



Recent dynamic change of the tributaries of the Niger river in Sahel

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In the region of Niamey (Niger), the Niger river is subjected to recent important morphodynamic changes, because of the increasing activity of numerous tributaries (“koris”, haoussa term for oued). These seasonal tributaries, recently formed, are responsible of an important increase of the sediment supply in the Niger river near Niamey (Niger), they provoke an important sedimentation in the river bed.

The first aim of this study is to highlight the koris evolution and its impact on the Niger river. The second part of the study consists of the determination of factors explaining this recent evolution. External factors (mainly rainfall frequency and intensity) and human impacts (mainly land use changes) are investigated.

Different methods are carried out at different spatial and temporal scales: i) water and sediment measurements are conducted during the floods in the koris; precise topographic surveys allow the quantification of the sediment remobilisation in the kori bed and on their alluvial fan; ii) A rainfall statistical study is also realized to determine the possibility of an increase in extreme rainfall events; iii) at the koris basin scale, on the basis of aerial pictures and satellite images, diachronic analyses are conducted to determine the evolution of the landscape. It appears that the main factor is the soil use change. In the 1950's cultivated areas represented 10% of the Sahelian territory. Today, those areas are almost entirely cultivated. In the koris basin, these changes generate runoff and soil loss increases.

Keywords: Niamey region; endoreic; koris; Niger river; human impacts: extreme rainfall events; soil use change