PROBLEM AREA INVENTORY OF PARTS OF HOSHIARPUR DISTRICT THROUGH PHOTO-INTERPRETATION.

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ABSTRACT

A systematic air-photo-interpretation procedure employing physiographic analysis has been used in preparing a quick inventory of the problem areas of parts of Hoshiarpur district of Punjab.

The inventory has been prepared in respect of two selected areas viz. Hoshiarpur and Nangal on the basis of the study of photo-mosaic of Hoshiarpur district.

The soil conservation needs of the predominant problem land units of both the areas are indicated.

INTRODUCTION

The great utility of Land Resource Maps in formulating land improvement and development plans is widely appreciated now-a-days. Such maps can be of two kinds: (1) those that are required for assessing and developing land resources of largely unexplored areas, and (2) maps that serve as a basis of intensifying the developmental activities in relatively well settled tracts. The land system mapping done on an integrated basis in Australia is an example of the former (Christian and Stewart, 1968); a similar approach would probably be suitable for assessing the potentialities in many countries of South America and Africa. The second type of maps are the Land Resource Maps prepared by the Soil Conservation Service of the United States Department of Agriculture (USDA, 1958); these are prepared at three levels, namely Land Resource Regions, Land Resource Areas and Land Resource Units. In some situations, a third type of map is often demanded by high level planning administrators; these go by such names as problem area maps, priority maps etc.; essentially such maps should accurately depict the location of areas which need special treatment or management. In other words, these maps need not be regular thematic maps, such as soil maps, land use maps etc.; on the other hand emphasis should be laid on identifying poor and marginal lands like severely eroded tracts, 'Cho' affected areas (rainy season torrents on the plain along the Southern Margin of Siwaliks. The word ‘Cho’ connotes a bed of loose boulders, gravels and sand indicating rapid erosion), ravine infested areas, water logged lands, salt affected lands etc. The preparation of such maps can

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be done quickly through photo-interpretation techniques. The results emanating from such an attempt of making inventory of problem areas by photo-interpretation procedure in respect of parts of Hoshiarpur District of Punjab state are presented in this paper.

Air Photo-Interpretation Procedure:

Systematic air photo-interpretation procedures have been successfully adopted for preparing accurate thematic maps expeditiously and economically. In respect of soil surveys, land use surveys and Soil Conservation surveys, a basic systematic procedure on the lines described by Shamacharya and Srinivasan (1972) has been found to be efficacious; in fact as described by Jawade and Srinivasan (1974), such a procedure has been found to be significantly advantageous even in the preparation of large scale soil maps corresponding to detailed soil maps. In brief, the procedure comprises the following step by step activities: (i) preliminary study of air photomosaic, (ii) brief initial reconnaissance of the survey area, (iii) preliminary photo-interpretation and selection of sample strips/areas/patches, (iv) very detailed study of the selected sample strips to establish the composition of the photo-analytical units, (v) final interpretation of all air photos on the basis of the findings of the sample area studies, and (vi) a limited selective check of areas falling outside the sample areas for verification of the photo-interpretation. It can be seen that the most important step in the basic procedure is that the photo-interpretation is fully adjusted to field findings, particularly data emanating from an intensive study of sample areas, or sample strips or sample patches representing all the important photo-analytical units resulting from the systematic photo-interpretation. In other words, no modern photo-interpreter would finalise a thematic map before identifying and establishing a factual relationship between photo-analytical units and ground truth specific to the theme of the map. However, in the study reported in this paper, a departure has been made from this approach, in that the photo-interpretation map has been prepared without any field studies, in view of urgency of assessment of the problem area. The field checks are proposed to be carried out at a later stage.

Study Area:

Hoshiarpur District has a total area of about 5600 sq. km. The area being very large, the photo-interpretation inventory of the whole district was not done, particularly because the objective of this exercise was to test the feasibility of mapping problem areas. As such, the inventory was done in respect of two selected sections of the district that together would represent the important problem land units in the district as a whole; the selection of the two areas was made on the basis of a study of photo mosaics of air photos covering the greater part of Hoshiarpur District. Two different mosaics had to be laid out as only a small part of the district area is covered by small scale air photography (1:82,000); for the remaining area, air photos in the scale of 1:32,000 are available. Normally, for obtaining a broad inventory of land resources, it would be most advantageous to use small scale air photos; but, because they are not available in this case, the photo-interpretation of two areas has been