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EARTH RESOURCES TECHNOLOGY SATELLITE
DATA COLLECTION PROJECT ERTS - BOLIVIA.

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Dr. Carlos E. Brockmann
PRINCIPAL INVESTIGATOR

Servicio Geológico de Bolivia
Casilla 2729
La Paz - Bolivia

1.0 INTRODUCTION

In the six months covered by the present report, 27 images were received, 13 corresponding to the RBV system and the other 14 to the MSS system. The latter were repeated up to 3 times in some areas. 80 % of the area to be investigated was covered equivalent to 50 % of the national territory.

However, despite the fact that we had this volumn of information, the test area on the eastern side of the Andean Cordillera, known locally as " Yungas ", was covered with clouds and consequently very little information is available for this zone.

2.0 PROCESSING OF IMAGES

In order to keep an adecuate record of the N. D. P. F. images received, copies were made immediatly of the 70 mm, negatives into plates as well as into negatives of lesser density, adecuate for enlargements to be made on 1:1,000,000; 1: 500,000 and 1: 250,000 scales with excellent results. The images processed on a 1: 1,000,000 scale were plotted on the OPERATIONAL NAVEGATION CHART

3.0 MULTIDISCIPLINE PROGRAM

3.1 Cartography

3.1.1 Photomosaic

With the ERTS-1 MSS images we made a basic photomosaic on a 1:1,000,000 scale. The images used were those with 0% cloudiness. The photomap prepared covers 45% of the country.

3.1.2 Cartographic Map

In order to study the possibilities presented by the ERTS-1 images from the cartographic viewpoint, a lithographic photomap chart on a 1: 250,000 scale was prepared. On it were transcribed some data referring to public works.

3.1.3 Evaluation of the Cartographic Map

At the present time the OPERATIONAL NAVEGATION CHART on a 1: 1,000,000 scale is the only chart in use on this scale

in this country. With the application of the ERTS-1 images it was found that this map shows noticable errors. For this reason a separate study is being made.

3.1.4 Precision Images

Although we are considering applying to N. D. P. F. for images of this kind to carry on the corresponding investigation, this work is still pending.

3.2 Geology

3.2.1 Regional Geology

- 3.2.1.1 Geological Map of the Project Area on a 1:1,000,000 scale 35%
- 3.2.1.2 Geological map fo the Project Area on a 1:250,000,000 scale 5%

3.2.2 Tectonic Physics

- 3.2.2.1 Structural map fo the Bolivian Altiplano, scale 1:500,000 35%
- 3.2.2.2 Siesmic map of the Bolivian Altiplano, scale 1:500,000 30%
- 3.2.2.3 Structural map of the Bolivian Altiplano, scale 1: 1,000,000 30%

3.2.3 Mineralized Belts

Study under investigation

3.2.4 Geomorphology

- 3.2.4.1 Geomorphological map, scale 1:1,000,000 - 20%
- 3.2.4.2 Geomorphological map, scale 1:250,000 - --%

3.2.5 Petroleum Exploration

- 3.2.5.1 General map, scale 1:1,000,000 20%

3.2.6 Vulcanology

- 3.2.6.1 Map of vulcanic areas, scale 1:1,000,000 - 60%

3.2.6.2 Map of volcanic areas, scale 1:500,000 --%

3.3 Agronomy

3.3.1 Physiognomy map of the Altiplano, scale 1:1,000,000-10%

3.3.2 Land Clasification, scale 1:1,000,000 - 10%

3.3.3 Land Use Survey, scale 1:1,000,000 - --%

3.3.4 Saline Soil and Drainage Survey, scale 1 :1,000,000- --%

3.3.5 Soil Erosion Maps, scale 1:1,000,000 - --%

3.3.6 Ecological Map - 10%

3.3.7 Timber Survey and Classification - --%

3.4 Hydrology

3.4.1 Geomorphology of Drainage Basins - --%

3.4.2 Determination of Hydrology Basins and Subbasins - 5%

3.4.3 Determination of Hydrology Basins and Subbasins -
scale 1:1,000,000 - 26%

3.4.4 Glacier Maps, scale 1:1,000,000 - 20%

3.4.5 Flood Assessment Mapping - --%

4.0 PROGRAMED WORK

In view of the excellent results obtained from the ERTS images, the photomap of Bolivia on a 1:1,000,000 scale has been programmed, for which we hope to have coverage of the whole country. At the same time we want to use this basic information to publish specialized maps as indicated in Section 3.0. - Because CCT has not been used up to now we are studying the possibility of reaching on agreement with LARS, PARDUE to use these tapes in the Automatic Data Processing.

5.0 PUBLISHED STUDIES

At the III National Convention of Geology, sponsored by the Bolivian Geological Society, the report " APLICACION OF THE ERTS IMAGES TO GEOLOGICL MAPPING", was presented.

During the First Symposium on Remote Sensors, in Panamá last May, the report, " APPLICATION OF THE ERTS IMAGES TO CARTOGRAPHY AND GEOLOGY ", was presented.

At present the experimental publication of the first map using ERTS images on a 1:250,000 scale is in the preparation stage.

6.0 PROBLEMS ENCOUNTERED IN THE DEVELOPMENT OF THE PROGRAM

The principal obstacle encountered in the beginning for the normal development of the Program was related to the reproduction of the images, due fundamentally to the density of the N. D. P. F. negatives. This problem was solved by making contact copies with less density.

Because of the problems presented by the ERTS-1 recorder, we do not expect total coverage of the test area.

7.0 IMAGE DESCRIPTOR FORM

During the period covered by this report IMAGE DESCRIPTOR FORMS of the images listed below were sent. However, we must point out that the EARTH RESOURCES VOCABULARY (Table 4:2 of the Data User Handbook) is not complete, making it necessary that N. D. P. F. have the corresponding meeting.

1010-14035, 1010-14033, 1010-14042, 1065-14091, 1008-13531.