

PART I

GENERAL SUMMARY STATEMENT

Introduction

This report deals with damages to Indians expected to arise from the Oahe and Fort Randall Reservoir and Dam Projects being constructed on the Missouri River by the U. S. Corps of Engineers. Estimated damages to Fort Berthold Indians from the Garrison Reservoir, for which settlement has already been made by Congress, are included for comparison with prospective damages on Standing Rock, Cheyenne River, Crow Creek, and Lower Brule Reservations where settlements are now pending.

For purposes of this report damages are divided into direct and indirect damages. Direct damages are measured by the fair market values of properties as determined by appraisers of the Bureau of Indian Affairs. Indirect damages cover all other forms of loss or injury to Indian people. They constitute the main concern of this report and are grouped under four major headings.

Cost of re-establishing homes, ranches, and the economy of the reservation covers such things as the moving of persons, equipment, buildings, and livestock; of re-establishing homes, farms, and ranches; of overcoming the adverse effects of the reservoirs on the integrated use of resources; and of re-establishing the income-producing capacity of the people and of the resources on the reservation. Estimates of costs for some of these items are necessarily rough, but in general the estimates are based on analyses of field data and are well founded.

Timber, wildlife, and wild product losses are attributable to decreases in the annual harvest of timber, wildlife, and wild fruits and other natural products which will result from the flooding of Indian lands. Quantities of these products are based on past harvests. Monetary estimates are based on gross value of the products to the Indians and therefore are considered liberal. Data for arriving at net values are not available.

Potential increase in value of irrigable land is a small item based on possible net increases in the value of land from irrigation development.

Intangible damages are of many kinds. Certain of these are identified and their nature discussed, but are not evaluated separately because of the lack of a satisfactory basis. However, an amount for intangible damages for the four reservations was derived by comparison with the Fort Berthold settlement.

Basis for Arriving at Total Damages

Because of the special status of Indians in relation to the Federal Government and because of their unique cultural background, Congress has indicated that settlement for takings of Indian land should include funds for relocating families displaced by the reservoirs and for re-establishing and protecting the economic, social, religious, and community life of the Indians affected. ^{1/} Compensation thus was to cover the indirect and intangible as well as the direct damages.

The Fort Berthold settlement ^{2/} provided a basis for arriving at damages to Indians for reservoir takings from the four reservations--Standing Rock, Cheyenne River, Crow Creek, and Lower Brule--which are needed for the Oahe and Fort Randall Reservoirs by relating total damages to direct damages. Total damage to the four reservations was derived by assuming that the ratio of direct to total damages in the Fort Berthold settlement (1 to 3.42) would hold for the other four reservations. Figured on this basis, total damages arising from the taking of Indian properties on the four reservations amount to \$14,804,133. Projected amounts for each major group of damages, except intangibles, are greater for the four reservations than for Fort Berthold Reservation. Explanations of damages are given later in the report. The indicated amounts for the four reservations are merely suggestive and do not necessarily represent the position of the Bureau of Indian Affairs.

Some important items pertaining to the Fort Berthold settlement and estimates for the four reservations are:

<u>Item</u>	<u>Unit</u>	<u>Four Reservations</u>	<u>Fort Berthold</u>
Indian families resident on reservation	No.	1,646	370
Indian families resident on taking area	No.	454	289
Indian farms and ranches to be relocated	No.	161	150
Area of Indian land in reservoir taking	Acre	177,829	152,360
Area of Indian timberland in taking	Acre	27,556	20,250
 <u>Direct damages to Indians</u>			
Market value of properties taken	Doll.	4,328,694	3,654,332
 <u>Indirect damages to Indians</u>			
Cost of re-establishment	"	2,498,867	1,896,927
Timber, wildlife, & wild product losses	"	5,194,985	2,721,086
Potential increased value of irrig. land	"	119,190	267,810
All other damages, mostly intangibles	"	<u>2,662,397</u>	<u>3,947,475</u>
Total indirect damages	"	10,475,439	8,833,298
 Total damages	 "	 <u>14,804,133</u>	 <u>12,487,630</u>

^{1/} Act of September 30, 1950 (64 Stat. 1093) (P.L. 870); and Act of October 29, 1949 (63 Stat. 1026) (P.L. 437).

^{2/} Act of July 31, 1947 (61 Stat. 686); and Act of October 29, 1949 (63 Stat. 1026).

Introductory Background Information

Before reservations were established, the area from which Indians of the Plains could procure their livelihood was restricted only by their desires and by their ability to overcome obstacles presented by the natural environment in which they lived and by the sanctions imposed by neighboring tribes. Territorial limitations imposed by treaties establishing reservations have been successively narrowed through the years so that present Indian holdings constitute but a fraction of the original reservation areas. Even within the present restricted reservations, Indians have lost control of many of the resources. Requirements for the Garrison, the Oahe, and the Fort Randall Dam and Reservoir Projects will reduce the area of Indian land on Fort Berthold Reservation by 26 percent and on the four reservations--Standing Rock, Cheyenne River, Crow Creek, and Lower Brule--by about 6 percent and the present sources of Indian livelihood by several times this percentage.

Prior to domination of the Plains by the white man the favorite camping grounds of the Sioux and other Indians of the Plains were located along the streams where timber for fuel and shelter; water for man and beast; berries, fruits, and seeds for food; deer and small game for food and clothing; and meadows providing forage for horses were most abundant. With the disappearance of the buffalo the Indians became even more dependent on the products from these river bottom areas.

As their movements became restricted and reservations for their occupancy were designated, Indians tended to settle and establish permanent places of abode along the streams where the free products of nature were most abundant. White settlers interested in agriculture generally preferred the broad open uplands suitable for plowing rather than the broken, wooded and brush areas. In the course of a few decades, by one means or another, most of the agricultural land on the reservations became alienated so that present Indian lands on these five Missouri River reservations in the Dakotas are largely suitable for livestock production only. Since the wooded meadows provide excellent ranch headquarters, Indians tended to become more firmly established along the river valleys as their interest turned to livestock raising. Thus these sheltered valleys--the traditional favorite campsites of the roving Indians--became the permanent homes of their posterity.

Indians, particularly the fullbloods, still follow to a considerable extent their traditional customs and ways of life which are closely dependent upon the natural environment. Traditionally, livelihood was procured directly from natural products. Today, as in the past, the wooded valleys and lower hillside slopes provide berries, fruits, and seeds. The timbered areas furnish building materials and fuel. Game birds, deer, and other game are taken from the brush and timbered areas. Beaver and other fur animals

are trapped or hunted along the streams. Water for domestic use and for livestock is obtained from springs, wells, and from streams, including the muddy Missouri. Many present-day Indian families supplement their meager cash income substantially by hunting and gathering natural products.

The sheltered valleys along the streams also provide the best headquarters for livestock ranching operations. These valleys with their interspersed timber and meadow provide protection from the cold winter winds and excellent forage for winter pasture or for hay. The ranch headquarters of Indians engaged in livestock production are usually on the sheltered valley bottom lands along the streams.

The reservoirs behind the Garrison, the Oahe, and the Fort Randall Dams will flood a large portion of these choice valley lands and homesites. The reservoir takings include approximately 90 percent of the commercial timber on Indian lands on each of the five reservations and will destroy a somewhat smaller percentage of the game and natural products useful to the Indians. Approximately four-fifths of the resident Indian families on Fort Berthold Reservation, one-third on Cheyenne River and Crow Creek, one-fourth on the Standing Rock, and one-fifth on the Lower Brule Reservation are or were living within the taking areas. The proportion of Indian livestock dependent on the taking area for winter feed and shelter probably is greater than that of families resident in the area.

The taking of lands for the three reservoirs will seriously disrupt individual and group enterprises. It will necessitate the removal, relocation, and re-establishment of families and of their sources of livelihood. Livestock enterprises will have to be reorganized, new headquarters established, new lands acquired, unuseable severed tracts disposed of, shelter and water developed, and adjustments in farming operations and in living made to new and unfamiliar and undoubtedly inferior conditions. Conditions on the residual parts of the reservations are inferior for ranching and living because they lack extensive wooded areas in protected valleys, generally have poorer quality of soils, and are less well watered than those of the taking areas. Social and economic repercussions of the taking will extend beyond the individual and the immediate locality to the entire reservation. People throughout the reservations have depended on the timbered lands of the taking areas for wood, game, and natural products. Utilization of much of the range land back of the taking areas is integrated with that of lands in the takings which provide shelter and water as well as hay, grass, and other feeds for livestock which graze extensive ranges beyond the takings.

Congress recognized the importance of secondary effects of the takings in Public Law 870 ^{1/}which, in addition to providing for just compensation for properties taken, directed that payment should cover "costs of relocating and reestablishing the tribe and the members of each tribe who reside upon such lands so that their economic, social, religious, and community life can be reestablished and protected:" and "all claims by the Indians and tribes * * * against the United States arising because of construction of the Oahe project." A similar bill covering Indian properties to be taken for the Fort Randall Reservoir is now before Congress. Settlement has already been made for the Fort Berthold taking under Public Law 437. ^{2/}

Considerable progress has been made toward reaching agreement on the fair market value of Indian lands on the four reservations affected by reservoir takings for the Oahe and Fort Randall Projects. Agreement has been reached between negotiators for the tribe and the Corps of Engineers on a value of \$1,575,000 for properties to be taken on the Standing Rock Reservation. The Corps of Engineers has accepted MRBI appraisals of Indian properties in the Fort Randall takings from the Crow Creek and Lower Brule Reservations except for nine tracts of land belonging to Lower Brule Indians. Extensive negotiations between the Cheyenne River Reservation Indians and the Corps of Engineers have, as yet, produced no agreement. The lowest value acceptable to the tribe at present is \$2,500,000; the Corps' best bid, \$2,000,000; the MRBI appraised value as of November 1951, \$2,053,117.

Although full agreement has not been reached on property values, the major item in dispute is the magnitude of secondary costs and losses and intangible damages. Wide differences of opinion regarding these have prevented negotiators representing the United States and the various Indian tribes from getting within negotiating range on a total settlement price for all properties, costs, losses, and damages growing out of the takings of Indian lands for the Oahe and Fort Randall Projects. It appears that the question of a just settlement eventually will have to be referred to Congress for final decision.

Arrangement of Report

This report is divided into two parts. The first consists of a comprehensive summary statement and table 1 containing a summary of statistical data. References in parentheses, i.e., (4), in the textual material, refer to item numbers in table 1 which, when unfolded, can be referred to readily while the text is being read. Part I is designed to give the reader an over-all but still fairly adequate view of the findings and conclusions of the study with a minimum of detailed supporting materials.

^{1/} Act of September 30, 1950 (64 Stat. 1093).

^{2/} Act of October 29, 1949 (63 Stat. 1026).

Part II contains the supporting data and explanations. It includes detailed statistical tables, explanations of their contents, listings of sources from which these data were derived, and explanations of assumptions on which estimates were founded. At the end of the report is a map showing the Indian reservations and the dams and reservoirs which encroach upon them.

Indian People Affected by the Takings

Indians residing in the taking areas will be most immediately affected by the flooding of Indian lands, but the loss of timber and the destruction of most of the game habitats and fruit-bearing shrubs will be felt by residents throughout the reservation. Loss of sheltered timber areas, watering places and hay meadows will affect many livestock producers living outside the taking areas. The removal of school, church, community, and agency facilities will affect all persons now making use of these facilities. Tribal members residing away from the reservation will also be affected through family ties and because of property interests in tribal and allotted lands.

Approximately 1,646 Indian families (1) representing 6,544 enrolled members of the tribes resided on the four reservations. There were 3,924 enrolled members living away from the reservations, making a total enrolled membership of 10,468. The percentage of enrolled members residing on the reservation varies from 86 for the Crow Creek to 53 for the Cheyenne River Reservation. The average for the four reservations is 62 percent.

At the time of recent surveys, 454 families were residing in the taking areas of the four reservations (2). Families in the taking areas constituted 78 percent of the resident families on the Fort Berthold Reservation compared with from 34 to 16 percent on the other reservations (3).

Indian ranches and farms, like homes, tend to be concentrated along the streams so they are relatively numerous in the taking areas. The total number of farms or ranches on the four reservations which will have to be relocated because of the reservoirs is estimated to be 161 (5) which is nearly one-third of all farm and ranching units operated by Indians on the four reservations--the proportion that will have to be moved ranges from 9 percent on Crow Creek to 40 percent on Cheyenne River Reservation (6).

Indian Owned Land on the Reservations

Acreage in Indian ownership has decreased greatly over the years. Before the reservoir takings, only 2,928,070 acres (7) of the 5,663,150 acres within the boundaries of the four reservations remained in Indian ownership--1,910,302 acres (65 percent) had been allotted to individual Indians, while 1,017,768 remained in tribal ownership. In addition to Indian land, there are 51,933 acres of United States land under Indian administration on the four reservations.

The land ownership pattern differs from reservation to reservation and within the reservation. Checkerboard pattern of Indian and white ownership occurs throughout most reservations but Indian lands tend to be concentrated in certain localities such as along the streams in Cheyenne River and Standing Rock Reservations. The Cheyenne River Reservation contains extensive acreages of tribally owned land, much of which is in large unbroken blocks.

Indian land is mostly range land. The 2,980,003 acres under Indian administration are classified as follows: cropland 3.5 percent, grazing land 95.2 percent, and timberland 1.2 percent.

The Missouri River reservoirs will reduce Indian lands an additional 177,829 acres (8). The reduction at Fort Berthold was 26 percent and for the other reservations will be around 6 percent (9). The land classification in the appraisal schedules of the taking area was not identical with that for the residual reservations but available data indicate that the taking will decrease acreages on the five reservations approximately as follows: cropland 14 percent, pasture 15 percent, grazing land 6 percent, and timberland 80 percent. These percentages will differ among the reservations. Most of the cropland loss was on Fort Berthold, whereas percentage loss of timber will be about the same for all reservations. Most of the tribal land on Fort Berthold and a sixth of that on Lower Brule is in the taking area. The largest acreage of tribal land in the takings (58,444 acres) is in the Cheyenne River Reservation but this constitutes only 7 percent of all tribal lands of this reservation.

Value of Indian Properties in the Taking Areas

Appraisers on the Missouri River Basin Investigations Project staff made an appraisal of Indian properties in the taking areas of the five reservations. All appraisals were at fair market values.

On all reservations except Fort Berthold, appraisals were based on values as of November 1951. Land values shown in table 1 are exclusive of all mineral, gas, and oil values but include the commercial value of standing timber. The timber appraisal was based on quantities of timber determined by a timber cruise and estimated stumpage value. Value of properties in the taking areas of the four reservations amounted to \$4,328,694 (16)-- distributed percentage-wise as follows: land 71, improvements 18, timber 9, and severance to allotted land 2 percent.^{1/}

Cost of Moving and Re-establishment

Since most of the better sites for dwellings and for farm and ranch headquarters are within the taking areas, families displaced from these sheltered valley locations usually will have to re-establish on the open upland plains where a less hospitable and more rigorous climate prevails, or will have to leave the reservation. To provide displaced families, under either of these choices, with the same degree of comfort and convenience and the same income opportunities as the present situation affords, will require more funds than the fair market price received for properties taken.

Dwellings will need to be better insulated and better equipped. Shelters and sheds for protection of livestock and fences for their control will have to be erected. Water for domestic use and for livestock will have to be developed and stored. Lands to replace those taken will have to be purchased. Employment for the wage earners in families not engaged in farming or ranching will need to be found.

The cost of moving and re-establishing families displaced by reservoirs will be dependent on a variety of factors. Among these are the kind, quantity and size of things to be moved, distance between the old and the new location, differences between the old and the new condition, size of the farming or livestock enterprise, condition of the improvements to be moved, and numerous other things. While the estimates in this report are given in considerable detail in some instances and are based on the best available information, only rough approximations of costs were possible for a number of items. In some cases, only averages of a considerable range in individual costs are given. Detailed on-the-spot surveys will need to be made in order to provide adequate estimates of the cost for individual families under specific conditions. Making of these estimates will be part of the removal and re-establishment programs.

^{1/} Data in table 10, page 44, contain certain mineral values and severance to tribal land which are not included in the above figures so percentage distribution is slightly different.

In estimating the cost of re-establishing the living facilities of Indian homes and ranches and of restoring the income-earning capacity of Indians and Indian investments adversely affected by the three Missouri River reservoirs, every effort has been made to take into account the particular circumstances under which the Indians are living and those under which removal and re-establishment are likely to occur. The assumed requirements are thought to fit the general circumstances and the over-all cost estimates to be realistic and adequate. Details regarding the bases used in estimating costs are presented later in the report. However, brief mention of a few items may be helpful at this point.

Cost of moving and relocating personal properties and persons includes payment for the time needed by a rancher to locate and acquire a new ranch and for the time required by the job holder to find a new job. When Pine Ridge Indians were forced to vacate the Aerial Gunnery Range in 1942, much hardship was occasioned, not only by the inadequacy of the payments for lands taken but also because of the limited time available to acquire new homesites. Their means of livelihood were cut off and it was necessary for them to use the funds derived from the sale of their lands for living expenses while attempting to find new locations. At Fort Berthold the per capita payment of \$1,000 from tribal funds cushioned the shock and largely met the need for interim subsistence and costs incidental to relocation but also resulted in much unwise use of funds.

In addition to families in the taking area, a number of families along the margins of the reservoir will have to move. Costs for a few families on the periphery of the taking area as well as those in the taking area are included in the total for moving and relocating families affected by the takings (17).

The cost of moving and re-establishing movable improvements is based on recent experience at the Fort Berthold Reservation where a large number of Indian dwellings and farm buildings have been moved. The number of various kinds of buildings and improvements which will have to be moved on the other four reservations was obtained from the individual appraisals of properties in the taking area. Detailed data from the appraisals and the Fort Berthold cost-experience provided a substantial basis for arriving at the cost of moving and re-establishing improvements (18).

The extra cost of weatherproofing and equipping dwellings (19) is based upon the number and kind of dwellings in the taking area, and an estimated average cost per unit for various kinds of houses.

The average per unit cost is a broad estimate based upon general knowledge of conditions on the reservations. Costs for specific dwelling will have to be determined by close examination of the dwelling and of the relocation site.

Since approximately 90 percent of the commercial timber and 80 percent of the timbered area of the reservations will be inundated by the reservoirs, artificial shelters for livestock for most livestock enterprises will have to replace the natural shelter now provided by the timbered areas. Costs for livestock shelters, based on data from a number of sources, are estimated at \$161,000 for the four reservations (20)--\$1,000 per ranch for the 161 ranches requiring relocation.

Water, now easily accessible from streams, underground sources, and springs in the bottom lands, is available on most of the uplands only from deep, underground sources or from surface runoff. Water from such sources generally is inferior in quality and quantity to present supplies and costly to obtain. Procurement of domestic and livestock water presents a major problem on the uplands of all reservations but is particularly difficult on much of the Cheyenne River Reservation and part of the Standing Rock Reservation which are underlaid by Pierre shale. In many localities it will not be possible to establish as good, as convenient, nor as dependable sources of water as the Indians now have within the taking areas. The cost per family or per ranch of obtaining water will differ from place to place and will be influenced by numerous factors not least of which are the adequacy of planning the relocation and the efficiency and integrity with which sound plans are carried out. Costs at Fort Berthold have been higher than is estimated for other reservations partly because estimates for other reservations assume less dependence on deep wells as the source of water for individual families and ranches. The average cost per family and per ranch for each reservation is shown in table 16, page 59. The total estimated cost for the four reservations is \$396,400 (21).

Flooding of bottom lands will upset the existing balance between summer and winter ranges and require drastic changes in ranching operations. Experience at the Fort Peck Reservoir indicates that additional fences will be required under the new conditions. In some localities, the reservoir area will have to be fenced to prevent excessive loss of cattle by bogging down on mud flats and from other hazards occasioned by the new reservoirs. Loss of the productive haylands in the valleys will require fencing of some of the better upland areas to provide harvested hay for winter feeding. Pastures for late fall and early spring will also need to be fenced. Considerable additional fencing will therefore be needed under the new conditions at an estimated total cost of \$209,300 on the four reservations (22).

Net incomes to ranchers are likely to be reduced for a few years while adjustments to the new conditions are being made. Cattle losses along the reservoir shore are likely to be greater than present losses along the river. The amount of harvested feed required is greater on the upland area. More herding of cattle will be necessary until cattle and ranchers have become acquainted with the new conditions. Since more buildings and improvements are needed, fixed investment and depreciation costs will be higher on the uplands. After adjustments have been made, the increased production resulting from the better use of range which fencing brings about and to which better feeding during the winter contributes, should offset the increased costs which continue beyond the adjustment period. In view of this expectation, damages represented by increased operating costs for the adjustment period only are included in this report. They amount to \$322,000 for the four reservations (23).

Discussions to date indicate that contracts covering the settlement for Standing Rock, Cheyenne River, Crow Creek, and Lower Brule will require Indian owners to pay salvage values in order to reacquire title to buildings and improvements which they wish to remove or salvage. At Fort Berthold no salvage charges were imposed. Salvage values shown in table 1 are based on those placed on improvements owned by Indians on the Cheyenne River Reservation taking by a commercial appraisal firm (24).

On the Cheyenne River Reservation, much of the tribal land will lose its present sources of water and winter shelter for livestock. In order to make effective use of this land, water will need to be developed, fences will need to be erected, and other improvements made. Since this situation holds only to a minor degree for other reservations, most of the cost for rehabilitation of tribal land will be on the Cheyenne River Reservation (25).

With a large percentage of the reservation population placed under the necessity of obtaining new homesites or ranch headquarters and land to replace those taken, competition for land will be greatly increased during the period of removal and re-establishment. The fact that purchase of land under trust is largely limited to consolidation areas of the reservations will add to the intensity of competition. This is likely to result in a temporary increase in land values. It is conservatively estimated that the average cost of purchasing replacement land under the increased competition by displaced ranchers will be 15 percent higher than the present fair market values on which the appraisals were based, provided the general level of farm land values does not change materially from that of the November 1951 level. It is recognized that all persons will not want to reinvest their funds in land on the reservation,

but re-establishment of full income-producing capacity will require reinvestment of all capital obtained for properties taken. Reservation land, the most common trust investment of Indians, constitutes the most likely field for reinvestment, presently in favor among Indians.

The sum of items 17 to 26 gives a total estimated cost of \$6,342,001 (27) for re-establishing the living facilities and the income-producing capacity of displaced families on the four reservations. Since funds amounting to \$3,843,134 (28) for land and improvements taken will be available for re-establishment this amount is subtracted from the total cost of re-establishment to obtain the net additional capital needed for re-establishment (29) including moving, purchase of land, and providing water, shelter, fences, and other improvements at the new location.

Timber, Wildlife, and Wild Product Losses

The traditional dependence of Indians on the bounties of nature still exists to a marked degree among Indians of the five reservations. A large number obtain all their fuel and much of their building materials--logs, poles, and posts--from the timber growing on the reservation. Deer, cottontails, pheasants, partridges, prairie chickens, and other kinds of upland game provide appreciable quantities of food. Plums, cherries, grapes, June berries, wild turnips, mouse beans, and other natural products are gathered in considerable quantity. These natural products furnish a substantial part of the living needs and thus constitute an essential supplement to the small cash incomes derived from cattle, rentals, and wages.

Around 90 percent of the commercial timber and 75 percent of the wildlife and wild products of the reservations are expected to be destroyed by flooding of the timber and brush lands which are the habitat of deer and other game and the source of timber, firewood, and other natural products.

In order to determine the amount of standing timber, the taking areas were cruised and quantities of commercial timber determined. On the basis of this cruise and normal rates of growth of trees in the taking areas, the annual growth of timber was determined and the sustained annual yields of timber products were estimated. The use-value of timber products to the Indians ^{1/}was placed at \$2 per house log, \$1 per corral pole, and 40 cents to 50 cents per post, and \$15 per cord of cordwood in computing the annual value to Indians of timber products. These represent use-values of the

^{1/} Value to Indians should not be confused with commercial stumpage value used in appraisals of property. See page 75 and footnotes to table 23.

harvested timber products to people on the reservation--the house logs, poles, posts, and firewood. The estimated annual use-value of timber products on the four reservations capitalized at 4 percent amounts to \$3,118,175 (30) which is more than half of the appraised value of the properties taken.

The Fish and Wildlife Service of the United States Department of the Interior estimated the loss in wildlife which would be occasioned by destruction of the habitat of deer and other game. Its values are based on the general level of prices which prevailed during 1939-44 and reflect the estimated amounts that hunters are willing to spend to bag various species of game. Present values of game to Indians are estimated to be only about half those used by the Fish and Wildlife Service. Values to Indians are the estimated costs at the grocery store of foods which will have to be purchased to replace the game presently obtained from the taking area.

The quantity of natural products was estimated from surveys made on the Cheyenne River, Lower Brule, and Crow Creek Reservations and from observations in the various taking areas which were made by land appraisers and timber cruisers. The value of wild products is the estimated value at the grocery of food to replace the loss of wild products.

Annual values of timber, wildlife, and wild products represent the value to the Indians of quantities of wild products which could be obtained each year if the timber and brush were not destroyed. These annual values were capitalized at 4 percent to obtain the capital values shown for items 30, 31, and 32 in table 1. The commercial stumpage value of timber (33) was subtracted from the sum of these three to obtain the loss in excess of that compensated for by payment of the appraised value for properties taken. This amounts to \$5,194,985 for the four reservations (34)--substantially more than the value of Indian properties in the takings.

This is a gross value because no production expenses have been deducted from the value of harvested products. However, most of the harvesting of these products is done by Indian labor using relatively inexpensive equipment. Much of the work of harvesting is performed by labor having little or no opportunity for other productive employment. Where harvesting costs are negligible the net value of harvested natural products approaches their gross value. The harvested values overstate the net losses which Indians will sustain from the reservoir takings by the "opportunity" costs of harvesting.

Because of the many contingencies involved, losses to Indians from the reduction in the annual harvest of timber, wildlife, and natural products cannot be estimated with the same degree of accuracy as moving and re-establishment costs. The estimated annual losses of these items are considered to be liberal but they probably are not overly extravagant for the present generations in view of the Indians' background, the circumstances under which they live, and their traditional direct dependence on nature for a large part of their livelihood. The assumption that these conditions will continue permanently, implied in the capitalization process, is open to more serious question. Losses from these items in excess of the appraised value of commercial timber, therefore, are considered to represent very liberal valuations.

Potential and Intangible Damages

Potential and intangible damages are less susceptible of measurement than are costs of re-establishment or even of damages sustained through loss of natural products. Monetary estimates of potential and intangible damages, therefore, are likely to differ greatly among individuals of equal competence, experience, and knowledge.

The value of irrigation potentials of land has one substantial base--the acreage physically and economically suitable for irrigation. The physical suitability of irrigable acreage in the taking areas was determined by soil scientists and the economic feasibility by irrigation engineers. The net increment in land value occasioned by irrigation of the land depends on numerous things--among which the cost of water and the productivity of the land are major factors. It is recognized that net increments will vary widely with circumstances but available information was not adequate to establish differences between reservations. Therefore a flat rate of \$10 per acre for the irrigation potential was used for all reservations. The total irrigation potential amounts to \$387,000, most of it on the Fort Berthold Reservation (35).

Somewhat akin to potential increased value from irrigation are potential increases likely to accompany the general development of the area. Land in underdeveloped areas frequently has greater potentials for increased value than land in fully developed areas. In his Basic Data Report, covering appraisal of Indian lands in the Oahe Reservoir taking, Mr. Hart ^{1/}noted that the "area, in which the lands to be acquired are located, is still in largely a primitive or frontier state of development" and that "there has not been the same degree of development as in other nearby zones."

^{1/} Basic Data Report, Oahe Reservoir Valuation Project, Sioux Indian Lands, by Gerald T. Hart.

This retarded development characterizes all five reservations and is a factor in the relatively low present market value of land on the reservations.

Despite the present retarded status, development is proceeding and much of the potential value of land may be realized within the next two or three decades. Indian lands are held in trust and cannot be mortgaged or sold without the consent of the trustee--the U. S. Government. This trust status enabled (in some instances forced) Indians to retain ownership of land during the drought and depression of the thirties while many white settlers lost or abandoned their holdings. Trust land is not subject to property taxes. This makes it less costly to wait for the increased values arising from further development of trust lands than of fee lands. The "maturing costs" of trust land are less than for taxable land by at least the amount of the property taxes during the "waiting period."

A similar situation holds for commercial timber. No well established market for sawtimber exists on the reservations partly because of their retarded economic development. Virgin timber in the United States is being steadily reduced and expanding demand for timber products appears likely to continue with increased population and new industrial uses of timber. Since 90 percent of the commercial timber on the reservation will be taken, possibilities for acquiring replacement timberlands are indeed limited.

Other than for irrigable lands, no attempt has been made to estimate the magnitude of potential values which will be destroyed by the reservoirs. Such values, if any, are lumped together under all other damages.

Intangible damages, as the term itself implies, are difficult to identify and assess or even to discern. Some are subjective in character and thus affect each person differently, being conditioned by the attitude, background, and circumstances of the person involved. Other damages are the secondary effects of primary actions, the repercussions of which run through the economic and social structure. These secondary effects are difficult to trace and often impossible to evaluate.

The reservoir taking and its concomitant displacement of families has caused great emotional reaction among Indians on the reservations--anxiety, distrust and, in some, resentment. It has undermined the peoples' sense of security and revived or strengthened the feeling that, by depriving them of their lands, Indians have been and are once more being unjustly exploited for the benefit of non-Indians. The prospect of having to give up their present homes and means of livelihood and seek new ones in unfamiliar places is alarming and disheartening to people who have had little experience away

from their present homes on the reservation. The resources basic to a large part of their present living and recreational pursuits-- timber, game, and wild products--will be destroyed. This will force people to depend less on a subsistence economy based directly on natural resources and more on a cash economy based on ranching or on wage work or to become more dependent on welfare funds. The difficulties of such readjustments will be fully realized only when movement from the taking area occurs. This time has arrived at Fort Berthold but apprehension and worry about the situation to be faced is disturbing Indians on the other reservations.

Indian people have a strong attachment for their land, especially their traditional homeland and sacred places. In his book, Economic Anthropology, Professor Melville J. Herskovits points out that the "emotional attachment of men to the districts where they are born and to the particular localities over which they have exercised proprietary rights, as well as magical and religious considerations, are powerful noneconomic forces that must always be taken into account" in evaluating "the psychological elements in land ownership" which "intervene in the resolutions of questions involving alienation of particular plots" of land.

In addition to these subjective or psychological values, there are certain sense-perceptible losses--certain amenities which will be destroyed by the reservoirs that cannot be fully replaced. The pleasant living environment afforded by the wooded protected valley, the good quality water from some springs and wells, the abundance of timber, game, and wild products, are among these things.

Inundation of reservoir areas will cause the breaking-up of some communities thereby disrupting and disorganizing the social, economic, and religious life of long-standing and well-integrated groups. This disturbing influence will extend beyond the immediate locality to other parts of the reservation.

Public Law 870 ^{1/} which authorized negotiations with Cheyenne River and Standing Rock Sioux Tribes directed that payment for properties conveyed to the United States should cover "costs of relocating and re-establishing the tribe and the members of each tribe who reside upon such lands so that their economic, social, religious, and community life can be re-established and protected" and further stipulated that the contract provide for the final and complete settlement of all claims by Indians against the United States arising because of the construction of the Oahe Project.

^{1/} Act of September 30, 1950 (64 Stat. 1093).

In making settlement for properties taken for the Garrison Reservoir, Congress appropriated ^{1/} \$5,105,625 to cover payment for Indian lands and improvements taken and to cover costs of relocating and re-establishing Indians who resided within the taking area, and the costs of relocating and re-establishing Indian cemeteries, tribal monuments and shrines within the taking area. ^{2/} In addition to this \$5,105,625, there was appropriated a sum of \$7,500,000 "in full satisfaction of: (1) all claims, rights, demands, and judgments of said tribes or allottees or heirs thereof arising out of this Act and not compensated for out of the said \$5,105,625; (2) and of all other rights, claims, demands, and judgments of said tribes, individual allottees or heirs thereof, of any nature whatsoever existing on the date of enactment of this Act, whether of tangible or intangible nature and whether or not cognizable in law or equity in connection with the taking of said land and the construction of said Garrison Dam Project." ^{3/}

This settlement may be regarded as an indication of the views of the 81st Congress regarding the magnitude of total damages sustained by the Indians of the Fort Berthold Reservation because of the flooding of their lands by the Garrison Reservoir. The fair market values of properties taken at Fort Berthold, exclusive of mineral values and severance damages to tribal lands was \$3,654,332. The total settlement after deducting mineral values of \$67,995 and \$50,000 to cover the estimated cost of removing Indian cemeteries amounted to \$12,487,630 (38). The analysis summarized in table 1 indicates that \$3,947,475 (36) of this total represent unlisted damages which are largely intangible in character. This figure was computed by subtracting the sum of all listed damages from total damages.

^{1/} Act of July 31, 1947 (61 Stat. 686).

^{2/} In final settlement the U. S. Corps of Engineers paid an additional \$97,685.47 for 2,434.13 acres of trust land belonging to Indians who were not members of the Three Affiliated Tribes and for non-Indian inherited interests in 1,366.11 acres. These lands were listed in the report of the appraisal board and in the description of the taking area in the Act, indicating that Congress intended the settlement in P.L. 437 to cover damage to all Indian interests but the Act was worded so as to cover only interests of the Three Affiliated Tribes and members thereof. In view of the apparent intent of Congress, these lands are included in total acreages shown in this report for Fort Berthold, but the additional payment is not included in the value of Indian properties taken.

^{3/} Public Law 437, Act of October 29, 1949 (63 Stat. 1026).

Total Damages on the Four Reservations

Satisfactory means of measuring intangibles were not at hand so no attempt was made to determine such damages by direct means. In order to arrive at some figure for intangible damages a total for all damages was first computed by assuming that the ratio of direct damages to total damages in the Fort Berthold settlement (1 to 3.42) would hold for each of the other four reservations affected by Missouri River reservoirs in North Dakota and South Dakota. From total damages thus computed the sum of listed damages for which specific amounts had been established was subtracted. The remainder was labeled "other damages, mostly intangibles", and will be referred to as intangible damages for short (36). The relative amounts and percentages of intangible damages derived by this procedure appear to be consistent with available factual information regarding the probable severity of the over-all effects of the reservoir takings on the several reservations. Percentages which intangible damages constitute of total damages may be used as an indication of the relative magnitude of such effects. These percentages are: Fort Berthold, 32; Cheyenne River, 25; Standing Rock, 14; Crow Creek, 10; and Lower Brule Reservation, 5 percent.

The similarities and differences in the character of damages among the reservations should assist the reader in evaluating the validity of this approach to arriving at intangible damages and of the equitableness among the affected reservations of the amounts so derived.

On all reservations most land is suitable only for livestock production. The taking areas on all reservations include most of the sheltered wooded areas which provide the best home and ranch sites and have the best hay meadows and sources of domestic and livestock water supply. Land in the taking areas on all reservations is generally of better quality and a greater percentage is arable than of the residual land. Big game habitat and source of wild products are largely in the taking areas.

However, there are differences in the severity of impact of the takings among reservations. Most of the timber on each reservation is in the taking area (11), but only 7 percent of the Cheyenne River Reservation taking area is timberland compared with 35 percent at Crow Creek and 31 percent at Lower Brule Reservation (12). Timbered lands provide not only timber products but are the habitat for most wildlife and the source of a large part of the wild products gathered by Indians. Differences in the acreage of timberland in the taking areas explain much of the differences among reservations in losses of timber, wildlife, and wild products.

Although intangible damages are not subject to accurate measurement, there doubtless are differences in the amount and severity of intangible damages because of differences in degree of disruption to the social, community, economic, and cultural life of Indian people. The taking area is the heart of the Fort Berthold Reservation. Flooding of the area will isolate residents in five separate segments by cutting all direct lines of transportation except by water during the summer months. This will force substantial changes in the economic, social, and administrative structure of the reservation. The acreage taken constitutes the largest area (8) and the largest percentage (9) of any reservation and affects the largest number (2) and greatest portion (3) of reservation people. Cheyenne River has the next largest area taken and number of people displaced and probably will be the next most severely damaged by the taking. Crow Creek and Lower Brule Reservations will suffer the least loss and intangible damages on these reservations probably will be relatively lowest compared with other damages.

Agricultural and livestock enterprises will be seriously disrupted. At Fort Berthold 94 percent of farms and ranches operated by Indians are in the taking area compared with 40 at Cheyenne River, 24 at Standing Rock, 18 at Lower Brule, and 9 percent at Crow Creek (6). If the request that Indians be given free use of land between the taking line and the water line is granted, the damage to Indian livestock enterprises from the takings likewise will be relatively lowest on Crow Creek and Lower Brule and greatest on Fort Berthold Reservation.

Damage to livestock range also will be relatively lowest on Crow Creek and Lower Brule takings and highest on Fort Berthold Reservation. The amount of damage to range is influenced by the period of time land is under water. Figure 1 shows the proportion of years that various percentages of the taking area are likely to be inundated under the projected plan of operation after all contemplated main-stem dams have been completed. On Crow Creek, 76 percent of the land taken will be above water 80 percent of the years; whereas on Fort Berthold, only 20 percent of the area taken will be above water 80 percent of the years. This adds support to the conclusion that the over-all disruptive effects of the takings and consequently the intangible damages are likely to be least at Lower Brule and Crow Creek and greatest at Fort Berthold Reservation.

MISSOURI RIVER RESERVOIRS

Shoreline areas not flooded during year
50-year period, 1898-1947
All reservoirs operating

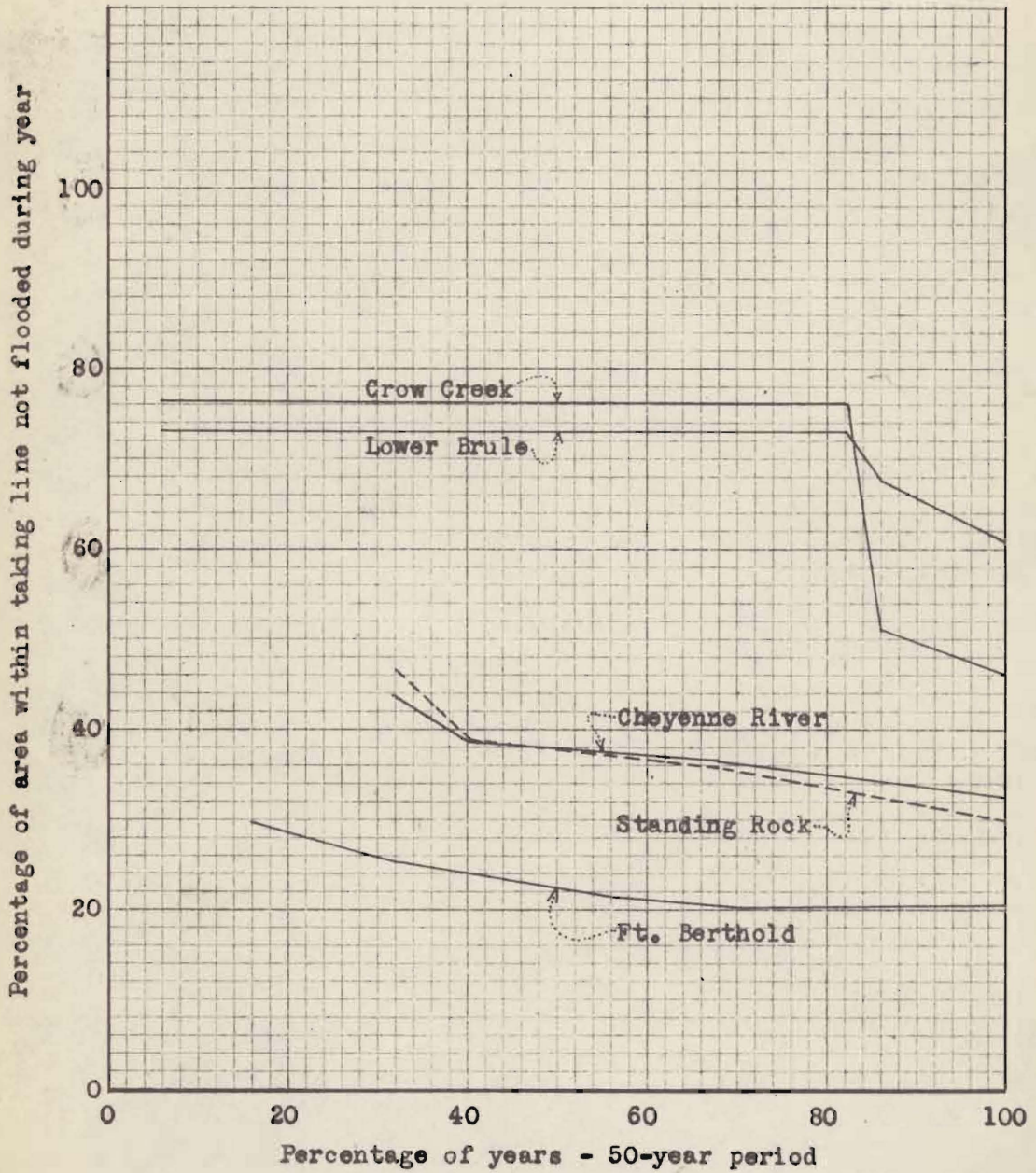


Figure 1.

Funds Required for Various Purposes

Funds equal to the appraised values of the properties taken (16) plus additional capital costs of re-establishment (29) are considered sufficient to restore the economic position of individuals capable of economic rehabilitation and of the land in tribal ownership. The sum of these two items, as is shown in the tabulation below, amounts to from 39 to 51 percent of the total estimated damages for the various reservations.

ITEM	STANDING ROCK	CHEYENNE RIVER	CROW CREEK	LOWER BRULE	FORT BERTHOLD
	%	%	%	%	%
NEEDED FOR RE-ESTABLISHMENT					
VALUE OF PROPERTIES TAKEN	29	29	29	29	29
ADDITIONAL CAPITAL FOR RE-ESTABLISHMENT	13	22	10	12	15
TOTAL NEEDED FOR RE-ESTABLISHMENT	42	51	39	41	44
PAYMENT FOR LOSS OF TIMBER, WILDLIFE & NATURAL PRODUCTS	43	24	51	52	22
PAYMENT FOR LOSS OF POTENTIAL IRRIGATION VALUES	1	#	#	2	2
PAYMENT FOR INTANGIBLE LOSSES	14	25	10	5	32
TOTAL AVAILABLE FOR RESERVATION DEVELOPMENT	58	49	61	59	56
ALL DAMAGES	100	100	100	100	100

‡ LESS THAN 1/2 OF 1 PERCENT.

Funds representing the other 49 to 61 percent--in the following amounts: Standing Rock \$3,178,013, Cheyenne River \$3,437,492, Crow Creek \$825,078, Lower Brule \$535,989--would be available for other purposes such as the restoration of community life and the general improvement and development of the reservation and its resources.

Direct damages and re-establishment costs will largely affect displaced families but many costs and damages such as loss of timber, wildlife, and natural products will affect not only people in the taking area but also those on the residual part of the reservation. Intangible damages, many of which stem from secondary repercussions arising from disruptions and disturbances affecting the economic, social, religious, community, and home life, also are reservation-wide in their effects.

Amounts needed for re-establishment do not necessarily coincide with the incidence and amount of damage sustained. Some large payments for land and improvements will go to older Indians who may have little interest in, nor need for reinvesting the funds in such properties. Families residing in the taking area who own only small heirship interests in the properties which they occupy or who are living there by courtesy of relatives, will receive little or no payment from the settlement for direct property damages; yet many will need funds to re-establish themselves. Some of these near property-less families will require funds to enable young people, who wish to take up ranching, to establish economic ranching units. Others who wish to leave the reservation to find employment will need funds to meet the costs of relocation and for special training.

Obstacles to Full Fruition of Improvement Programs

Obstacles to effective carrying out of improvement programs of individuals, groups, or communities are legion, even when funds for such purposes are available. Among the obstacles to be coped with are the present land ownership pattern, dearth of detailed knowledge regarding the abilities and aspirations of individuals, inadequate financial experience and know-how among the Indians, and the lack of well-formulated acceptable programs for expenditure of funds. Acceptance of, adherence to, and enthusiastic support of development programs by the Indians and the responsible Federal agencies, has been the weak point in many well-intended efforts.

The land ownership pattern is one serious obstacle to an effective program for re-establishing displaced families, for setting up efficient agricultural and livestock enterprises on Indian lands, and for increasing the income-producing capacity of reservation resources. Much of the land on the reservation is not owned or divided into individual farms or ranches as are farm lands outside the reservation. Indian land is owned as allotments to individuals, jointly by heirs owning undivided interests in allotments, and by the tribes. It is interspersed with alienated lands. The land generally is not used as individual allotments or tracts. Some of it is pooled in common community ranges; much of it is rented to non-Indians. Many individuals do not use the allotments they own or have an interest in. Many people live on land in which they own only a small undivided interest or on tribal land. Others live on land only by courtesy of relatives, according to Indian custom. A large part of the land in the taking area is owned by heirs or old people. Most of the original allottees are now deceased or well advanced in years.

When the land for the reservoirs is taken, it will not be a matter of individuals selling entire farms or losing leases and moving to other farms as among the whites. Re-establishment will be a matter of consolidating holdings into suitable operating or leasing units by straightening out a land ownership and land use pattern which is now confusedly and intricately entwined with Indian custom and the complications of inheritance imposed by Federal regulations.

Only about one-half of the tracts on the reservations are in single ownership. The percentage in single ownership in the taking areas of the Cheyenne River and Lower Brule Reservations is relatively high because the exchange assignment program designed to reduce multiple ownerships has been most effective in the taking areas of these reservations. The percentages of tracts in single and in multiple ownership for the reservations and for the taking areas are approximately as follows:

Reservation	Percent of Total Tracts Having					
	Single Owner		2 to 5 Owners		More than 5 Owners	
	Reservation	Taking	Reservation	Taking	Reservation	Taking
	%	%	%	%	%	%
Standing Rock	49	50	30	29	21	21
Cheyenne River	51	78	38	17	11	5
Crow Creek	50	57	30	16	20	27
Lower Brule	61	71	26	14	13	15

A major obstacle to prudent use of funds is the dearth of knowledge and lack of understanding of many Indian people regarding the opportunities for and the benefits which over the years flow from sound investment of funds. Failure to fully appreciate possibilities and advantages in investment contributes to the improvident--even harmful--dissipation of funds received from the sale of trust properties. The distinction between investment and consumption expenditures is only faintly sensed by many persons. The dissipation of funds received from the sale of property, the income from which has contributed to the family living, may materially increase dependency and seriously retard progress toward economic self-sufficiency. Experience at Fort Berthold and elsewhere shows that one of the crying needs of both individuals and tribes is advice and assistance in investment of funds and in getting individuals established on ranches, in business, or at permanent jobs.

Indians schooled in reservation economy have little comprehension of the complexities of modern investment opportunities. Suitable investments will differ with such circumstances as age, occupation, location, material position, and business competence of individuals. Investment in land, in improvements, in equipment, in education and job training, in homes and furnishings, in livestock, in scholarships, in annuities, in stocks, and in bonds, all may have a place in the use of such large funds paid to so diverse a group as the settlements involve.

Expenditure of funds should be based on a careful survey and analysis of individual and tribal resources and needs, their problems, and possible alternative solutions. Information regarding the situation, aspirations, and capability of individuals and groups and of the amount and character of their resources is essential to arranging for the effective use of funds. The gathering and analysis of such information has been started and a considerable amount of data regarding the resources and peoples of the four reservations has been obtained. A comprehensive survey of land and range resources is now under way on Standing Rock and Cheyenne River Reservations.

Since the needs of individual families differ greatly and change from time to time, information regarding them must be kept up to date. Preliminary preparations have been made to conduct a comprehensive survey of individual families just before funds from sale of property are available at Crow Creek and Lower Brule Reservations, and to assist individuals, families, and groups in planning expenditures of these funds.

A far more difficult problem will arise when payment for indirect damages are received. Such payments accrue to the tribe rather than directly to individuals and should be disbursed according to approved programs designed to develop the resources and promote the well-being of the people of the entire reservation. Such projects need support of the Indian people and their leaders. Experience with funds received in settlement for the Garrison Reservoir takings at Fort Berthold demonstrates the disastrous results of lack of acceptance by the Indians of plans for the use of funds for general improvement purposes.

Periods of adjustment and movement occasioned by relocation from reservoir areas are logical times to push reservation improvement programs. Approximately 30 percent of the resident Indian families of the four reservations will need to move before the reservoirs are filled. It is highly desirable to fit the relocation of displaced persons into well-oriented programs for the entire reservation. Since secondary repercussions arising from the disruptions and disturbances caused by the taking will extend to all parts of the reservations, a comprehensive program for re-establishment cannot be made without taking into account the resources and people on the entire reservation.

Measures to Assure Sound Investment of Funds

One of the most promising ways of promoting sound investment of funds is to use them to broaden and accelerate development programs now under way. Various programs have already been initiated on all four of the reservations, the purpose of which is the further development and the more efficient and more complete utilization of resources, both physical and human, directed to establishing Indians as fully self-supporting members of society. Such programs include assistance in training for and locating of off-reservation employment and for making adjustments to new conditions; educational grants and loans to finance training of young people for positions of responsibility and leadership; development and conservation of water, land, and other resources; assistance in establishing sound farming, ranching, and business enterprises; and in home and community development. Use of Indian lands by Indians has been encouraged, principally through the revolving credit, repayment cattle, land consolidation, and extension programs. Some notable progress has been made in resource development as well as in the fields of health, education, and improved living conditions. Effective use of funds not required for the moving and re-establishing persons and individual enterprises displaced by the reservoir can result in substantial progress toward achievement of the goal of a fully self-supporting Indian people.

Periods of adjustments such as those incident to the evacuation of the reservoir areas afford unusual opportunities for effecting land ownership consolidation, proper land use, resource development, and improved living conditions. Such programs must envision reservation-wide possibilities and needs. Attainment of these estimable objectives will require a high degree of cooperation and understanding between the Indians and Bureau personnel.

Legislative provisions specifically stating the purposes for which funds appropriated in settlement for the takings could be used would prevent their being used for less desirable purposes. Such legislative provisions also would reduce the possible areas of conflict and misunderstanding among the Indians and between the tribes and the Bureau and further the effective use of funds. Since these funds will be in payment for damage to trust properties, the Government has an obligation as trustee to see that they are reinvested or used so as to improve the economic status and well-being of the Indian people. It is suggested that Congress, in making its decision regarding a just and liberal settlement, also consider the uses to be made of funds granted and provide appropriate direction for the expenditure of funds.

Footnotes to Table 1.

Data in table 1 were taken either directly from or were derived from tables appearing in Part II of the report. Explanation and evaluation of data and their sources are given in footnotes to these tables and in the text accompanying them. A few brief explanatory footnotes and references are given at this point.

- 1/ Data are from table 11, page 46.
- 2/ For more details on families forced to move, see table 12, page 49.
- 3/ Breakdown of acres by ownership and by class of land for reservation and for taking area are presented in tables 3, 4, 5, and 6. Irrigable land from table 26, page 83.
- 4/ See page 68 and table 18, page 69 for explanation.
- 5/ Does not include value of minerals, oil and gas, nor severance damages to tribal properties. See pages 43-44 for explanation.
- 6/ Data for the first seven items under this heading are from tables 13 to 19 inclusive.
- 7/ Obtained by taking 13 percent of the value of improvements in table 10. Hart and Associates' estimate of the salvage value of Indian properties on the Cheyenne River Reservation taking was slightly less than 14 percent of the appraised value of all improvements. Fort Berthold Indians were permitted to remove or salvage their improvements without repurchasing.
- 8/ Obtained by increasing appraised value of land (table 10) by 15 percent.
- 9/ Data from table 10.
- 10/ These are the estimated harvested values to the Indian from sustained annual yields of timber, game, and wild products from the taking area (tables 23, 24, and 25) capitalized at 4 percent. Since no costs of gathering or harvesting were deducted, these are gross rather than net values.
- 11/ Computed at \$10 per acre of irrigable land, table 26, page 83.
- 12/ Since a more satisfactory basis for computing intangible damages was not available, the amounts shown here were obtained by subtracting the sum of all other items from total damages.
- 13/ The total settlement for Fort Berthold was \$12,605,625. This included \$67,995 for coal and minerals and an estimated \$50,000 for removal of Indian cemeteries which is to be paid for out of the \$12,605,625. These two items subtracted from the total settlement gives Total Damages (Item 38) for Fort Berthold. Total Damages for other reservations were obtained by multiplying Market Value of Properties Taken (Item 16) by 3.42. This is the ratio of the market value of properties taken at Fort Berthold to Total Damages. See also footnote 2, page 17.

Table 1. Data Relating to Indian People and Land, and Direct and Indirect Damages to Indians of Five Reservations from Oahe, Fort Randall, and Garrison Reservoir Takings, North Dakota and South Dakota

Item	Unit	Standing Rock	Cheyenne River	Crow Creek	Lower Brule	Four Reservations	Fort Berthold	Item No.
<u>People and Land Involved</u>								
<u>Indian Families Resident 1/</u>								
1	On reservation	680	600	248	118	1,646	370	1
2	On taking area	170	181	84	19	454	289	2
3	Percentage in taking area	25	30	34	16	28	78	3
<u>Indian Farms and Ranches</u>								
4	On reservation	212	250	33	28	523	160	4
5	To be relocated because of takings 2/	50	100	3	8	161	150	5
6	To be relocated because of takings	24	40	9	18	31	94	6
<u>Indian Lands 3/</u>								
7	Before reservoir taking, total area	1,026,655	1,612,122	159,053	130,240	2,928,070	584,718	7
8	Area in reservoir taking	55,994	104,420	9,418	7,997	177,829	152,360	8
9	Percentage of total Indian land in taking	5.5	6.5	5.9	6.1	6.0	26.1	9
10	Percentage of irrigable land in taking	26	8	4	9	13	100	10
11	Percent of timberland in taking	75	63	94	84	74	89	11
12	Percent of taking area which is timberland	25	7	35	31	15	13	12
13	After taking, total area	970,661	1,507,702	149,635	122,243	2,750,241	432,358	13
14	After taking, tribal land	156,482	739,729	4,475	39,364	940,050	6,324	14
15	After taking, tribal land affected by reservoir 4/	17,637	446,770	2,127	12,399	478,933	6,124	15
<u>Direct Damages</u>								
16	Market Value of Properties Taken 5/	Dollars 1,613,454	Dollars 2,053,117	Dollars 398,113	Dollars 264,010	Dollars 4,328,694	Dollars 3,654,332	16
<u>Indirect Damages</u>								
Cost of Re-establishing Homes, Ranches, and the Economy 6/								
17	MOVING AND RELOCATING PERSONAL PROPERTIES AND PERSONS	101,500	115,000	45,800	10,400	272,700	197,000	17
18	MOVING AND RE-ESTABLISHING MOVABLE IMPROVEMENTS	277,450	257,675	109,320	55,750	700,195	491,300	18
19	EXTRA COST OF WEATHERPROOFING AND EQUIPPING DWELLING	50,500	60,950	27,200	13,450	152,100	170,000	19
20	SHELTER FOR LIVESTOCK	50,000	100,000	3,000	8,000	161,000	150,000	20
21	DOMESTIC AND LIVESTOCK WATER	131,000	230,000	21,600	13,800	396,400	390,000	21
22	ADDITIONAL FENCES NEEDED UNDER NEW RANCHING CONDITIONS	65,000	130,000	3,900	10,400	209,300	195,000	22
23	REDUCED NET INCOME FROM RANCHES IN ADJUSTMENT PERIOD	100,000	200,000	6,000	16,000	322,000	300,000	23
24	COST OF REPURCHASING SALVABLE BUILDINGS AND IMPROVEMENTS 7/	32,562	44,523	16,509	8,254	101,848	66,227	24
25	COST OF REHABILITATING TRIBAL LANDS 4/	2,500	495,962	2,409	7,999	508,870	400	25
26	COST OF LANDS TO REPLACE LAND IN TAKING AREA 8/	1,289,000	1,830,000	227,220	171,368	3,517,588	3,420,000	26
27	TOTAL COST OF RE-ESTABLISHMENT	2,099,512	3,464,110	462,958	315,421	6,342,001	5,379,227	27
28	LESS APPRAISED VALUE OF LAND AND IMPROVEMENTS TAKEN 2/	1,372,966	1,933,059	324,603	212,506	3,843,134	3,483,000	28
29	Net additional capital needed for re-establishment	726,546	1,531,051	138,355	102,915	2,498,867	1,896,927	29
<u>Timber, Wildlife, and Wild Product-Losses 10/</u>								
30	VALUE TO INDIANS OF TIMBER FROM TAKING AREA	1,658,675	689,625	461,250	308,625	3,118,175	1,583,000	30
31	VALUE TO INDIANS OF WILDLIFE FROM TAKING AREA	229,500	915,000	185,800	161,900	1,542,700	1,017,500	31
32	VALUE TO INDIANS OF WILD PRODUCTS IN TAKING AREA	205,648	141,750	104,900	44,600	520,750	296,375	32
33	LESS APPRAISED VALUE OF COMMERCIAL TIMBER	205,648	81,498	57,200	42,304	366,640	175,785	33
34	Loss in excess of appraised value of commercial timber	2,362,527	1,664,887	694,750	472,821	5,194,985	2,721,086	34
35	Potential increase in value of irrigable land 11/	78,440	19,370	6,920	14,460	119,190	267,810	35
36	All other damages, mostly intangibles 12/	737,046	1,753,235	123,408	48,708	2,662,397	3,947,475	36
37	Total Indirect Damages (Items 29, 34, 35, and 36)	3,904,559	4,968,543	963,433	638,904	10,475,439	8,833,298	37
38	Total Damages 13/ (Items 16 and 37)	5,518,013	7,021,660	1,361,546	902,914	14,804,133	12,487,630	38