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Seubert, C. E.; Kristoff, S. J.; Baumgardner, M. F.; Kissou, R.; and Lund, L. J., "Land Use Potential Survey of the Seguenega Area of Upper Volta, Using Landsat Data" (1980). *LARS Symposia.* Paper 391.
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Reprinted from

Symposium on Machine Processing of Remotely Sensed Data

and

Soil Information Systems

and

Remote Sensing and Soil Survey

June 3-6, 1980

Proceedings

The Laboratory for Applications of Remote Sensing

Purdue University
West Lafayette
Indiana 47907 USA

IEEE Catalog No.
80CH1533-9 MPRSD

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LAND USE POTENTIAL SURVEY OF THE SEGUENEGA AREA OF UPPER VOLTA, USING LANDSAT DATA

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The Seguenega area is a densely populated area of approximately 1500 km^2 in the southeastern part of the Yatenga region in northwestern Upper Volta. Agriculture and livestock herding are the principal occupations of the inhabitants of this semi-arid part of the sub-Sahel.

Africare has contracted with the Agency for International Development (AID) to institute an Integrated Rural Development Project in Seguenega in cooperation with the Organisme Regional de Developpement (ORD) of Upper Volta. As a part of this effort Africare requested that the Laboratory for Applications of Remote Sensing at Purdue University assist them in producing a base map to use in developing land use potentials in the Seguenega region.

Landsat-2 MSS data collected on 31 March 1976 were utilized for this study. The MSS data were geometrically corrected (rotated, deskewed and rescaled to approximately 1:20,000). Nineteen separable classes were identified in the Seguenega area using a nonsupervised clustering program which sampled two percent of the area. The entire area was then classified using a LARSYS minimum distance classification algorithm.

Spectral maps developed from the classification results were used in making ground observations in the Seguenega area. Because of the lack of readily identifiable features such as roads, rivers and lakes and other ancillary data, such as detailed topographic maps or air photos, it was difficult to locate good ground control points. However, using the spatial characteristics of the Landsat classification maps, it was possible to subjectively relate groupings of the nineteen spectral classes to six groups representing soil, water and vegetation cover types. The final product was a 1:20,000 map representing six land cover classes from which interpretations of land use potential can be made.