SCALE 1:2 000 000

Lambert conformal conic projection
Standard parallels: 29° and 34° N.
Ellipsoid: spheroid

Images recorded by the Landsat Multi-Spectral Scanner in the multispectral mode, composed of spectral bands:
1. 0.5–0.6 µm, yellow-green),
2. 0.6–0.7 µm, red), and
4. 0.8–1.1 µm, near-infrared), printed in the yellow, red, and blue sequence.

These Landsat Multi-Spectral Scanner (MSS) satellite image maps of Pakistan were developed to provide base maps for the compilation of geologic and geomorphic data in support of the Coal Resource Exploration and Assessment Program in Pakistan (COAL-PEAP), a cooperative program which was funded by the United States especially for International Development (USAID). Because of the extent of the country area, 72 Landsat scenes are needed to cover it, and because of budgetary constraints, older, less expensive Landsat-MSS were utilized.

The Landsat scenes were selected from images available at the Eros Data Center (EDC), Sioux Falls, S.D. In the selection process, preference was given to cloud-free and snow-free scenes which display the most stage of morphological development of the map surface. Unfortunately, the matching of neighboring scenes is not always possible. This is especially true in mountainous areas where patches without cloud and snow cover are rare and limited to a part of the Autumn season, and where the appearance of the terrain between neighboring scenes changes rapidly as snow cover may have fallen between their respective dates.

The data of the MSS scenes, originally of 185 scene resolution, were geometrically corrected and digitally transformed into Lambert conformal conic projection, using 50 control points whenever possible and the cubic convolution algorithm having the minimum rotation and resampling. The data were also normalized to zero large data-base errors, in 1982, even as the best of the remaining telecommetry capacity. The 50-meter pixels under the publication of such geocorrected data possible at the 1 : 250 000-scale; however for cost considerations and for convenience, it has been printed at the 1 : 500 000 scale. The resulting publications are mosaics in seven quadrangles, which were revised according to the most sensitive or regional area covered. The 30-meter data were averaged in 120-meter pixels to generate the existing image map as one sheet at the 1 : 1 000 000-scale.

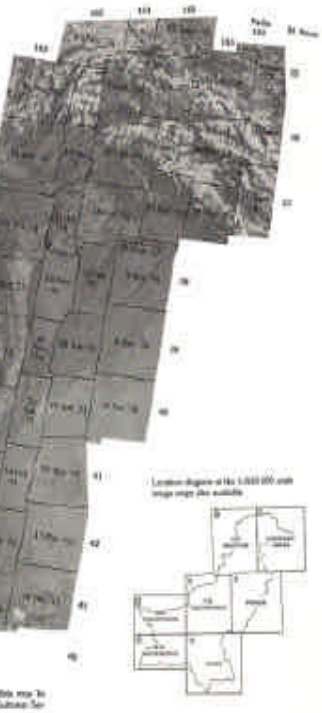
Originally the image maps were controlled at digital data or color photographic prints distilled by manual geometrical use in support of the ground acquisition of CONUSENE which ended in 1994. Subsequent requests from the public for the volumes of the geocorrected image maps and their digital data led to the publication of these maps through a USGS open sales possible by an internal program for handling value added product development.

LAND COVER INDICATORS

Colors generally relate to typical features as follows:

Black ..... Shadow areas or steep slopes away from sun
Light blue ..... Ice fields, shallow or turbid waters
Greyish light blue ..... Alluvium
Red ..... Growing crops, grass and woodlands
Reddish brown ..... Corolla forests and well mountain
Green, greenish ..... Soil and rock outcrops with sparse vegetation
Yellow ... Reddish soils, sand dunes or rock outcrops with sparse vegetation
White ..... Snows, playas, salt crust and similar light colored soil or rock

LANDSAT SCENES INDEX



Location diagram of this 1:500 000-scale image maps also available

Information on indexing, cost, and availability of Landsat data may be obtained from U.S. Geological Survey, EROS Data Center, Customer Services, Sioux Falls, S.D. 57198, USA.

Technical information about this image map may be obtained from Mail Stop 567, U.S. Geological Survey, National Center, Reston, VA 22092, USA.

This image map is not an authority on the delineation of international boundaries.

For sale by U.S. Geological Survey, Denver, Colorado 80225

PAKISTAN