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HORTICULTURAL DEVELOPMENT IN THE HIMALAYAN AND HENGDUAN MOUNTAINS OF CHINA

Zheng Du, Li Gaoshe, Jiang Hong

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HORTICULTURAL DEVELOPMENT IN THE HIMALAYAN AND HENGDUAN MOUNTAINS OF CHINA

ICIMOD's approach to problem oriented research involves both knowledge reviews and field studies. The focused reviews and field studies conducted by the Mountain Farming Systems' Division cover various aspects of agricultural development. Since early 1982, a series of 'State of the Art' reviews of agricultural policies and programmes were sponsored by ICIMOD in different countries of the HKH Region. The purpose of these studies and the subsequent National Workshops in different countries was to understand some of the constraints and prospects of mountain area development. These exercises were also aimed at acquiring comparative perspectives of development approaches and strategies in different countries.

Zheng Du, Li Gaoshe, Jiang Hong

This paper was a part of this series of studies commissioned by ICIMOD, and was also presented at the Workshop on 'Horticultural Development in the Hindu Kush-Himalayas' organised by ICIMOD, the Ministry of Agriculture of HMG (Nepal) and the Food and Agriculture Organisation of the United Nations (FAO), in Kathmandu, Nepal, on 22 June, 1989. The paper provides an overview of horticultural development in the Hengduan Mountains of China covering major fruit and vegetable crops. The paper also contains a number of recommendations for future consideration.

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I. INTRODUCTION

II. GENERAL CHARACTERISTICS OF THE STUDY AREA

ICIMOD's approach to problem oriented research involves both knowledge reviews and field studies. The focussed reviews and field studies conducted by the Mountain Farming Systems' Division cover various aspects of agricultural development. Since early 1988, a series of 'State of the Art' reviews of agricultural policies and programmes were sponsored by ICIMOD in different countries of the HKH Region. The purpose of these studies and the subsequent National Workshops in different countries was to understand some of the constraints and prospects of mountain area development. These exercises were also aimed at acquiring comparative perspectives of development approaches and strategies in different countries.

III. FRUIT CROPS

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in the area. The study area is located in the natural resources and the geo-structure of the Himalayas. As a whole, the study area may be divided into three zones: the agro-pasture zone on the northern side of the Himalayas; the agro-forest zone on the southern side of the Himalayas and the southern section of the Hengduan mountains; and the agro-forest-pasture zone in the middle and northern sections of the Hengduan mountains.

With economic development, social progress and improvement of communications, horticulture has been developed on a large scale since the 1950s. To develop horticulture is one of the strategies for rational utilization of renewable natural resources of mountainous areas.

In order to exchange experiences, recognize existing problems and future prospects, horticulture development in the study area, including fruit, walnut, tea, potato and vegetables etc. are dealt with in the present paper.

II. GENERAL CHARACTERISTICS OF THE STUDY AREA

Geo-ecological Conditions

Topography and Rivers

The topography on the northern and southern flanks of the Himalayas is fully asymmetrical, especially in the central Himalayas. In the south, the main ridges of the Great Himalayas rise abruptly to about 6000m above the Ganges plain, forming steep slopes with strong fluvial erosion in the gorges. Owing to uplifting of the mountain system and landform of "valley in valley" may be found here and there in the region. Sediments and fanlands are mainly located on the level shoulder, lying above the knick point in the transverse profiles.

By contrast, the topography of the northern flanks of the Himalayas is more gently undulating with a relative elevation of 1500-2000m. The plateau proper of south Xizang (Tibet) stretches to the northern flanks of the Himalayas with broad basins and valleys, where piedmont deposits are very extensive. Under the cold and semi-arid climate, a great many sand dunes and sand drifts lie along the river valleys.

The Hengduan mountains comprise a series of high mountain ridges sandwiched between deep river gorges. As a whole, the Hengduan Mountains slope from northwest to southeast and from north to south, with altitudes from 4500 to less than 3000m asl. The topography of the region is interlaced and separated by mountains, plateaux, valleys and basins in distinct relief.

The northern section of the Hengduan Mountains is a slightly dissected plateau with gentle slopes. In the middle section the plateau occurs with broad valleys, fluvial terraces, and flood lands may be seen in a number of broad valleys. The southern section of the region consists of basins, middle altitude mountains and plateaux, with an elevation varying from 3000 to 2000m asl. A number of basins with lower altitudes and gentle relief are suitable for crop growing and are an important area in this section.

Controlled by geological structure, the Himalayan ranges emerge in a series of drainage systems, cut through by very deep transverse gorges, such as the Indus, the Sutle], the Pamqu (the upper reaches