Morphologic features obtained from SRTM data, integrated with geologic information, are emphasized in this paper in order to provide the basis for understanding the development of the lowest Amazon drainage basin, focusing on the history of one of the largest Amazonian tributaries, the Tocantins River, and on the origin of the Marajó Island, throughout the Quaternary. This approach led to the recognition of a fan morphology related to the record of a tectonically controlled N/NW-S/SE orientated paleovalley cut down into Miocene and older rocks. The incised valley was fed by a paleo Tocantins River, which deposited its sediment load continuously to the north-northwest, reaching the Marajó Island and producing a deposit displaying a fan-morphology during the Plio-Pleistocene/Pleistocene. As characterized in the SRTM images, this channel system became abandoned due to capture by NE-SW orientated faults and establishment of the Pará River by W-E strike slip movements. This event, which probably took place in the Mid-Holocene, was responsible for detachment of the Marajó Island from the mainland.