# REMOTE SENSING AND MAPPING OF VEGETATION COMMUNITY PATCHES AT GUDONG OIL FIELD, CHINA: A COMPARATIVE USE OF SPOT 5 AND ALOS DATA

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**Abstract:** It is extremely common and objective fact that the vegetation was damaged and subsided by Shengli Oil Field development in the Yellow River Delta (YRD). But few reports were focused on the extending phenomenon of vegetation caused by oil field development. In fact, the extending phenomenon of vegetation community caused by seismic exploration has been found in the many areas of YRD. From the ecological role, such extension of vegetation caused by oil field development is beneficial to the ecological restoration and protection and re-vegetation of YRD. This vegetation extension, obviating the need for additional funds, is necessary to lucubrate, and look for the countermeasures which make it change from spontaneous state into artificial coordinating for maximum extension in the suitable areas, which will help to better coordinate the contradiction between the oil field development and the wetland ecosystem protection. In order to facilitate the monitoring of vegetation extension and quantify the mechanism of vegetation patch succession, there is a clear need for accurate and economical of detecting the different structures of vegetation patches. Circular or elliptical vegetation community patches resulted from seismic exploration of Shengli Oil Field occurs widely across the Yellow River Delta in China. This paper compares the efficacy of SPOT 5 and ALOS data in detecting vegetation community patches at Gudong oil field, China. As a result of highly correlated reflectance among the spectral bands provided by each sensor, canny edge detector and mathematical morphological methods were employed. SPOT 5 data (2.5 m Ground Spatial Distance or GSD, detection accuracy, 91.2%) proved more effective in vegetation community patch delineation than ALOS data (2.5 m GSD, detection accuracy, 89.3%).