

Vendus. A landform of Guinea-Bissau

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Abstract

The Republic of Guinea-Bissau (GB) presents some remarkable geomorphological features such as temporary lakes locally called vendus, meandering rivers, boual / bowal plateaus (hard and dry laterite and bauxite flat surfaces), laterite on successive planation surfaces, collapsed Fe-duricrusts, slope deposits, and finally the Bijagos delta.

Vendus are well represented in the 1953 to 1966 old colonial topographic maps scale 1:50,000 and others were identified during fieldwork conducted as part of the edition of the Geological Map of Guinea-Bissau scale 1:400,000 (LNEG and DGGM, as geological surveys of Portugal and GB). These seasonal lakes only occur in the eastern part of the country and the name vendu, a word from the fulbe (fula) dialect, was adopted as this is the main ethnic group on that area.

Temporary pools where cattle and other animals drink and people go fishing are reported in many countries of Africa and they present some resemblance to vendus but only apparently. The vendus are peculiar landforms and do not present all the characteristics that pertain to most depressions or pans described by other authors, like dambos, claypans, saltpans, cuvettes, mares, and so on. The vendus in GB were briefly referred to by portuguese authors in the middle of the twentieth century as temporary lakes occurring on depressions formed on iron duricrusts, with a muddy bottom impermeabilizing it. The terms “wendous” or “vendous” have been used by Y.Boulvert for the Bové country and the Fouta Djalon and by P.Michel for Senegal, present some similarities to these vendus.

Field work was conducted on 33 of the 71 vendus known in GB. They only occur in eastern GB, on thin Cenozoic formations over a Paleozoic or Neoproterozoic basement and their distribution follows a pattern, evidencing the tendency for positioning on N30°-40°E lineaments. Only 20 % of the vendus include outcrops. Vendus form essentially in areas of low relief or no relief at all, generally planations, with evidence of widespread laterites in the vicinity, although frequently only lateritic gravel is observed on excavation and sampling. They occur as flat concavities on the landscape with nearly no vegetation, as generally only high grass grows up, contrasting strongly with the surrounding savana forest. Vendus present no termite mounds probably due to the 3 to 4 months long water that fills them during the rainy season. The border of the vendus is well marked by a small step less than 1 m high and the interior is flat, exception made to a very small area up to 1 m deeper that keeps water longer into the dry season. The vendu density, although irregular, goes from about 7.2 to 15 per 1000 km² and their size is bracketed from 0.1 to 188 ha; for the 45 vendus larger than 6 ha the average area is 31 ha.

The main genetic processes probably involved in vendu formation include cracking and weathering along discontinuities and iron dissolution, suggesting a pseudo-karstic process. Another condition is the prevalence of a tropical or sub-tropical monsoon type climate. The current reduction of precipitation in the region may already be leading to the reduction of the area of some vendus.