BOOK REVIEWS, continued

Much of the areas has been demonstrated; but the final conclusion of the authors is worth emphasizing: “The transformation of shifting cultivation into intensified farming, on which the world’s food problem depends, needs a great deal of time, patience, persistence, and unselfishness, and implies help from many scientific disciplines concerned with both natural science, human and economic studies, and the science of management.”

The approach taken by J.N.E.A.C. to intensify the agriculture of the Congo was that of changing the indigenous systems of shifting cultivation to systems of cultivation more independent of the weather by gradually increasing the number of production factors and the intensity of their application. The research was conducted along the following broad lines:

First phase: to check in each ecological case whether it was possible to improve the ratio between the traditional cultivation (DTC) and the duration of the natural fallow (DNF) either by lengthening the former or shortening the latter, or doing both together;

Second phase: experiments in replacing natural fallow by cropping the soil, with or without grazing and with or without manure;

Third phase: experiments with rotations of pure stand crops suitable for mechanical cultivation according to their particular purposes:

Fourth phase: increasing the association of livestock husbandry with agriculture.

The authors repeatedly emphasized that the intensification of shifting agriculture involves more than improved crops or livestock production; it requires changes also in the economic and social life of the cultivator. The way to positively fail in attempts to rationalize African agriculture is not to disregard the complete interdependence of every aspect of the farmer’s condition and by failing to ensure the harmonious evolution of those which ultimately govern agricultural production.

The book has 7 chapters. The first describes the characteristic of shifting agriculture and the second discusses the obstacles to intensification of agriculture and the first stages of agricultural development. Probably of most interest to soil and crop scientists is Chapter III which has almost 100 tables devoted to a review of the various cultivation systems on a wide variety of soils in the different climatic regions. A large number of fertilizer experiments are summarized with reference to the kind of soil, crop, and climatic environment. In many locations, high and profitable yields were obtained with chemical fertilizers.

Chapter IV is devoted to problems of livestock production and pasture and range management. Chapter V deals with plant protection and Chapter VI with labor and mechanization. The last chapter is concerned with the social and economic problems involved in the agricultural development of the Congo.

The book contains many excellent photographs. There are 151 in all, and they add much to the reader’s interest.

Valuable reference material is given in the three appendices. Of particular importance is the climatological data for some 25 of the principal experiment stations throughout the Congo. Rainfall, air temperature, solar radiation, evaporation, and atmospheric humidity are given for varying periods during the 1950’s.

The soil classification system used by J.N.E.A.C. is given in an appendix. It provides a brief general description of the soils of the different regions with reference symbols relating to the soils of the specific experiments described in the text. Two correlation tables are included. One shows the correlation of the experimental plots with the units of the soil map of Africa compiled by I.N.E.A.C. in 1964. The other gives the correlation of the soils with both the French system and the USDA comprehensive system (7th Approximation).

In summary, this volume is a must for anyone involved in agricultural development in the humid and subhumid tropics. It provides a keen insight into how research on soils, crops, and livestock is applied to the practical problems in modernizing subsistence agriculture with the many social and economic factors involved. The principles elucidated can serve well as guidelines for many areas of the tropics and help avoid the costly pitfalls that so often occur without an understanding of the many interrelated factors involved in agricultural development.

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