

ed to \$118,433,443, and were of two classes, non-speculative and speculative, and defaults have been largely confined to the latter group. At the date mentioned, 71% of all bonds sold by these districts had been paid when due both as to principal and interest. During the years 1915-21, less than 1% of the bonds sold were unpaid, due largely to more effective State control, greater discrimination by bond investors, and more general conservatism in promotion.

Failures have generally resulted from inadequate water supply, unproductive lands, over-capitalization, faulty engineering, insufficient settlers, and over optimism, as well as to manipulations of promoters, connivance of some bond houses, and lack of Government restraint.

Essentials for Success

Essentials for success have been: productive land, good markets, sufficient water supply, reasonable capitalization, adequate settlement, and proper Governmental control. In Southern Alberta we have ample water supply, which the Federal Government controls. Many projects have been shown to be economically sound by the Reclamation Ser-

vice Engineers as far as construction charges are concerned. We have the climatic conditions and the requirements of soil fertility, as has just been again proven by a world record wheat crop on some six million acres, and by the numerous prizes won on grain and fodder crops at the recent International Exposition at Chicago.

Irrigation within practicable and economic limits is fundamentally a sound system of agriculture in Southern Alberta, and provides outstanding opportunities for the creation of self-supporting and self-owned farm homes. The irrigated districts will open up possibilities in diversified farming and the establishment of kindred industries not elsewhere possible. They will become the cradle of an enormous feeding and finishing industry, and will ultimately form the most productive and most intensely cultivated areas in Western Canada. They will result in smaller farm units and closer settlement, better social conditions, multiplicity of crops, and the subsequent creation of such industries as seed growing, sugar beets, and canning; and above all, they will provide greater opportunities for real home-making, which means so much towards a permanent system of agriculture.

Capital Provided by Government Bonds

Capital with which to carry on the construction of these works was made available by debentures issued and disposed of under full guarantee for both principal and interest by the Provincial Government, under whose jurisdiction all necessary expenditures are approved by their Irrigation Council. To date five projects have had their bills and are about to be put into operation. These included about 163,000 acres, and the bond issues covering their construction costs amounted to \$6,600,000. The construction charges on these projects ranged from \$16.00 to \$21.00 per acre of irrigable land within the districts. The bonds have a life of 30 years and were disposed of at very favorable rates in addition to those for other districts containing about 600,000 acres in various stages of preliminary organization.

The most serious problem yet to be worked out in connection with these systems is that of colonization, and a reduction in the size of the holdings, so that the construction, maintenance and operation charges can be met by the occupants of the land.

On December 31st, 1921, in the United States, 344 irrigation districts were in operation, 37 irrigation districts were under construction, and 139 irrigation districts were in the preliminary stages, and during 1921 these districts irrigated 2,825,000 acres of land.

The bond issues covering these districts amount-

Overcrop farmers is a notorious soil fertility conserving and improves a number of possible of a balanced selection of the variety of products that is likely to keep the farmer most profitably employed throughout the greatest portion of the year, as well as a selection and a balancing of products with reference to the market available.

The area irrigated during 1920 in the United States Reclamation Service projects alone was 1,225,000 acres, and a crop census of these projects for the years 1910-20 showed that their average crop returns per acre were double those from the farm lands of the United States as a whole. An important point to be noted here is that of these products about 65% were such as can be successfully grown under irrigation in Southern Alberta, including grain, cereals, fruits and vegetables, whereas the totals for fruits and cereals only amounted to 30% of the whole. In regard to the question of experiment it may be stated that the cost of summer-fallowing, together with taxes in trees and upkeep, on idle land, will in most cases equal irrigation charges, and that, even for acre of producing land, irrigation is not more expensive than the so-called but incorrectly termed—dry farming. Irrigation stabilizes agriculture, and therefore stabilizes business conditions, and public sentiment in favor of such is steadily growing in Southern Alberta. The province, as a generally known, is subject to seasons of short-crop. During such years everyone is an irrigation enthusiast; but when a so-called wet season comes around, the virtues of irrigation are apt to be forgotten.

Diversified farming with crop rotation restores soil fertility, conserves it, and improves a number of possible of a balanced selection of the variety of products that is likely to keep the farmer most profitably employed throughout the greatest portion of the year, as well as a selection and a balancing of products with reference to the market available. The area irrigated during 1920 in the United States Reclamation Service projects alone was 1,225,000 acres, and a crop census of these projects for the years 1910-20 showed that their average crop returns per acre were double those from the farm lands of the United States as a whole. An important point to be noted here is that of these products about 65% were such as can be successfully grown under irrigation in Southern Alberta, including grain, cereals, fruits and vegetables, whereas the totals for fruits and cereals only amounted to 30% of the whole. In regard to the question of experiment it may be stated that the cost of summer-fallowing, together with taxes in trees and upkeep, on idle land, will in most cases equal irrigation charges, and that, even for acre of producing land, irrigation is not more expensive than the so-called but incorrectly termed—dry farming. Irrigation stabilizes agriculture, and therefore stabilizes business conditions, and public sentiment in favor of such is steadily growing in Southern Alberta. The province, as a generally known, is subject to seasons of short-crop. During such years everyone is an irrigation enthusiast; but when a so-called wet season comes around, the virtues of irrigation are apt to be forgotten.

Irrigation are apt to be forgotten.