

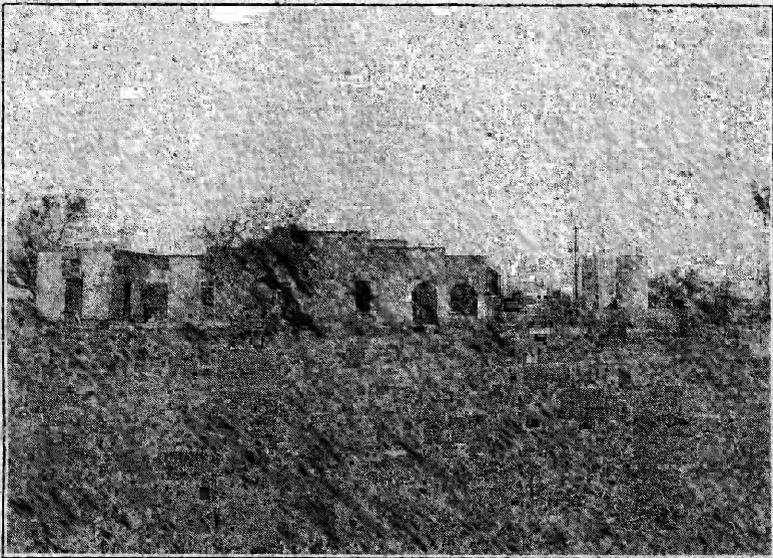


University of Arizona

College of Agriculture
Agricultural Experiment Station

THE FINANCIAL REHABILITATION OF IRRIGATION AND DRAINAGE DISTRICTS

BY G. E. P. SMITH



—Photo by R. S. Hammons.

An Abandoned Farm in an Irrigation District.

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FOREWORD

The rehabilitation of irrigation, power, and drainage districts in Arizona is of great immediate importance to the State. In area and in potential production these districts constitute an important percentage of our agriculture. It is highly desirable that available irrigation water supplies be used, that profitable production of quality crops be encouraged, and that fields, homes, and irrigation systems be maintained. All districts should be assets, yet some of them are liabilities. No taxes are being collected in many cases while roads and schools must be maintained. Property values are depressed and public and private credit is adversely affected.

The Arizona Agricultural Experiment Station stands ready to assist in the rehabilitation of these districts in so far as it is practicable. A reorganization that will endure requires a careful study of the more important physical and economic factors. The several departments of the Experiment Station can be of assistance in determining a fair and safe basis for new contracts. The National Government as this goes to press is attempting to raise the general price level of all commodities and to insure to agriculture a pre-war purchasing power. Even though agricultural prices are fully restored, yet readjustment of irrigation-district indebtedness in many cases must be effected. Farming in these districts will not be prosperous and bondholders will not have adequate security until the debts are adjusted downward to overcome the burden of accumulated back taxes and interest charges. A proper debt settlement is also necessary to enable the districts to replace worn-out equipment and to permit the installation of needed repairs to irrigation works.

THE DIRECTOR.

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THE FINANCIAL REHABILITATION OF IRRIGATION AND DRAINAGE DISTRICTS

By G. E. P. SMITH

THE URGENT PROBLEM

Aside from the two great irrigation projects, one in the Salt River Valley and one in the Yuma Valley, (which were financed by the United States Bureau of Reclamation), most of the remaining irrigated lands of Arizona are organized as irrigation districts under the State Irrigation Districts Act, Revised Code of Arizona, 1928, Chap. 81, Art. 2. Several electrical or power districts, organized for the purpose of purchasing and distributing hydroelectric power to individually owned pumping plants, are essentially irrigation districts, in purpose and in organization. Some of the irrigation districts are organized to secure both irrigation and drainage, and there are five active districts, the purpose of which is drainage alone.

Thirty-four of the districts have voted bond issues and in nineteen cases a part or all of the bonds voted were sold, usually at a discount.

In common with other institutions which entered the depression period with heavy indebtedness, many of the irrigation and drainage districts of Arizona and of other states have been unable to meet the interest and amortization payments of their bond issues and such districts are virtually bankrupt and insolvent. At present price levels, especially those of agricultural products, the possibility of resuming payments to bondholders is very remote. Furthermore, the delinquencies both for bond service and for state, county, and school taxes are accumulating, many fields and homes are being abandoned, irrigation and drainage systems are deteriorating rapidly for lack of proper maintenance and repairs, and the farms are not salable at any price.

Inasmuch as the welfare of the community, the county, and the State is involved, as well as that of the landowners and the bondholders, it is highly desirable that the outstanding liabilities of districts in financial distress should be compromised on the basis of agricultural conditions and that the districts be placed in sound and solvent condition. Since every day's delay adds to the difficulties, the first steps should be taken at once either by the boards of directors or by bondholders' committees, or by organizations such as chambers of commerce which can function as intermediaries, or by the State.

Negotiations between the landowners and the bondowners of a district should be friendly, without acrimony and recrimination, and with full appreciation of the obligations and difficulties of the district. Resort to the courts by either side can accomplish little or no good, and is sure to do great harm through postponement of a solution and through arousing a feeling of antagonism. Through cooperation between the parties, and with the exercise of patience, readjustments of indebtedness reflecting the best interest of all concerned can be secured. By such means some reorganizations have been effected in other states with benefit to both parties.

The main purpose of this bulletin is to present the situation in which the districts now find themselves and to outline the procedure which should be followed in readjustments.*

THE DISTRICTS IN ARIZONA

HISTORICAL

The smallest and easiest opportunities to divert and use water from streams are on the extreme headwaters, and individual landowners have availed themselves of those opportunities, but in Arizona the number is not large. In other cases groups of farmers, organized as mutual water companies, have built diversion works and canal systems. The larger mutual water companies are incorporated. Commercial companies also have built irrigation works after securing title or control of land, and then have colonized the land, selling each tract with an appurtenant water right.

However, throughout the West, those forms of irrigation institutions were inadequate for the more difficult projects, which necessitated heavy initial investment for dams, canal systems, and other irrigation works, and which also required the inclusion of practically all lands within an extensive area. After several legislative attempts which failed, the Wright Act of 1887, authorizing the organization of irrigation districts, was passed in California and was proved to be constitutional. Each of the 17 Western states has passed an irrigation district act modeled rather closely on the Wright Act. The one in Arizona was passed in 1912, but has been amended numerous times since that date, the amendments in some cases being dictated by prospective bond buyers of newly organized districts. Drainage and electrical district acts are similar to irrigation district acts in form and procedure.

*Assistance can be obtained also from the following publication: Circular No. 72, United States Department of Agriculture, entitled: "Financial Settlements of Defaulting Irrigation Enterprises." This circular is based on a study of debt settlements of 37 defaulting irrigation projects in various states and describes 13 of them in detail.

LEGAL CHARACTER

Briefly, the irrigation (or drainage) district* is a public corporation, much like a city in law, but with different purpose. It has definite boundaries. The courts have held the district to be a political subdivision of a state, with respect to most constitutional provisions. There are the usual requirements for public elections. Each elector has one vote regardless of whether he owns much or little land. Bond issues can be voted and sold and the bonds are tax exempt to the same degree as those of a city or county. Revenues for bond service and other purposes are obtained by assessments on the land. The assessments are often called taxes, since they are levied by the county supervisors and collected by the county treasurer. A part of the revenues may be collected as tolls for water. The property of the district is not subject to taxation by state or county.

A district is created by the county supervisors (courts, in some states) after petition signed by landowners, notification and hearings, and an election. Electors must be owners of land and must be residents of the county in which the district is situated, and the election is conducted similarly to county elections. In most states it is required that only a majority of the votes cast be in favor of the organization. Those voting adversely are included, against their will, unless (in Arizona) they already have an irrigation supply in actual use, for at least 25 percent of their lands. (Oregon law requires a three-fifths vote; Washington, Idaho, and New Mexico require two thirds.)

A district is governed by a board of directors. The term of office is 3 years, one-third of the number being elected each year. The powers of the board of directors are broad and adequate to cover operation and maintenance of the system, and all fiscal and legal matters.

Bonded indebtedness may be incurred by a district for the construction or purchase of irrigation or drainage works and appurtenant purposes. Under the provisions of the law, a special election for the purpose may be called by the board of directors, by public notice. The question is on the issuance of the bonds, and a majority of the votes cast determines. The bonds, if issued, must be coupon bonds, payable

*The statutory features here described are those of irrigation districts. The statutes relating to electrical districts, agricultural improvement districts, drainage districts, and flood control districts are similar in general character to those relating to irrigation districts, but differ in details. For example, in drainage districts assessments are apportioned, optionally as determined by vote of the qualified voters, either on the basis of assessed valuations or on the basis of benefits received by the individual 40-acre tracts, while in irrigation districts taxes are assessed equally at a flat rate per acre. The maturities of a drainage district bond issue are distributed over a 10-year period beginning the eleventh year after date of issue.

in lawful money of the United States, serially beginning the eleventh year after issuance and ending the thirtieth year, and bearing interest not to exceed 7 percent.

Before the bond election the board of directors must submit to the State board of certification* a detailed engineering report on the proposed plan of water development and distribution, with a cost estimate. The State board may make additional examinations. It shall then make a report, stating conclusions as to the water supply, the soil, the duty of water, the question of drainage, the cost estimates, the proper dates of maturity for bonds, and whether or not it is advisable to proceed with the bond issue. The board of directors may change the plans to conform to any recommendations of the State board. If certification is desired, a resolution to that effect is passed by the directors and presented to the State board, which must then determine two economic features: first, whether the irrigation project is feasible, and second, whether the total bonded indebtedness complies with the legal restrictions and will not exceed 60 percent of the aggregate market value of the lands, the water rights, and the irrigation works owned or to be constructed. If the decision is favorable, the State board shall authorize the State auditor to certify the proposed bonds, and the bonds become legal investments for savings banks in Arizona and may be accepted as security for public money. If a district shall issue bonds in an amount approved by the State board, it is unlawful for the district to make any material change in the plans without the written consent of the State board.

The bonds are sold at public sale, after notice by publication for 3 weeks in newspapers calling for sealed proposals by a certain day and hour. No bonds can be sold at less than 85 percent of their face value. The secretary of the district is required to keep a record of the bonds sold with the names of purchasers, but since the whole issue is taken usually by a representative of a bond house and the bonds are thereafter distributed among hundreds of investors throughout the country, it becomes extremely difficult for the district to locate the bonds when occasions arise making it desirable to communicate with the bondholders. Reorganizations of districts would be facilitated if bondholders would communicate with the secretaries of the districts stating their addresses.

The issuance of refunding bonds, with detailed procedure to be followed, was authorized by legislation in 1931 (Session Laws, Regular Session, Tenth Legislature, Chap. 98).

Provision for raising of district revenues for bond interest and re-

* The State board of certification is composed of the attorney general, the State engineer and the superintendent of banks. The attorney general is the chairman.

demption, and for operation and maintenance costs, includes preparation by the board of directors of a budget for the next fiscal year and its submission to the board of supervisors on or before July 1, and the addition of 15 percent thereto by the county supervisors, after which the supervisors levy the assessment at a uniform rate per acre, and in the same manner as taxes are levied. District assessments are carried on the books of the county treasurer, and are collected, exactly the same as taxes, and as soon as levied, they become and are a lien against the land. The district taxes can be paid without payment at the same time of county and state taxes.

Expenditures of the district are paid by the county treasurer on warrants signed by the president and by the secretary of the district. The warrants are drawn on separate funds, into which the business of the district is divided, and if there is no money in the fund, warrants are registered and draw interest. Warrants, which are evidence of proved and allowed legitimate claims against the district, are acceptable in payment of operation and maintenance taxes at their face value.

Matured bond interest coupons also may be used in payment of district taxes.

LIST OF DISTRICTS, WITH AREAS AND INDEBTEDNESS

A table giving the names of districts, grouped by counties, with the years of organization, areas, bonds voted and outstanding, and status, is presented herewith facing page 134. Districts which were organized but failed to function are included, in order to give a complete picture of operations under the district laws.

It is apparent from the table that the World War, with the accompanying urgent demand for more agricultural land, provided the stimulus for formation of districts, although the plans for many districts, initiated between 1917 and 1920, were not matured until several years later. The initial success of the districts formed in those years encouraged the promotion of additional districts, mostly of smaller areas.

The term inactive as used in the tabulation covers a variety of conditions. In some cases the districts hold annual elections, in other cases none are held; in some a few landowners remain but secure their irrigation water supply independently, while in some cases the original promoters and settlers are gone and so forgotten that difficulty was had in getting the meager data here presented.

Five of the districts have been dissolved by legal process. Some others which have never functioned and in which elections have been

omitted for several years should be legally dissolved in order to clear the land records. A few districts have operated with some success without the issuance of bonds. Five small districts are still meeting all obligations of their bonded indebtedness.

EFFECTS OF THE DEPRESSION

PRICE LEVELS

The business conditions of the country are reflected in the trend of prices of commodities better than in any other way. Figure 1 presents graphically the trend of price levels from 1910 to 1933 in three curves,* namely: Curve A, the average wholesale prices of all commodities, Curve B, the wholesale prices of farm products, and Curve C, the retail prices of implements and other commodities used in living and in production which farmers purchase. Curve D will be explained later.

The average prices of the period from 1909 to 1914 are taken as a basis, that is, as 100 percent, since the price levels were unusually stable during that time. The prices for other years are computed as percentages of the 1909-1914 5-year base. Inspection of Figure 1 shows that prices rose to high levels during the war, then fell in 1920 to a level which was maintained fairly well until 1929, since which time there has been a rapid decline.

Price level may be regarded as the converse of the value of the dollar. If the average price level rises 2 percent, from 100 to 102, then the value of the dollar falls to 98 percent; when the average price level doubled between 1915 and 1919, the value of money shrank 50 percent, and a dollar would buy only one-half as much in 1919 as in 1915. Since 1920 the value of money has increased.†

All commodities do not fluctuate in price equally. Drugs, for example, vary in price within a narrow range, while raw materials including most farm products are subject to a wide swing in prices. The graphs show that during 1917-1919 the farmers of the country were at an advantage and in consequence farming was very profitable. Since 1920 farmers have been at a disadvantage, and it has become very acute in the last two years. The ratio of prices received by farmers to prices paid by them was 87 percent in 1926, and in January, 1933, the ratio had dropped to 49 percent.

*These curves are plotted from tabulations published in *The Agricultural Situation*, a pamphlet issued monthly by the United States Department of Agriculture. The statistics are compiled by bureaus of the Federal Government. All price data are weighted before averaging.

†The fluctuating value of the dollar is the objectionable feature of our monetary system. Under some other monetary systems the price level could be held within much narrower range.

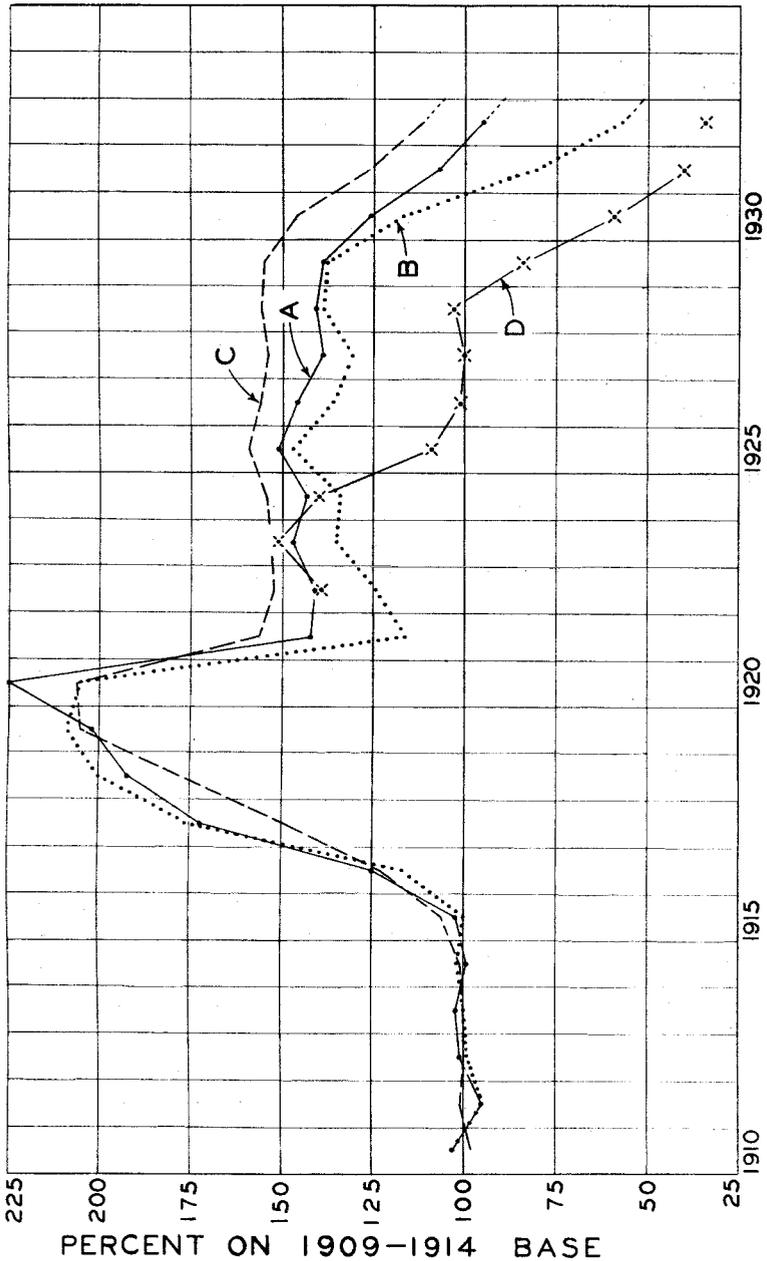


Fig. 1.—A study of price trends from 1910 to 1933. Curve A is for the average all-commodity price level, and shows the drop since 1929 to a level lower than that of 1910. Curve B is for the average prices of farm products in the United States, and Curve C is for average prices of commodities which farmers purchase. They show that relatively the prices of farm products are not only very low at the present time as compared with pre-war and post-war prices, but are low compared with prices of other commodities, especially those that farmers buy, such as farm equipment. Curve D is for the price at Phoenix of Upland cotton for the period of time for which price data are available.

Two results of the present situation stand out prominently:

First, in the case of a farmer who is entirely clear of debt, his average cash receipts now are only one-half as much as for the same crop quantities before the war, and yet for his purchases he pays slightly higher prices than before the war. Probably he makes few purchases and is not replacing worn-out machinery and practices diversified agriculture, as otherwise his balance would not cover even his absolutely necessary living expenses. He can retrench, do subsistence farming, and wait for another period of general prosperity (high price levels).

Second, if the farmer is in debt, the situation is immeasurably worse. The debt is for a fixed sum in terms of dollars. Neither the principal nor the interest falls as the price level falls, nor do they rise together. If a man loaned a sum of money in 1915 and the loan was repaid in 1919, the man received back only half as much in general purchasing value as he had loaned. Presumably he reinvested at once and unless he was a fast thinker, he probably was not aware of his loss. If a loan of money was made in 1919 and was repaid in December, 1931, the creditor received twice as much in value as he had given. He might not appreciate his good fortune, but the debtor, if a farmer, would realize that the dollar had changed in value for it would take three times as large quantities of (average) farm products to pay the debt as would have been required in 1919. In June, 1932, it would have required four times as much. Under 1932 conditions, farm prices were so low that payments on debts could not be made at all from ordinary farm operations.

In the examples cited above, manifest injustice is done in each case. There is this distinction, however, that during inflation the creditor can adjust his affairs to the loss, while the debtor, when the injustice falls on him, cannot make an adjustment, at least not easily, and in most cases not at all. It may be added that there is a small speculator class which profits by fluctuations in price level, for they aim to make money from day to day on both upswings and downswings.

It would be more nearly correct to say that the descending price level has caused the depression than to say that the depression has caused the low price level.

FARM LOSSES AND INSOLVENCY

The bonded indebtedness of an irrigation (or drainage) district in Arizona involves an interest payment, usually 3 percent semi-annually, for the first 10 years, and thereafter the interest payments and an additional sum each year to amortize the block of bonds falling due. The

payment of these charges when due depends upon the prompt payment of district taxes.

A farmer with no reserve funds brought over from the previous year, may receive a seed loan from the Federal Government, and may mortgage his crop for certain operating costs and living expenses. After the sale of the crop there is no money left for taxes and interest, and the net result of the year's labor is added indebtedness.

The principal cash crop cultivated on the irrigation districts in Arizona has been Upland cotton, the lint of which averages very close to one inch in length. The outlay cost of production, averaging the records of many farms, allowing 75 cents a horse for a 10-hour day (or 90 cents for a small tractor), 50 cents per 100 pounds for picking (an extremely low price) and 30 cents for ginning, and \$8 per acre for water tolls (to cover cost of electric power and wages of water master), is \$27.80 per acre. It is assumed that the farmer does all of the man-labor up to picking time, and gives his labor gratis; during the harvest he is kept busy superintending the picking and hauling to the gin. The average production does not exceed 360 pounds of lint cotton and 700 pounds of seed, worth, at 1932 prices, \$21.60 and \$3.50 respectively, or a total of \$25.10. The difference between the cost and the returns is \$2.70 per acre. No provision is made for family living expenses or running expenses of a cheap automobile. Under such circumstances, not one dollar can be paid for taxes or interest or for repairs and replacements of equipment.

An analysis of alfalfa production in 1932 shows results equally unfavorable. There are a few small areas within the districts planted to citrus crops, but very few of the orchards have reached the production stage, and furthermore the citrus industry is not a correct basis for consideration, since only a comparatively small part of the total area in districts is considered as citrus land.

Pima long-staple cotton produces less lint per acre, but on suitable soil has yielded higher net returns in recent years, and probably will continue to do so, at least so long as its tariff protection continues. It is not planted on the lands of the districts because it requires rich soil which has been in alfalfa for several years.

The price trend of Upland cotton at Phoenix since 1922 is shown as Curve D in Figure 1.* The price at which the 1932 crop was sold, 6

*In order to make the Curve D comparable with Curves A, B, and C, the average yearly prices were smoothed by a 3-year moving average, except for the last year; then using the 1922-1925 average price as a base, the yearly prices were computed as percentages, and the percentages were then reduced to the 1910-1914 farm-products base. The price data were furnished by Dr. G. W. Barr, Extension Economist, University of Arizona.

cents per pound at Phoenix, was at a level of only 34 percent of the 1909-1914 base as compared with an average price level of 134.5 for the period 1922-25. The average farm-products price level for the United States in 1932 was 57 percent of the 1909-1914 base. Cotton in Arizona was in an extremely unfavorable position in 1932 as compared with the 1922-25 period.

The period 1922-25 is used for comparison because it was during that time that most of the irrigation district bond issues were voted and sold. No one foresaw the plunge of prices which ensued. Indeed, agricultural prices were then below the general price level as can be seen by comparing Curve B with Curve A, and it was expected that through some Federal legislation farm prices would be raised relatively to other prices.

In recent years, although farmers have worked assiduously, they could not pay district assessments (except water tolls paid in advance) nor State and county taxes. Consequently, the county treasurers could not cash interest coupons as they fell due, and with few exceptions every irrigation district that has bonds outstanding has defaulted. In some cases, as shown in the table, the defaults began in 1929, but in all cases the payments have been continued as long as taxes could be collected.

MORALE OF FARMERS

The realization that indebtedness was mounting, that their equity in the land had disappeared and personal assets, such as livestock and farm equipment, were fading away, with living standards reduced to low levels, has weakened the morale of the farmers. In hundreds of cases they have given up and abandoned their farms. In some cases they remain because there is no place for them to go. Others remain, hoping for some sort of miracle which will save to them their farms.

In the old settled regions of the East, farming is a mode of living, mortgages are the exception, and families are intensely attached to their homes. In the irrigated West, farming is a business, and, partly because of the desire to control as many acres as possible, heavy indebtedness is the rule. The ordinary mortgages on lands within the districts are really second mortgages, since the bonded indebtedness is the first claim. Chattel mortgages, also, are common.

The joint liability feature of district bonds has various effects. If there are but few delinquencies on the part of landowners, the remaining landowners carry the added burden without great difficulty. But, if there are a great many farmers delinquent in taxes and assessments, the remaining farmers who perhaps might continue paying, become discouraged and rebellious, and refuse to make any more payments. It becomes apparent to them that the load is, or soon will be, greater than

they can bear, and they know that it is not advisable "to throw good money after bad." Consequently, in a time of general failure, the joint-liability feature defeats its own purpose.

With the collapse of the morale in a district come two additional ill effects. Without the constant care so much needed, farm buildings deteriorate, doors and windows disappear, roofs leak, fence wire is stolen, weeds thrive and multiply, lands are washed and gullied. Secondly, unable to collect assessments, the district officials can no longer maintain the canal system properly, its carrying capacity is reduced by silting, by caving, and by algae, and, if the project derives its water from wells, the pumps and motors and substations, one by one, fall into disuse.

LAND VALUES

The price level of agricultural land is determined largely by its earning capacity. During the war prices soared to absurd heights. If lending agencies had insisted on conservative values for mortgage purposes, the after-effects would not have been so serious. Since 1929 the prices of land have fallen very low. When earnings fall to zero, land ordinarily still has some speculative value, but no one will buy land at any price in a district with outstanding bonded indebtedness when similar land elsewhere can be purchased for less than the per-acre indebtedness. If the indebtedness is \$100 per acre, and similar land is selling at \$75, the district land is worth \$25 less than nothing. This explains why land sales in the districts have ceased. The salability of the land suffers additionally when tax and assessment delinquencies begin, because of the joint liability feature of the bonds.

TAX DELINQUENCY

State, county, and school district taxes are kept separate from irrigation and drainage district assessment-taxes on the county treasurer's books. The former cannot be paid without payment at the same time of the district taxes, which ordinarily are much greater in amount.

It has been not uncommon for the irrigation or drainage district taxes to be paid alone, since the State and county taxes of any year are not advertised for tax sale until October of the following year, and a 3-year redemption period after a tax sale is allowed. The landowner's first interest is the welfare of the district and he is vitally concerned in maintaining its credit and its solvency.

In the present great depression, however, the majority of landowners have been unable to pay any of the taxes whatsoever, and the few who

could do so ceased to pay when convinced that the districts could not be kept solvent.

As could be expected, there have been no bidders at tax sales, and the lands therefore have been "struck off" to the State of Arizona. When the redemption period expires, deeds will be executed to the State. Any private mortgages on such lands are wiped out, since tax liens are prior in interest to mortgages. The bonded indebtedness continues, but it cannot be enforced against the State. The State does not want the land, for no one will buy it with the bonded indebtedness against it. A condition of stalemate results, and meanwhile the irrigation and drainage systems deteriorate and interest charges accumulate.

It is preferable for the State and the county to compromise the delinquent taxes on district lands for small sums rather than to take title to the land, provided, however, that the irrigation district can be restored to solvency and made to function, and the lands become a source of tax revenue again. The argument does not apply to lands other than district lands.

LOSS TO COMMUNITY

The growth and development of a community in population and wealth excites universal gratification; community disintegration is a tragedy. Controlling great water supplies and reclaiming the desert thrills the imagination; to let the constructed projects now revert to the desert is akin to defeat. The economic and social values in engineering works and farm homes should be salvaged so far as possible.

Along with the building of a project comes the growth of one or several towns. When the district is prosperous, the towns prosper. With the downfall of a district, merchants feel the loss of trade, banks are weakened, churches and other social institutions suffer. The loss of taxes is felt by school districts, by counties, and by the State.

In some cases a nearby city is dependent to a large extent upon an irrigation district for its supplies of fresh dairy and garden truck products. This dependence is not appreciated fully until the supply is interrupted.

It follows, therefore, that in the efforts that must be made to reorganize defaulting districts, the cities and towns and the county must give their earnest efforts and must be prepared to make some sacrifices. Local banks and other mortgagees, and the holders of district warrants should be willing to make adjustments; the bondholders should not be expected to bear the whole burden. Furthermore, it should not be inferred from the above discussion that the district obligations and back taxes should be reduced more than is necessary to restore solvency and to insure the

IRRIGATION, DRAINAGE, ELECTRICAL, AND POWER DISTRICTS IN ARIZONA

NAME OF DISTRICT	SECRETARY	LOCATION	Year Organized	Area January 1933	*Irrigated 1932	BONDS			STATUS	REMARKS
						Voted	Sold	Outstanding		
				Acres	Acres	Dollars	Dollars	Dollars		
COCHISE COUNTY										
San Pedro Municipal Irrigation District.....	J. N. Curtis.....	St. David.....	1920	35,000	1,200	0	0	0	Inactive.....	Includes two operating mutual companies.
GRAHAM COUNTY										
Gila Valley Irrigation District.....	J. M. Wilson.....	Safford.....	1923	57,257	30,000	0	0	0	Preliminary stage.....	Includes 13 mutual companies. In default since January, 1932. In default since January, 1933.
Thatcher Drainage District.....	Lorenzo Watson.....	Thatcher.....	1920	1,100	825	40,000	40,000	38,000	Operating.....	
Central Drainage District.....	H. L. Norton.....	Central.....	1922	1,600	1,200	24,000	24,000	23,000	Operating.....	
GREENLEE COUNTY										
Franklin Irrigation District.....	J. F. McGrath.....	Franklin.....	1922	5,000	2,100	0	0	0	Preliminary stage.....	Includes several mutual companies.
MARICOPA COUNTY										
Queen Creek Irrigation District.....			1912	33,000	-----	350,000	0	0	Dissolved.....	Default since January, 1931.
Verde River Irrigation and Power District.....	W. H. Bartlett.....	Phoenix.....	1918	99,441	0	23,000,000	0	0	Preliminary stage.....	
Roosevelt Water Conservation District.....	C. M. Miller.....	Higley.....	1920	40,661	11,350	3,950,000	3,813,000	3,813,000	Operating.....	
Leon Irrigation District.....			1921	1,200	-----	0	0	0	Dissolved.....	Tax levy in 1922 only.
St. Johns Irrigation District.....	Robt. Holmes.....	Laveen.....	1921	2,267	400	30,000	0	0	Operating.....	Default since July, 1928.
Southside Irrigation District.....		Buckeye.....	1922	1,331	0	130,000	95,600	95,600	Inactive.....	
Buckeye Water Conservation and Drainage District.....	C. A. Narramore.....	Buckeye.....	1922	20,258	11,000	291,000	291,000	291,000	Operating.....	Default in part January, 1933.
Queen Creek Irrigation District.....	Raymond Allee.....	Higley.....	1923	6,786	2,300	300,000	125,000	125,000	Operating.....	Default since July, 1931.
Roosevelt Irrigation District.....	Wm. Mishka.....	Buckeye.....	1923	41,335	20,300	3,065,000	3,065,000	3,065,000	Operating.....	Default since January, 1932.
Arizona Water Conservation District.....	Hazel B. Green.....	Wittman.....	1923	15,635	0	3,157,000	0	0	Preliminary stage.....	No default.
New State Irrigation and Drainage District.....	F. C. Henshaw.....	Phoenix.....	1924	2,374	2,000	112,000	106,000	106,000	Operating.....	
Maricopa County Municipal Water Conservation and Drainage District No. 1.....	Nina McNulty.....	Beardsley.....	1925	38,810	10,000	5,750,000	4,500,000	4,500,000	Operating.....	Default since January, 1929.
Gila Water Conservation District.....	E. D. Green.....	Gila Bend.....	1927	4,978	1,010	365,000	0	0	Inactive.....	Default since July, 1928.
Maricopa County Southern Water Conservation District.....	Ida N. Losch.....	Gila Bend.....	1928	85,000	15,000	0	0	0	Inactive.....	
South Chandler Water Conservation District.....	W. C. Adams.....	Goodyear.....	1929	8,000	5,000	480,000	0	0	Inactive.....	Default since July, 1928.
Chandler Heights Citrus Irrigation District.....	Emma P. Howey.....	Chandler.....	1929	5,500	800	0	0	0	Preliminary stage.....	
Camelback Water Conservation District.....	E. F. Young.....	Phoenix.....	1929	3,315	100	516,000	0	0	Preliminary stage.....	No default.
Maricopa County Drainage District No. 1.....	L. E. Reddon.....	Tempe.....	1914	9,320	-----	75,000	75,000	33,000	Operating.....	
Maricopa County Drainage District No. 2.....	E. C. Adams.....	Tempe.....	1917	6,000	-----	133,200	50,000	15,300	Operating.....	No default.
Maricopa County Drainage District No. 3.....		Tempe.....	1917	-----	-----	0	0	0	Inactive.....	Should be dissolved.
Maricopa County Drainage District No. 4.....	F. C. Henshaw.....	Buckeye.....	1919	-----	-----	400,000	0	0	Dissolved.....	Default since July, 1928.
Maricopa County Drainage District No. 5.....	F. W. Rosenfeld.....	Phoenix.....	1920	2,910	1,000	100,000	95,500	85,000	Operating.....	
Maricopa County Electrical District No. 5.....	Basil Peterson.....	Mesa.....	1930	35,328	600	0	0	0	Preliminary stage.....	
NAVAJO COUNTY										
Woodruff Irrigation District.....	Jos. Brinkerhoff.....	Woodruff.....	1922	640	600	25,000	0	0	Operating.....	
PIMA COUNTY										
Rillito Irrigation District.....		Tucson.....	1921	980	-----	0	0	0	Inactive.....	Should be dissolved.
Flowing Wells Irrigation District.....	P. M. Arend.....	Tucson.....	1922	2,568	1,400	167,000	156,000	151,500	Operating.....	Default since July, 1931.
Jaynes Irrigation District.....	W. I. Walsh.....	Tucson.....	1922	975	350	63,000	63,000	63,000	Inactive.....	Default since January, 1928.
Santa Cruz Valley Irrigation District.....	Leopold Walloth.....	Marana.....	1924	14,500	2,900	0	0	0	Inactive.....	Water supply operated by a commercial water company.
PINAL COUNTY										
Jasa Grande Valley Irrigation District.....	Warren Davidson.....	Casa Grande.....	1912	35,000	-----	-----	0	0	Inactive.....	Should be dissolved.
Maricopa Irrigation District.....	Louis Rowland.....	Maricopa.....	1922	25,000	-----	-----	0	0	Inactive.....	Should be dissolved.
San Carlos Irrigation and Drainage District.....	R. W. Kenworthy.....	Florence.....	1928	50,000	39,481	-----	-----	-----	Operating.....	Built by Federal Government.**
Randolph Irrigation District.....	S. P. Soule.....	Randolph.....	1929	8,840	175	624,000	0	0	-----	Private pump systems operating.
Pinal County Electrical District No. 2.....	F. C. Templeton.....	Casa Grande.....	1923	128,000	5,645	529,000	457,000	457,000	Operating.....	No default.
Pinal County Electrical District No. 3.....	F. T. Rainey.....	Maricopa.....	1926	60,000	0	290,000	0	0	Inactive.....	Taxes assessed in 1926 and 1931.
Pinal County Electrical District No. 4.....	J. M. Sawtelle.....	Eloy.....	1929	105,000	3,000	250,000	175,000	175,000	Operating.....	No default.
YAVAPAI COUNTY										
Chino Valley Irrigation District.....	H. C. Postle.....	Chino Valley.....	1925	2,530	1,200	85,000	0	0	Operating.....	
YUMA COUNTY										
Cibola Valley Irrigation District.....		Cibola.....	1913	17,094	-----	78,975	0	0	Dissolved.....	Bonds destroyed.
North Gila Valley Irrigation District.....	W. J. Harrison.....	Yuma.....	1918	4,880	4,600	40,000	0	0	Operating.....	
Yuma (South Gila Valley) Irrigation District.....	John Doan.....	Yuma.....	1919	10,100	2,600	60,000	60,000	40,000	Operating.....	Default January, 1933.
Yuma Mesa Unit A Irrigation District.....	C. H. Colman.....	Yuma.....	1919	4,500	60	1,100,000	0	0	Inactive.....	Default since July, 1932.
Gila Valley Power District.....	Chas. M. Hindman.....	Wellton.....	1921	80,000	6,000	300,000	255,500	255,500	Operating.....	
Antelope Valley Irrigation District.....	Mrs. W. Proebstal.....	Wellton.....	1922	8,226	-----	0	0	0	Dissolved.....	Not yet approved by Federal Government.
Araby-Yuma Mesa Irrigation District.....	A. J. Eddy.....	Araby.....	1922	16,758	50	0	0	0	Inactive.....	
Mohawk Municipal Water Conservation District.....	Howard H. Cudworth.....	Roll.....	1923	18,196	4,000	500,000	500,000	500,000	Operating.....	Default since July, 1931.
Centennial Irrigation District.....		Salome.....	1926	2,130	0	0	0	0	Inactive.....	Should be dissolved.

* Approximate.

** Built and operated by the Federal Government under contract with the District. A one-half interest in the project is held for the Pima Indians.

utilization of the land and the water supply. It is doubtless true that portions of the bond issue are held by people in modest circumstances, and in those cases at least the readjustment of the indebtedness entails real hardship.

THE POSITION OF THE BONDHOLDERS

LEGAL REMEDIES

Into the fabric of the irrigation (or drainage) district act are woven many provisions especially designed to give security to the bondholders, one object being to make district bonds salable. For this purpose the assessments are levied and collected at the county courthouse by county officials, bonds are certified by the State auditor after the State certification board has passed upon them, the bonds are tax exempt, and the lands within the district are jointly liable for the indebtedness. The assessments levied for bond interest and principal and other purposes are a lien against the land of equal force to the liens imposed by county and State taxes. From 1918 until about 5 years ago the reputation of district bonds in the securities markets was good. The maximum sales of bonds for a single year occurred in 1925.*

The bondholders' remedies were assumed to be adequate. Bondholders or their agents can mandamus the supervisors to levy the assessments as taxes, and these taxes are subject to tax sale the same as State and county taxes. There is no question that bondholders can acquire the lands of defaulting districts through purchase at tax sale; the question is whether it is to their advantage to do so. The bondholders cannot "foreclose" in the manner followed at times by holders of railroad and other corporation bonds; they cannot force a receivership; they cannot interfere with the water rights, which are appurtenant to the land. Their remedy is to purchase the delinquent taxes and if there is no redemption within 3 years, they can obtain title to the land. Preferably this should be done before the lands are "struck off" to the State for taxes, on account of the penalties and high interest rate accorded tax purchasers. Bondholders, of course, can hold their bonds as inviolable and demand full payment, but under present conditions in many of the districts this course will result in ultimate total loss.

If the bondholders buy the delinquent taxes and acquire title to lands, they must assume control and management of the lands. They may employ watchmen; with high costs for water and low prices for products, it is not possible to obtain much, if any, return as rental. To

* Tech. Bul. 254, U. S. Department of Agriculture, p. 34.

obtain new settlers would require a selling campaign, with commissions of 10 percent or more to salesmen, and the price per acre would have to be set low as compared with the indebtedness per acre. Buyers would require long terms. The bondholders would need to set up a competent organization with various classes of trained employes, for ultimately the organization would control and operate the canal system. In most cases considerable expenditures would be required for repairs and betterments, and a considerable working capital must be obtained in some way. State and county taxes must be paid. The procedure could result only in ultimate heavy losses, just as commercial irrigation companies have in most cases been failures.

COMPROMISE IS THE BEST SOLUTION

The only hopeful solution appears to be that of compromise between the parties in interest. As happens at various times in social and economic relations, there is ultimate advantage in making sacrifices. The half of a loaf, or even the sixth part of a loaf, is better than no bread at all.

The present depression is so deep and of such long duration that widespread liquidation necessarily results. Some of it has been violent, such as bank failures. But much of it has been, or will be, carried out quietly, at minimum expense, by negotiation. For example, insolvent manufacturing companies sell plant and business to companies in sounder condition and perhaps take stock in payment. Bondholders of establishments like great hotels have accepted less than 25 cents on the dollar. Often certain classes of creditors receive nothing. When stocks and bonds of a corporation are sold at a fraction of their prices several years ago, it is virtually equivalent to compromise liquidation so far as results to the sellers are concerned. New national legislation included in the emergency banking act and in the additions to the bankruptcy act is greatly facilitating compromise reorganizations of railroads, banks, and individuals.

Deflation is always painful. Reducing a debt level to the price level is disagreeable but, as in the case of bitter medicine, it is wiser to take it than to stand and contemplate it. One of the purposes of this bulletin is to point out the desirability of speedy action. The insolvent districts should be reorganized before the "medicine" becomes more bitter.*

Bondholders of a district should not hold a grievance against the

* If the price level should rise materially, by reason of reflation or other cause, the readjustment would be facilitated. In some cases perhaps the only concession required would be the cancellation of the accumulated defaulted coupons to permit a fresh start.

landowners. The latter may or may not have exercised poor judgment in their plantings, but they have tried to make their farms pay. They cannot be held responsible for the deflation and the consequent depression. They themselves have lost heavily. Not only is their equity in the farms lost forever, but personal property is encumbered with chattel mortgages. They have worked in the fields through the long days and have received as reward only the barest living. Many of them are excellent farmers and can accomplish better results on the farms than a new crop of settlers recruited from the cities. If the bondholders do retain any sort of financial interest in these lands it will be to their advantage to try to retain a large proportion of these farmers.

A small minority of landowners are men with other resources, who can continue to pay taxes. But when the great majority default, throwing the whole burden on the few, the equities of these few become worthless. They cannot be expected to sacrifice their other assets voluntarily to save the creditors of the district, nor can they be held legally to do so.

REORGANIZATION

PRELIMINARY STEPS

In the case of a small district, and in a case where the bonds are held by one or a few persons who have personal acquaintance with the district, a settlement whereby the district may continue to function may be, and should be, negotiated in an informal manner.

If the bonds are scattered widely, and few of the bondholders have even seen the district, more formality is needed. Landowners can act through their elected board of directors. Bondholders should select a committee to act for them. It may be necessary for a group of the largest bondholders to propose a committee and ask all of the bondholders to confirm the selection.

It is desirable that a small group or committee of business men, bankers, or state or county officials act as intermediaries and sit with the bondholders' committee and board of directors during negotiations. Such a group, or at least one man to act as chairman, might be selected by the chamber of commerce of a nearby city or by the county supervisors or by the judge of the U. S. District Court. It is assumed that the intermediaries will serve without pay.

Scattered bondholders may be reluctant to intrust their interests to a committee, with power to negotiate a settlement. Therefore, the business associations and reputation of the men proposed as committeemen should be set forth in a circular letter. Also, another letter descriptive of the

affairs of the district should be issued by the chamber of commerce or some other local agency.

A blank "bondholders' agreement" granting powers of attorney to the committee should then be mailed to each bondholder, requesting that he execute and return it, and deposit his bonds with a depository, perhaps a bank in the county seat or in some larger city.

The steps, therefore, are as follows:

1. Initiation by some local body.
2. The bondholders must be found and contacted.
3. A letter describing the condition of the district and setting forth the proposal to reorganize.
4. Selection of a committee by bondholders and selection of depository.
5. Obtaining executed bondholders' agreements and the deposit of bonds.
6. A meeting of the bondholders' committee with the board of directors of the district, preferably near the district, and including inspection of the district and of the books of account and of the county treasurer's records.

The proceedings to this point may follow the lines provided by the Arizona legislature in 1931 (Session Laws, First Special Session, Tenth Legislature, Chap. 8) and amended in 1933 (Session Laws, Regular Session, Eleventh Legislature, Chap. 37). It is there provided that the board of directors of an irrigation district, or a bondholder, may petition the State board of certification to call a meeting of the holders of all the outstanding bonds. The State board shall then call a meeting for a hearing of the petition, fixing the time and place, and shall give notice by publication for at least 10 days in a newspaper of the county. At the meeting they shall hear evidence for and against the granting of the petition. If the petition is granted, the State board shall immediately call a meeting of the bondholders to be held at the State House, not less than 60 nor more than 90 days thereafter. Notice of the time, place and purpose of the meeting shall be given by publication for at least 2 weeks in a daily newspaper of Phoenix and in two issues of a financial journal published in New York.

At the meeting of the bondholders, they shall elect three of their number to act with three selected from the board of directors of the district and the three members of the State board of certification as a joint committee of nine. In voting, the bondholder shall have one vote for each dollar of bonds owned by him, and he may be represented by proxy, but none can vote until his bonds have been deposited with the

State treasurer, to be dealt with by the treasurer pursuant to the provisions of an agreement which it is expected will be reached by the joint committee.

The weak point of this method of bringing bondholders and land-owners together is that presumably only a small percentage of the bonds outstanding would be represented. If this method is followed, it should be supplemented by some active local body, which should endeavor to contact as many as possible of the bondholders and to enlist their cooperation and attendance.

PLAN OF REORGANIZATION

The concessions to be made by the bondholders may be one or more of the following:

1. The bonds may be exchanged for bonds of a lesser amount, or part of the original issue may be cancelled.
2. The dates of maturities may be extended.
3. The date of maturity may be set far ahead, but with substantial discounts for earlier payment.
4. The interest rate may be reduced.
5. Payments may be based on the price level or the farm income.
6. A period of a few years with no interest may be provided, during which time perhaps much needed and overdue repairs and betterments of the irrigation works may be made.
7. The bonds may be surrendered for a small cash payment, if the district can secure the cash from some source; or the consideration may be part cash and part refunding bonds.
8. Individual liability may be granted, in order to improve the morale of the district.
9. The district may be dissolved and replaced by an incorporated mutual water company or by a commercial company.
10. In some cases a reduction in area will be found necessary or advisable.

Merely for the parties to sit together at a table for some hours does not insure that they will agree upon terms of a settlement. Bondholders justifiably will desire to concede as little as possible. Both sides should bear in mind that the settlement must be based on capacity to pay, and that if the terms are too harsh, it may be only a few years

before another reorganization is required. In most cases it will require the collection and the analysis of much data to determine the capacity to pay. Questions will arise respecting yields and prices and costs of production, can the cropping program be improved, can the cost of water be lower, what reconstruction is required in the near future? Unless all such facts are available, surveys should be instituted, as follows:

1. The adequacy of the water supply and the condition of irrigation and drainage works. The area must be based on the reasonably certain water supply and the functioning of the engineering works.

2. The character of the soil. Some areas may be known to exist within the project with soil so loose as to require unreasonable quantities of water or so tight and infertile or so alkaline that they are unproductive. For the good of all parties, it may be desirable to exclude such areas.

3. The agricultural program. In other states there have been notable cases in which projects have been saved by changing the cropping program, as from cotton to dairying or from single cropping to diversified farming.

4. The economic problem. This includes not only the finances of the district, but the acre-costs of production and returns of each crop, the upkeep of farm equipment and the probable State and county tax burden, which should be a preferred charge to be provided before arriving at the amount that can be paid as investment charges. Conceivably it may be determined that for a year or two nothing but subsistence farming should be attempted, or that the agreement should have some elasticity dependent upon the future market prices. Certainly it is to the bondholders' interest to prevent landowners sinking more deeply in debt and in general to keep them solvent. A feeling of partnership should prevail in the conferences.

The above problems should be examined and the results set forth in written reports, and expert assistance should be obtained. In Oregon, the only state * in which a determined policy of financial rehabilitation of defaulting districts has been prosecuted and in which excellent progress has been made, the expert assistance has been secured, first, from the Agricultural Engineering Bureau of the U. S. Department of Agriculture, and second, from state agencies including the College of Agriculture. The Bureau, in particular, possesses several competent men highly trained in irrigation economics. The districts in Arizona should endeavor to obtain the help of the Bureau in solving their problems, for

* In California an important financial readjustment has been consummated recently by negotiation. An outstanding bond issue of \$8,100,000 was refunded at a lower rate of interest.

those men are entirely disinterested and will be eminently fair to all the parties concerned. Both the office of the State engineer and the Arizona College of Agriculture could render valuable assistance, and their assistance should be sought.

CONSTRUCTIVE CONSENT

After an agreement has been reached and accepted by the district and by the representatives of bondholders, (either with or without the aid of the State board of certification), and before the plan is put into execution, it is essential that the consent of practically all bondholders be obtained. Besides those who have been present or represented by proxy and who signed the bondholders' agreement, there will be others whose addresses are unknown or who have refused to participate. When the plan is determined, many who would not sign in advance may sign the bondholders' agreement. To prevent the permanent blocking of the reorganization by the unknown bondholders, the statutes provide a method of obtaining their constructive consent, by the following proceedings. The board of directors shall file a petition in the Superior Court reciting the circumstances, whereupon the judge shall direct the district to publish, in a newspaper of the county and in a financial journal of national circulation, a notice describing the bondholders' agreement and essential supplementary matters, and requiring all dissenting bondholders to file in the Court their written dissent or objection. If dissent in writing is not filed within 90 days from the first publication in the financial journal, such bondholders shall be deemed to have consented to the terms of the bondholders' agreement.*

After the expiration of the 90 days, the board of directors shall file with the Court the proof of publication, and the Court shall then hear the cause and shall enter a decree adjudging that all bondholders who have not filed their written dissent have consented that their bonds may be retired or refunded under the terms of the agreement. Thereafter the officers of the district shall deposit with the State treasurer, as trustee, for the unknown persons entitled thereto, their pro rata part of cash or refunding bonds, to be held by him and delivered to those persons upon surrender to him of their original bonds.

* The theory of constructive consent originated in the case of *Gilfillan vs. Union Canal Company of Pennsylvania*, 109 U. S. 401. In 1861 some of the holders of defaulted bonds of the Canal Company entered into an agreement with the officials of the Company. It was necessary to secure the assent of the other bondholders. The legislature of Pennsylvania, on April 10, 1862, passed a law giving authority for such an agreement and providing that, if a bondholder did not file his dissent within the time allowed, he should be counted with those who had given assent. This act was tested before the U. S. Supreme Court, which affirmed its constitutionality.

EXECUTION OF AGREEMENT

It is essential that, all, or nearly all, of the bondholders shall consent to the bondholders' agreement, and the terms of the agreement should require that a certain percentage close to 100 percent must consent before the agreement is executed. Each dissenting bondholder must be dealt with separately.

The execution of the agreement should be carried out by the joint committee of directors, bondholders, and intermediary member or members. If the reorganization has been done under provisions of the statutes of 1931 and 1933, then the joint committee including the State board of certification is endowed with, and has full authority to carry out the terms and conditions of the agreement.*

IN CONCLUSION

Not only for the protection of the bondholders' investment but also for the welfare of the State and for the welfare of the landowners in many irrigation and other districts, it is recommended that steps be initiated for the financial rehabilitation of these districts at once, inasmuch as the condition of the districts is growing steadily worse, and no possible benefit can be gained by procrastination. It is believed, also, that in all cases the creditors of the districts will welcome the opportunity to study the condition of the districts and to participate in the plans for rehabilitation. Boards of directors, county supervisors, chambers of commerce, and the State board of certification are urged to initiate and further these movements for relief of a deplorable and intolerable situation.

*Under the Oregon law, the State reclamation commission effectuates the agreement and executes it. The commission is composed of the governor, the State treasurer and the secretary of State, and the State engineer is the secretary of the commission.