
4. Foreign investments should be evaluated taking into consideration the entire costs of potential environmental damage, especially those that may have an impact on the mangrove ecosystem. In-depth scientific investigations on the following concerns should be done in light of the complexity of the issue of biodiversity in marine ecosystems and the knowledge gathered thus far.
5. The Indus Delta and the Baluchistan Coast mangroves' adaptive behaviour in the face of the technological, economical, and environmental changes in the coastal areas; the quantity and distribution of fresh water that mangroves need.
6. The "willingness to pay" of coastal populations for alternative fuel sources for household use, institutional variables at local, national, and international scales, and the causal relationship between various institutional processes that impact biodiversity in the mangrove environment.