Geolocalização de reservatórios/bacias hidrográficas

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Portugal's geographic location, type of vegetation and global climatic condition dictated a new era with regard to environmental and social catastrophes, particularly forest fires, which makes efficient planning and management of available water resources indispensable. This need for efficiency in management is a priority in the months of warmer characteristics, when there are conflicts of water use, and also due to climatic factors that accentuate the losses due to evaporation. At this stage, it is necessary to have accurate and constantly updated geographical information. Knowledge of the existence and location of surface water storage can be extremely useful in fighting fires. The digital processing of images obtained through remote sensing allows a quick and rigorous update of the surface storage inventory. The satellite navigation systems currently available allow the integration of various types of information, in addition to geolocation, which allows a huge advantage in emergency situations, in which it is necessary to decide in real time where to supply vehicles and aerial means of combat to fire. These geographic information systems provide the user with the locations of the reservoirs closest to their area of intervention, their metric area and water availability. Through digital processing techniques and using high-resolution satellite imagery from the European Space Agency Sentinel-2, it is possible to perform the automatic delimitation of artificial reservoirs and natural water bodies existing in a given region and time, store these data in a geographic information system and make them available later in various types of formats, and can also be used in GPS receivers installed in fire fighting vehicles or helicopters. The European satellite Sentinel-2 acquires images with a revisit period of 5 days, thus allowing a quick update of geographic information, essential for planning strategies in places where water reservoirs in hot seasons are consumed in a few weeks due to use and / or fire fighting or evaporation phenomena.

PALAVRAS-CHAVE

Water bodies, wildfires, Digital Image Processing, Geographic Information System

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