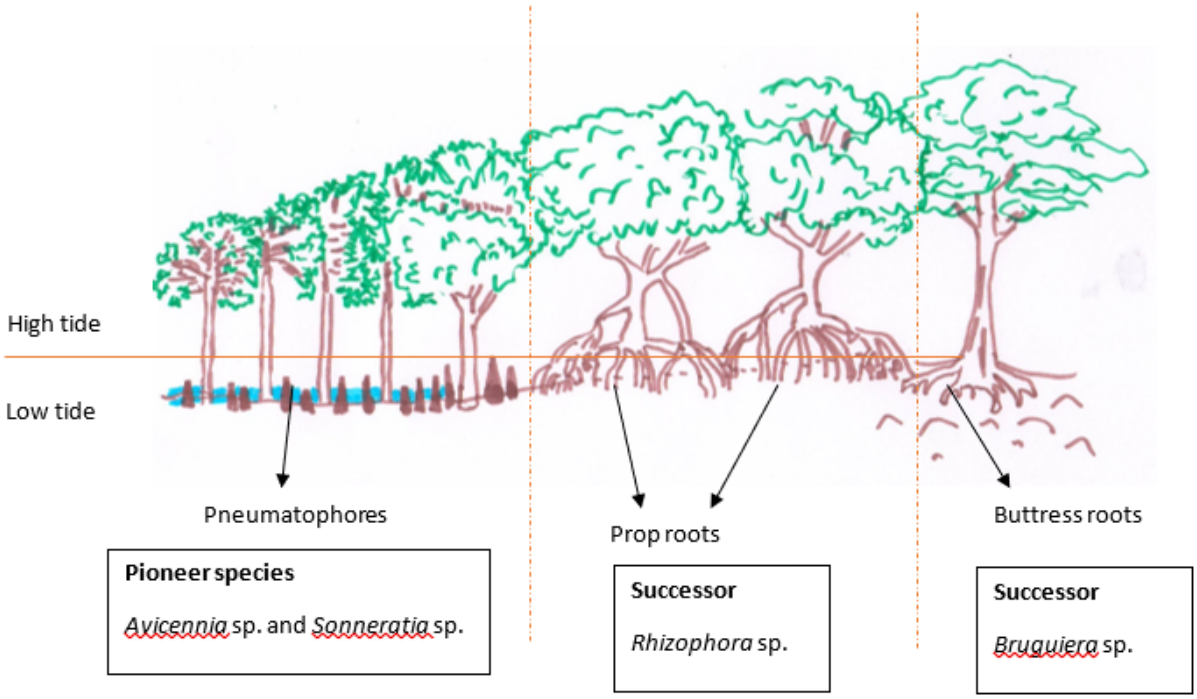

***Figure 7** - Colonisation and Succession in mangrove trees area*

Coastal zone

- Most exposed to big waves.
- **Pioneer species** that can be found in this zone are *Avicennia* sp. (*Api-api* tree) and *Sonneratia* sp. (mangrove apple).
- The roots branch out and pneumatophores help to trap mud and organic substances from the high tides.
- This causes the accumulation of mud over time. The soil becomes higher and denser.
- *Rhizophora* sp. Is the new successor and will replace the pioneer species.

Middle zone

- Situated along the river, closer to the estuaries.
- *Rhizophora* sp. (*bakau minyak* tree) can be found in this zone.
- *Rhizophora* sp. have tangled prop roots to trap mud and twigs as well as blocking water flow.

- This causes sedimentation. The river bank becomes higher and dry as it is less exposed to high tides.
- The soil is now not suitable for the growth of *Rhizophora* sp., being replaced by *Bruguiera* sp. (successor).

Inland zone

- Situated further into the land.
- The soil is higher, harder and only flows with seawater during high tides.
- *Bruguiera* sp. can be found in this zone.
- The buttress roots of *Bruguiera* sp. will trap more mud and silt.
- Sedimentation will form a new swamp that projects out towards the sea.
- The shore gets further away from the sea. The ground changes into a land. Trees like *Nypa fruticans* and *Pandanus* sp. start to grow and replace the *Bruguiera* sp.