PAKISTAN

SATELLITE IMAGE MAP

SCALE 1:2 000 000

25 0 25 50 75 100 125 150 175 200 KILOMETERS

Lambert conformal conic projection.
Standard parallels: 26° and 34° N.
Everest spheroid.

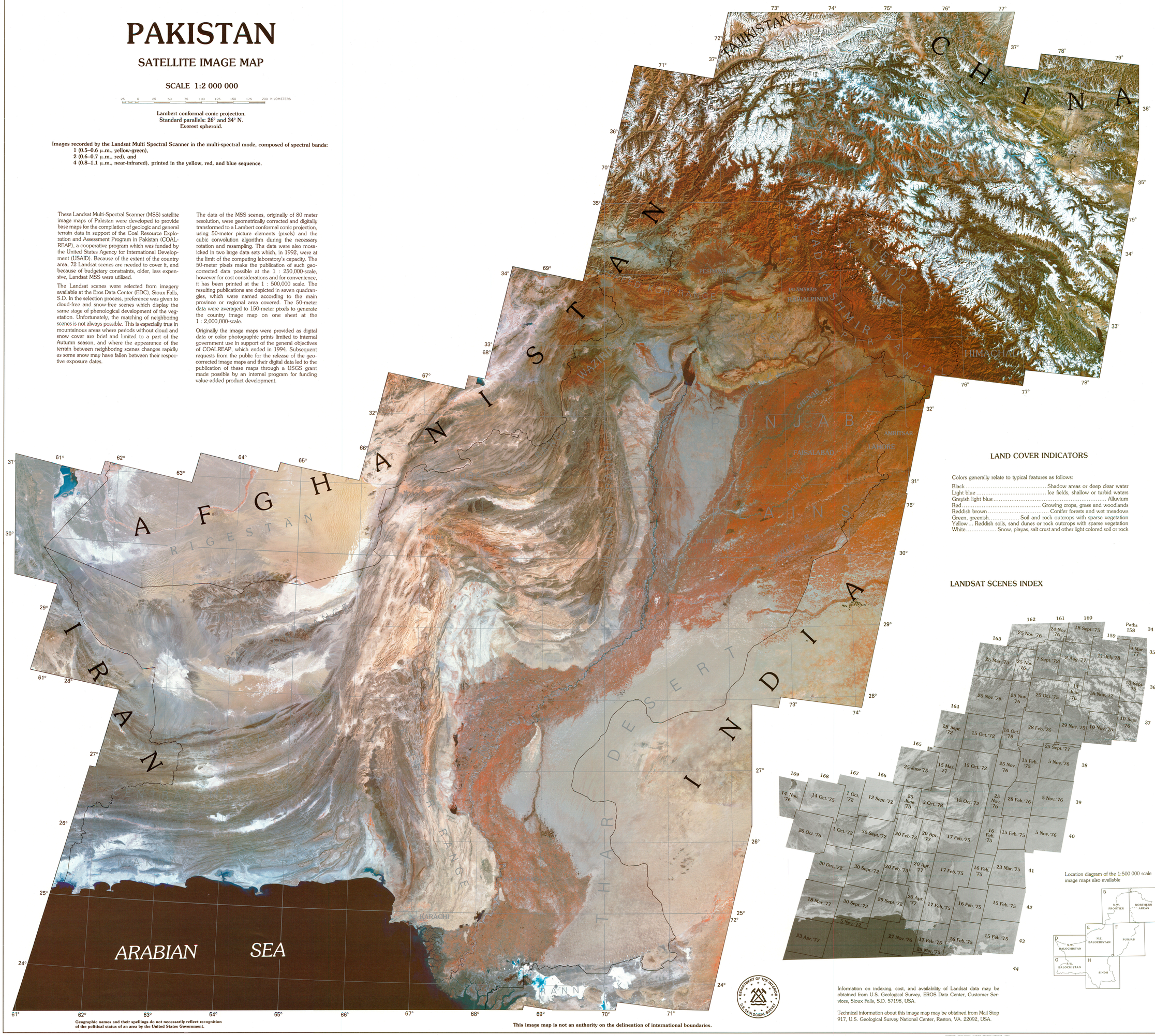
Images recorded by the Landsat Multi Spectral Scanner in the multi-spectral mode, composed of spectral bands:
1 (0.5–0.6 μ.m., yellow-green),
2 (0.6–0.7 μ.m., red), and
4 (0.8–1.1 μ.m., near-infrared), printed in the yellow, red, and blue sequence.

These Landsat Multi-Spectral Scanner (MSS) satellite image maps of Pakistan were developed to provide base maps for the compilation of geologic and general terrain data in support of the Coal Resource Exploration and Assessment Program in Pakistan (COALREAP), a cooperative program which was funded by the United States Agency 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 imagery 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 same stage of phenological development of the vegetation. Unfortunately, the matching of neighboring scenes is not always possible. This is especially true in mountainous areas where periods without cloud and snow cover are brief and limited to a part of the Autumn season, and where the appearance of the terrain between neighboring scenes changes rapidly as some snow may have fallen between their respective exposure dates.

The data of the MSS scenes, originally of 80 meter resolution, were geometrically corrected and digitally transformed to a Lambert conformal conic projection, using 50-meter picture elements (pixels) and the cubic convolution algorithm during the necessary rotation and resampling. The data were also mosaicked in two large data sets which, in 1992, were at the limit of the computing laboratory's capacity. The 50-meter pixels make 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 depicted in seven quadrangles, which were named according to the main province or regional area covered. The 50-meter data were averaged to 150-meter pixels to generate the country image map on one sheet at the 1 : 2,000,000-scale.

Originally the image maps were provided as digital data or color photographic prints limited to internal government use in support of the general objectives of COALREAP, which ended in 1994. Subsequent requests from the public for the release of the geocorrected image maps and their digital data led to the publication of these maps through a USGS grant made possible by an internal program for funding value-added product development.



Geographic names and their spellings do not necessarily reflect recognition of the political status of an area by the United States Government.

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

LAND COVER INDICATORS

Colors generally relate to typical features as follows:

Black	Shadow areas or deep clear water
Light blue	Ice fields, shallow or turbid waters
Greyish light blue	Alluvium
Red	Growing crops, grass and woodlands
Reddish brown	Conifer forests and wet meadows
Green, greenish	Soil and rock outcrops with sparse vegetation
Yellow	Reddish soils, sand dunes or rock outcrops with sparse vegetation
White	Snow, playas, salt crust and other light colored soil or rock

LANDSAT SCENES INDEX

Location diagram of the 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 917, U.S. Geological Survey National Center, Reston, VA. 22092, USA.

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