

Using remote sensing free software in scientific research

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In an information society that is increasingly using new technologies, the software becomes a challenge not only technical and economic but also social. Since 1984, a phenomenon has emerged: that of free software. The interest of our work was to design and develop in the laboratory a decision support in the field of environmental management. This skill is effective and should be simple and easy to transfer, based on free software of remote sensing specifically GRASS, R, and Mapwindow. In fact, these free software have provided us solutions suitable. Because the world of free software is highly reactive, free software parks accommodate heterogeneous, open-source software are becoming more mature and many open source software are free. It should be noted that free software can be tailored to the needs of research centers. It is possible to use code source or libraries already existing, modify and to integrate them into new scientific research projects or work students. The motivations to adopt free software correspond to the objectives of developing countries, namely economic, sharing and collaboration.

The choice of software was made on the basis of scientific interest, mapping and environmental management. The site of study is a transition zone between the arid areas of Burkina Faso and Mali and a few hectares of tropical forest in the Gulf of Guinea. Its natural environment presents these major aspects: a climate in two seasons with a rainy season, and rugged terrain dominated by plateaus, with some crystal domes, desert shrub vegetation dotted with patches of dense forests and forests around galleries watercourses. Based on satellite images SRTM and Landsat, we have with the software mentioned above made the mapping of our study area namely, watersheds, river system, order of rivers, land and geology.

Keywords: remote sensing, linux, free software, methods of multicriteria decision support, statistical and geostatistical, environmental management, information system, education.