It is long established that the East African Coastal Current flows northward along the coast of Tanzania throughout the year. However, uncertainty has long existed as to the influence of this current in the Zanzibar Channel. Victims of various capsized vessels within the channel have been picked up both to the south and north of the accident site depending on the monsoon period. Current monitoring and measurements have recently been made in the Zanzibar Channel with the view to understanding the flow structure within the channel. In the first campaign measurements were made during both the Northeast and Southeast monsoon periods along a cross-channel transect using a lowered an Aanderaa RCM9 current meter. In the second campaign an upward-looking acoustic Doppler current profiler (ADCP) was deployed at one station for 2 years to capture variations in the current profile over both monsoon periods. In the central, deeper part of the channel the current was found to flow northwards at all depths during the Southeast monsoon period with surface velocity of 0.5 ms^{-1}. During the Northeast monsoon period, however, the current was found to flow southwards at the surface while a northerly flow continued close to the bottom. Away from the central part of the Channel, the 2 year ADCP data showed that the flow was northeastwards throughout the water column and reversed during the Northeast monsoon months of December, January, February and March. The surface flow direction around coral islets and sandbanks varied depending on the location and the stage of the tide. The findings suggest that the current in the channel may be considered to be a small part of the East African coastal current that flows northwards, but it is reversed by the Northeast monsoon in the upper layers.