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RESEARCH REPORT NO. 64

**SOCIAL COSTS AND BENEFITS OF  
WATER RESOURCES CONSTRUCTION**

By

Rabel J. Burdge  
K. Sue Johnson

Principal Investigators

1973

UNIVERSITY OF KENTUCKY  
WATER RESOURCES  
RESEARCH INSTITUTE  
LEXINGTON, KENTUCKY

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SOCIAL COSTS AND BENEFITS OF WATER RESOURCE CONSTRUCTION

Rabel J. Burdge  
K. Sue Johnson  
Principal Investigators

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November, 1973

## ABSTRACT

This report analyzes and describes the process of relocating individuals and families who must move due to reservoir construction in Kentucky utilizing data collected in previous research. These data come from four separate studies: a study of community attitudes toward reservoir construction (Johnson county where the Paintsville reservoir is to be constructed), interviews with people who are slated for relocation when the Taylorsville reservoir is constructed, and two sets of interviews with people who have already been relocated due to reservoir construction (Cave Run and Carr Fork).

Psychological, social, economic and material costs and benefits associated with forced relocation are presented, and the role of the relocation agency (The Army Corps of Engineers) in the process is described. Generally, the younger, more affluent and educated migrants fare better in the relocation process than older, poorer and less-educated migrants. Particular attention is paid to those people who found relocation psychologically and economically costly because these are unanticipated and usually unrecorded real costs of reservoir construction. Suggestions are given for easing the burden of relocation among those affected. The framework for this report is longitudinal, describing the relocation process from pre-migration to post-relocation.

**Descriptors:** Social Adjustment, Social Impact, Migration, Social Change  
Social Values, Social Aspects, Project Feasibility, Cost-Benefit  
Analysis, Intangible Costs, Land Appraisals

**Identifiers:** Forced Relocation, Social Costs and Benefits, Reservoir Construction, Planning

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## SOCIAL COSTS AND BENEFITS OF WATER RESOURCE DEVELOPMENT

### I. INTRODUCTION AND OBJECTIVES OF THE STUDY

The major project objective was to analyze data from families and individuals forced to move due to reservoir construction. A composite picture of the migration process was accomplished using data from the following four locations:

A. All adults forced to relocate by the Taylorsville Reservoir in Central Kentucky were personally interviewed during the Spring of 1969 (160 of 176 eligible adults were interviewed.) All adults forced to relocate by the Caesars Creek Reservoir in Southeastern Ohio were interviewed in the same period (response rate was 101 of 116). Questions in both samples focused on individual and family migration plans, attitudes and knowledge toward reservoir construction, and a study of pre-migration stress in the study population. Background data and other standard sociological information were obtained. A limited write-up of this study may be found in Ludtke and Burdge (1970), Burdge and Ludtke (1970 and 1972). The Caesars Creek Reservoir is presently filling, while the Taylorsville reservoir is yet to be constructed.

B. In the Summer of 1970 information was obtained from a random stratified sample of 400 adults in Johnson County (Eastern Kentucky) on attitudes toward the proposed construction of the Paintsville Reservoir to be located on the Paint Creek Branch of the Levisa Fork River. Because the population to be relocated was relatively small--less than 15--the researchers chose to obtain data on attitudes toward water resource construction within the total community framework. Preliminary results of this investigation were reported by Becker (1971) and Becker and Burdge (1971).

C. In the summer of 1971 detailed information was obtained on the post-migration life changes of (220) families resettled during construction of the



Carr Fork reservoir near Hindman in Knott County (Eastern Kentucky).

Questions in this study emphasize post-migration adjustment and the interaction between the forced migrants and the Corp of Engineers. Detailed data was obtained on individual and family life changes from the time of first notification until resettlement in new homes. Families in the Carr Fork area were interviewed in 1967 regarding pre-migration attitudes.

D. The fourth data input comes from 75 families displaced by the Cave Run Reservoir presently nearing completion in Bath and Rowan Counties (Eastern Kentucky). These interviews were obtained by Senior Law students from the University of Kentucky under the supervision of Professor John Stephenson of the U.K. Sociology Department. Data from this study consists of detailed legal and financial information on settlement procedures instituted by the Army Corps of Engineers. Numerous sociological data were gathered as an integral portion of the study. Legal data were reported in a recent issue of the Kentucky Law Review (1970), but further analysis was discontinued with the 1970 graduation of the students.

These four sources of data obtained within the last three years constitute the data base for developing our generalizations regarding personal life changes and attitudes resulting from water resources projects. These four studies have certain basic communalities in that all were obtained from persons located in marginal low-income rural areas and at different points in the process of relocation.

This report focuses on data from the Carr Fork population because it is the most complete data on the process from pre-migration to post-relocation.

(For a fuller account of which this report is an adapted version, see Johnson and Burdge, 1973, Donnermeyer, Korsching and Burdge, 1973).

## II. SAMPLE, INSTRUMENT AND DATA COLLECTION PROCEDURES

### Selection of the Sample

The records of the Corps of Engineers Real Estate Office showed that 265 families and unrelated individuals were due to be moved to make way for construction of the Carr Fork multipurpose dam and reservoir on the Carr Fork of the Kentucky River. These Corps records form a complete case history from first contact and property appraisal to final resettlement payment. Since these records contain recent address and background information, they were used to contact respondents.

### Development of the Questionnaire

The structured questionnaire included personal characteristics (age, sex, marital status, socio-economic information on education, occupation and income); attitudes toward the reservoir and federal government programs, life situation data (interaction patterns, kind of land and housing, and indication of other material possessions) which was collected about the pre-relocation and the post-location situation. The idea of the pre and post analysis was to measure changes between the new and old locations. Open-ended questions provided an opportunity to record anecdotal comments of the respondents about forced migration. Pre-testing of the questionnaire was carried out on another sample of forced migrants in the low-income coal regions of Eastern Kentucky.

### Collection of the Data

Four graduate students from the Sociology Department at the University of Kentucky administered the questionnaires during the summer of 1971. Of the total number of relocatees, all but twenty-seven families remained in the area. Two hundred questionnaires were completed from the original population of 265 families and unrelated individuals.

### III. THE PEOPLE WHO HAVE TO MOVE: BEFORE RELOCATION

Reservoirs are constructed in fairly isolated rural areas most of the time, and therefore the people affected are not representative of the country's population but rather form a distinct sub-group with rather unique characteristics. They are often poor, often subsistence farmers, have little formal education, had values that separate them from mainstream America such as traditionalism, familism, person-centeredness, and fatalism. (See Becker and Burdge, 1971). Many hold negative attitudes toward reservoir construction and the federal government in general.

The Army Corps and other planners often think that knowledge about the project will be a factor in reducing negative attitudes. However, our research suggests that this is not always the case. Among those people who had to move for the construction of the Taylorsville reservoir, Burdge and Ludtke (1970) found that among those who were apprehensive about moving, knowledge about the project did nothing to ameliorate their negative attitudes. Response to the open-ended questions by the Carr Fork migrants suggests that interactions with the Corps are a factor in either producing or reinforcing negative attitudes toward reservoir construction and the federal government in general. It may very well be the case that increased knowledge about a project serves to increase whatever negative evaluations are already present in the population. The tendency toward negativity is of course greater among those who must be relocated.

#### The Community Context of Reservoir Construction: The Paintsville Case

During the summer of 1970, a random cluster sample of respondents in Paintsville was interviewed by graduate students from the Sociology Department at the University of Kentucky. The questionnaire included a scale to measure attitudes toward reservoir construction. Table 1 shows the distribution of

responses which are largely positive. (Korsching, 1972; Becker, 1971) Items five, six, and eight show negative majorities and upon closer examination, the scale items, although valid (Spearman-Brown coefficient of reliability is .75 for the whole scale and .83 for items 1, 4, 5, 7, and 8), are subject to a "response set." That is, the scale was constructed so that not all questions were scored the same--some "disagrees" are indicative of a positive attitude toward reservoir construction and some indicative of a negative attitude. However, as Table 1 shows, responses grouped together in the disagree column regardless of the meaning of the statement.

This suggests that the population is very acquiescent toward the reservoir. However, at the time the sample was interviewed, very little awareness of the impending reservoir was found, so perhaps, the positiveness of the responses was due to lack of knowledge. This past spring found the affected community polarizing around the proposed reservoir--ninety-five percent of the residents of the Paint Creek valley signed a petition opposing the reservoir. Two hundred-fifty families and individuals are slated to have to move from the valley. The locus of disaffection with the reservoir is found in the Paint Creek valley in Morgan county which will lose quite a bit of its tax base due to farms being innudated by the "back-up" of the reservoir. The major benefactor will be Johnson county and Paintsville with projected tourist revenues, recreational facilities, and more industrial development. (This informal history is reconstructed from reports of the LOUISVILLE COURIER-JOURNAL and by visits to the region over the past three years.) Persons not in favor of the reservoir have two major complaints: one is that the Corps takes land for a "buffer zone" which is more land than the residents feel is needed for the lake and recreational facilities; the other complaint is that the community feels that they were not adequately informed about the proposed construction. The original hearings were held the same day President Kennedy was assassinated; they were called off

Table 1. Reservoir Development Scale Responses (Paintsville Reservoir, Johnson County, Kentucky N=400)

	Strongly Agree		Agree		Undecided		Disagree		Strongly Disagree		No Response	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
1. More dams are being built than are necessary for flood control.	6	2	41	10	59	15	276*	69	5	4		
2. Money spent on building reservoirs exceeds the benefits we get from them.	6	2	79	20	59	23	212*	53	9	2	1	0.2
3. Reservoir construction often floods land that is worth more than the land it protects.	6	2	95	24	102	26	186*	46	11	3		
4. Reservoirs should only be constructed when they won't take people's homes or good farm land.	18	5	146	37	102	26	186*	46	11	3		
5. Flood control projects always help more people than they hurt.	4	1	43	11	52	13	284*	71	17	4		
6. Fish and wild life development alone provide reasons for reservoir construction.	1	0.2	75	19	66	16	245*	61	13	3		
7. Since floods only occur once in a while, it is foolish to give up good land for reservoir construction.	1	0.2	67	17	43	11	266*	66	23	6		
8. Reservoir construction is a good investment for reducing flood losses in the long run.	1	0.2	12	3	36	9	330*	82	21	5		

\*Response-set items

midway through, and rescheduled, but ill-publicized. The residents say that since they only really became aware of the project in the spring of 1973 that this forms grounds for legally stopping construction.

#### Characteristics of Forced Migrants

A land acquisition office has already been established in Paintsville and the initial acquisition proceedings have begun at the present time (November, 1973). Those directly affected by the reservoir have many of the characteristics discussed above. Those interviewed by the COURIER-JOURNAL were 60 to 80 years of age. Many had lived in Johnson and Morgan counties all their lives, some were descendents of the original settlers, and many were self-sustaining farmers, something rare in Appalachia.

With regard to the function of knowledge in the formation of attitudes toward the development of natural resources, the above discussion suggests that positive attitudes among forced migrants are likely when people can see there are real benefits for them personally or perhaps for the community as a whole (Burdge and Ludtke, 1972). Negative attitudes probably arise from feeling they are losing something irreplaceable; further information about the project probably either has no affect on attitudes or tends to enhance negativity.

Smith, who studied the Taylorsville migrants before they moved (as did the present authors), found that those who were going to be relocated suffered extreme stress prior to migration (Smith, 1970). These people were also victims of governmental footdragging--they did not know when they would have to move since being told about the reservoir in the early sixties, and they still have not moved. They mourned the loss of their homes and lifestyles even though they had yet to move.

These unhappy stories form a real part of the pre-migration period for many people. Planners and decision-makers tend to ignore these psychic realities; there are no dollar signs to be put on them.

The mean age of those having to move for the Cave Run Reservoir and Carr Fork reservoir was 58, and 56 for males and 53 for females respectively. This is considerably older than the U.S. average. Their modal education in both populations was eighth grade; their mean incomes were \$4,000 at Cave Run and \$5,000 at Carr Fork, so they hardly form a well-to-do class. Rural dwellers tend to be very attached to their homes and land--Burdge and Ludtke (1970) found over half to respond positively to the statement "This is the only place I can call Home." These people lead a life based on personal, individualistic, and familistic relationships--all of which, plus ways and pace of doing things is disrupted when they have to move. For some people, this loss of locus of identification can have catastrophic results.

#### IV. THE PROCESS OF MOVING

Given the law of eminent domain, people sometimes are forced to move even if they don't want to. Given the difficulties associated with such a major life change as forced migration, one would think public agencies would do their best to try to ease the transition for those affected. However, Carr Fork reservoir data concerning the Army Corps of Engineer's behavior during land acquisition and help in moving suggest that this is not the case.

After notification of forced relocation, appraisal by the Corps of what the land is worth takes place, and then an offer is made to the land owner. Half the first offers to heads of household by the Corp were lower than the appraised value of the properties (See Table 2).

If those who did not respond, or who were tenants were dropped from the analysis, the figure increases to eighty percent who were offered lower than the fair market value for their land and homes. The Corps appears to be trying to minimize acquisition costs by offering landowners less than the appraised price.

Table 2. Comparison of Initial Settlement Offered by the Corps Relative to the Appraised Value.\* (Carr Fork Reservoir, N=200)

	<u>Offer Lower</u>	<u>Offer Same</u>	<u>Offer Higher</u>	<u>No Response</u>	<u>Not Applicable</u>	<u>Total</u>
Number	100	6	18	21	55	200
Percent	50	3	7	10	28	98
Adjusted Percent	81	5	14	--	--	100
(No response and Not Applicable excluded)						(N=124)

\*This table was constructed from two sources. First the value of each of the properties was copied from the Corps of Engineers files. Respondents during personal interviews indicated the initial offer tendered to them by the Corps. The comparison of the two figures provides the data for this table.

Of those who accepted the first offers, twelve, or eight percent did, and they were uniformly older, long-term residents of Knott County.\*

The final amount accepted for the property by the remaining landowners in relation to the appraised value is shown in Table 3. People who accepted the first offer were paid less for their land than what it was worth. Those who bargained with the Corps tended to win higher prices for their land.

Table 3. Final Amount Received for Property in Relation to Appraised Value. (Carr Fork Reservoir, N=200)

	<u>Offer Lower</u>	<u>Offer Same</u>	<u>Offer Higher</u>	<u>Offer Litigated</u>	<u>No Response</u>	<u>Not Applicable</u>	<u>Total</u>
Number	11	4	108	7	3	67	200
Percent	6	2	54	4	2	34	102

\*The mean age of those taking the first offer of the Corps is two years older than the mean age of the population for males, females, and heads of household, (the latter is a combination of the two, by status); however, the mean is misleading in this case since half the respondents were over 60, yet some of those taking the first offer were in their early forties. (N=3, pulling the mean down). Three were 74 or older.



An article written by the staff of the University of Kentucky Law Journal after interviewing people relocated by the Cave Run Reservoir project (located near Morehead in Eastern Kentucky), describes the Corps attitude toward condemned property as "horsetrading". The bargaining process was an "unfair attempt to circumvent the constitutional requirement of just compensation." (Goebel, et. al., 1969-70).

Carr Fork respondents expressed concern that some got fair deals and others didn't. The Carr Fork sample was asked how they felt they did in comparison with their neighbors. (See Table 4) Forty-nine percent felt they had done worse. The comparison point with those who felt they had done either worse or better presumably was the 40 percent who felt they had done just as well as their neighbors.

Table 4. Response to the Question of: How Respondent Thought He/She Did in Relation to What Neighbors Received for Their Homes and Property. (Carr Fork Reservoir, N=200)

	<u>Not Applicable</u>	<u>Worse</u>	<u>Just as Good</u>	<u>Better</u>	<u>In Litigation</u>	<u>Total</u>
Number	55	71	57	10	7	200
Percent	--*	49	40	7	5	101

\*Not Applicable excluded from percentages.

The Cave Run researchers pointed out that the Corps' efforts to minimize the cost to the government by offering to buy the land for less than it is worth is actually quite costly due to litigious delay. Of the ninety-six surveyed at Cave Run, only six percent accepted the government's initial offer. Twenty-two percent preferred to go to court and gamble on a jury verdict. Jury awards exceeded government appraisals by as much as seventy-eight percent in the Cave Run area as a result of taking recourse to the law. Only five percent of the Carr Fork respondents preferred to take their case to court. The Corps' willingness to barter about land prices does appear to be basically an attempt to

minimize costs to the government. Also, if one accepts the government's initial offer, one is in all probability going to be paid less than the land is worth. If one bargains long enough, or goes to court, the chances are that he will receive what the property is worth, and perhaps a bit more. The social sensitivities surrounding forced migration are not enough to stop the Corps from trying to take advantage of people. The Corps also tends to pay less than the full costs of moving. (See Table 5) A majority were reimbursed equally; however, forty percent of those moving were paid less. A mere two percent made a little profit off the move.

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Table 5. Resettlement (Moving) Payments Made to Carr Fork Residents by the Army Corps of Engineers.\*

	<u>Payment Less Than Cost</u>	<u>Payment More Than Cost</u>	<u>Payment Same As Cost</u>	<u>Total</u>
Number	80	4	116	200
Percent	40	2	58	100

---

\*These data were obtained by recording the price paid to the migrants for moving from the Corps Records. The respondents were then asked how much it cost them to move. The comparison provides the datum for Table 5.

Nonetheless when the heads of household were asked whether they were adequately reimbursed for moving costs, a fairly large majority replied yes. (See Table 6) The Corps' files show that several were not adequately reimbursed. Some monetary differences were quite small, and this could be the reason for unawareness of not being paid enough. It is also possible that other factors were more important to the respondents such as finding a new home, or searching for a new job. Still, over one-third were dissatisfied with the amount they were paid.

Respondents were asked if the Corps actually offered to help or advise them. Fifty-one percent said "no" and forty-seven percent said "yes". The latter groups

response to the kinds of help offered is shown in Table 7.

Table 6. Response to the Question: "Was the Corps payment to you adequate to cover your moving expenses?" (Carr Fork Reservoir, N=200)

	<u>Yes</u>	<u>No</u>	<u>No Response</u>	<u>Total</u>
Number	130	69	1	200
Percent	65	34	1	100

Table 7. Kinds of Help or Advice Offered by the Corps to Carr Fork Forced Migrants. (N=98)

	<u>Number</u>	<u>Percent</u>
Moving Expenses	78	80
Assistance With Moving Vans	5	5
Advice on Reimbursement Procedures	8	8
Other	3	3
No Response	4	4
Total	98	100

Forty-three percent said that the move would have been easier with more help or advice from the Corps. More physical or financial help in moving and more time and assistance in finding a new residence were two-thirds of these responses.

The Corps must pay people for the time they spend looking for a new home. However, forty-eight percent said they were adequately reimbursed for this activity, and forty-two percent said they were not. Thirty-four people were not reimbursed at all.

These data show that a substantial number of people were mistreated by the Corps. They were not helped enough, or were not paid enough for the difficulty and inconvenience of finding a new home. About half the respondents experienced some difficulty in dealing with the Corps, and the major issue was financial cost.

## V. AFTER RELOCATION

### Economic Consequences of Relocation

Continued economic well-being represents the central concern of most people (Moore, 1963:88). This section of the report analyzes economic adjustments accompanying forced migration. Specifically, the following areas of financial well-being were analyzed to determine the effect of relocation on the economic situation of the effected families.

1. Respondent perceptions regarding whether their financial situation had improved or worsened as a result of the move.
2. Whether or not the move had been responsible for the change in their financial situation.
3. A discussion of individual and family financial change due to relocation.
4. Changes in their indebtedness level.
5. Reasons given by respondents for increased indebtedness.
6. An analysis of the personal and social characteristics of persons most likely to experience increased indebtedness as a result of forced migration.

### Changes in Financial Situation

The range of economic consequences of migration was so great that it was impossible to include every indication. One-third of the respondents in this study said that their overall financial situations was worse after relocation than before. Forty-four percent, or a little less than half, stated their situation had not changed and over twenty-two percent stated that their financial situation had improved since they moved to the new location. This question was designed primarily to direct the respondents to this aspect of their life situation. Financial change can be caused by a variety of reasons, (See

Table 8) but in this study we mean such items as level of indebtedness, the costs of rent or house payments, the costs of transportation in the new location and the differences in food costs.

Table 8. Response to the Question "Do you feel that your financial situation has changed any since you moved?"

	<u>Worsened</u>	<u>Remained Same</u>	<u>Improved</u>	<u>No Response</u>	<u>Total</u>
Frequency	67	88	43	2	200
Percent	34	44	22	1	101

We then asked the persons that indicated a change in their financial situation whether or not this was due to the move (Table 9). Nearly two-thirds of the people whose financial situation had worsened blamed the move. Twenty percent of the persons whose financial picture had improved, cited the relocation as the reason.

These preliminary findings suggest that if the financial situation worsened, the move is more likely to be blamed and other causes cited if the financial situation improved (Table 9). Such a response is reasonable in that people tend to blame the situation near at hand for their plight. It is, of course, easier to cite outside sources as the cause for individual failure. However, the response is so overwhelmingly against the reservoir that relocation must be a cause of deteriorating financial situation.

Table 9. Response to the Question "If your financial situation has changed, was it because of relocation?"

<u>Response</u>	<u>Frequency</u>	<u>Percent</u>	<u>Total</u>
A) Worsened			
1) Yes	39	58	
2) No	26	39	
3) Doesn't Know	2	3	67
B) Improved			
1) Yes	9	21	
2) No	34	79	
3) Doesn't Know	0	0	43

Table 10. Response to the question "In what areas has your financial situation changed?"

	<u>Frequency</u>	<u>Percent</u>
Total (those whose financial situation has changed)	102	---
A) <u>Worsened</u>	<u>67</u>	<u>66</u>
1) Relocation Related Activities	(20)	(20)
a) no garden at new location	4	4
b) higher rent at new location	3	3
c) improvements on house or property at new location	6	6
d) cost of relocation	1	1
e) decrease in business volume at new location compared to old location	4	4
f) added cost of transportation to work	2	2
2) Non-relocation Related Activities	(25)	(24)
a) loss or injury of working spouse	7	7
b) higher cost of living (inflation)	14	14
c) retirement	2	2
d) decrease in government assistance (social security, old age pension, etc.)	2	2
3) Other (unspecified)*	(22)	(22)
B) <u>Improved</u>	<u>43</u>	<u>42</u>
1) Relocation Related Activities	(2)	(2)
a) garden at new location	1	1
b) increase in business volume at new location compared to old location	1	1
2) Non-relocation Related Activities	(33)	(32)
a) increase in government assistance	15	15
b) raise in salary	18	18
3) Other (unspecified)*	(8)	(8)
C) <u>No Response</u>	<u>2</u>	---
D) <u>Not Applicable</u> (financial situation remained the same)*	<u>88</u>	---
E) <u>Grand Total</u>	<u>200</u>	---

\*This item was not asked to those respondents who mentioned their financial situation had not changed.

The next step in the analysis was to locate specific causes of financial change for the respondents. Each person was asked: "In what areas has your financial situation changed?" Responses shown in Table 10 were categorized into relocation related and non-relocation related activities, and shows that many of the responses were related to relocation or the process of settling.

About one-third of the persons whose financial situations worsened (20 of 67) cited relocation as a cause. Frequently cited reasons included the lack of a garden and higher rents and for those with a new business location the necessity for more rent and a decrease in business volume. On the other hand, only a very small number (2 of 43) whose financial situation had improved cited reservoir-related causes. These two respondents listed a garden and increased business volume as the reason for an improved financial situation.

Non-relocation related responses included inflation and injury as leading to a decline in financial situation, while some persons cited increased government benefits and more salary as the reasons for an improved financial situation. One possible benefit of the reservoir may be that more persons learned of available government aid and programs.

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Table 11. Response to the Question "Did you owe more money than you did before moving?"

	<u>Yes</u>	<u>No</u>	<u>No Response</u>	<u>Total</u>
Frequency	60	138	2	200
Percent	30	69	1	100

---

One indicator of changing financial situation is the amount of money owed. In the mountain culture where a cash economy prevails, the use of credit and banks is generally restricted to the middle and upper class persons and the coal companies. The values of the "mountain community" place great

stress on being debt-free. An increase in debt is seen as on the road to financial chaos. The migrants were asked if they owed more money now than they did before relocation (Table 11), and sixty or thirty percent responded yes. Of these, three-quarters traced the indebtedness to the relocation (Table 12). Therefore, it seems clear that a small, but significant percentage incurred more indebtedness due to relocation. This does not seem important when compared with middle class persons who would expect to borrow money if they moved, but in a subsistence economy slight shifts in money owed could easily signal financial tragedy.

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Table 12. Response to the Question "If you owe more money, was it because of relocation?"\*

	<u>Yes</u>	<u>No</u>	<u>No Response</u>	<u>Total</u>
Frequency	45	15	2	62
Percent	73	24	3	100

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\*This question was not asked of persons who answered no to the question in table 11.

#### Relationship Between Increased Indebtedness and Personal And Social Characteristics of Forced Migrants

This section explores the relationship between indebtedness and personal and social characteristics of the respondents. Our hypothesis is that favorable adjustment to relocation is not a random process. Rather through the use of sociological variables we can predict favorable attitudes toward migration. These variables include the age of household head, the size of family moved from old location, years of residence at old location, family income before relocation, and whether the respondent owned or rented at the old location.

Tables 13 through 17 show cross tabulations between the above listed variables and increased indebtedness. All the gamma values reported in these tables show either a strong negative or positive association. Gamma's were



calculated for all the cross tabulations shown in tables 13-17. The gamma statistic is an approximate measure of correlation using ordinal data. No levels of statistical significance are shown in that these values are based on the chi-square relationships.

#### Age and Indebtedness

Table 13 shows the cross tabulation between age and whether or not the respondent attributed increased indebtedness to relocation. Older migrants were more likely to place the blame for increased indebtedness on relocation (Gamma =  $-.486$ ). Disruptions in normal routine are more likely to have major repercussions for older people, and this is increased when money and a move from familiar surroundings are involved. Previous research has demonstrated that as one gets older, one is less likely to accept change. Where the change involves one's home of many years, the resistance will be great.

Table 13. Relationship between age and whether or not relocation was seen as the cause for increased indebtedness.

<u>Age</u>	<u>Yes</u>	<u>No</u>
18-44	10	7
$\geq 45$	33	8

$Q = -.486$

#### Family Size and Indebtedness

The relationship between family size and increased indebtedness is shown in Table 14. The percentage of smaller sized families who attributed their debt to relocation is quite high (Gamma =  $.652$ ). Most likely, this finding reflects the older and retired family shown in Table 13. Younger and larger families are more likely to be mobile or at least more likely to accept the idea of a move. Older persons who have passed the productive years and have

completed house payments would find new payments at this age really devastating.

Table 14. Relationship between family size and whether or not relocation was seen as the cause for increased indebtedness.

<u>Family Size</u>	<u>Yes</u>	<u>No</u>
1 and 2	19	2
3	26	13

Q = .652

#### Tenure Class and Indebtedness

Landowners rather than tenants were more likely to place the blame for their increased debt on relocation (See Table 15; Gamma = .306). This finding is not surprising, because it is more difficult for a land owner to find an equivalent parcel of land in a new location at the same price. If the respondent happens to be a farmer, the task would be even more difficult because flat land brings premium prices in Eastern Kentucky. Homeowners, of course, may have difficulty in duplicating their present home at a new location with the tremendous inflation problems that face new home owners.

Table 15. Relationship between tenure class and whether or not relocation was seen as the cause for increased indebtedness.

<u>Tenure Class</u>	<u>Yes</u>	<u>No</u>
Landowner	28	7
Tenant	17	8

Q = .306

#### Years of Residency and Indebtedness

The relationship between number of years lived at old location and perceived cause of debt is shown in Table 16. Persons with longer years of residence were more inclined to blame relocation (Gamma = .390). This finding

lends support to the observations by Burdge and Ludtke (1972) that identification with place of residence is greater for persons who had been in a location the longest. Due to this long-term residency these persons are no doubt more likely to blame any change in their financial situation on the relocation due to reservoir construction.

Table 16. Relationship between years of residence and whether or not relocation was seen as the cause for increased indebtedness.

<u>Number of years at old residence</u>	<u>Yes</u>	<u>No</u>
1 - 5	11	5
5 - 19	20	9
20	14	1

Q = .390

#### Family Income and Indebtedness

Finally, Table 17 indicates that lower income respondents tended to place the blame for their increasing debt on relocation ( $\Gamma = .460$ ). It is particularly unfortunate that persons with the lowest income would perceive the relocation as the reason for increased indebtedness. These are the families which will move lower in the circle of poverty if anything disruptive happens to their life style. Low income is also indicative of fewer years of education and low occupational prestige. Moreover, the chances of being successful in another occupation, should it be necessary to change jobs upon relocation, are probably less than for more educated and affluent people. Persons with higher incomes probably have received a better settlement from the Corps at least to the extent that we can believe the data by Goebel and others (1970).

Table 17. Relationship between family income and whether or not relocation was seen as the cause for increased indebtedness.

<u>Family Income</u>	<u>Yes</u>	<u>No</u>
under \$4,000	23	5
over \$4,000	19	10

Q = .460

#### Summary

The strong association between the five social and personal variables and perceived cause of debt suggests that persons who are hurt by relocation is not random. The overwhelming evidence suggests that those with stronger roots in the community are often those who suffer most. Older persons with fixed incomes are also in a financial bind. The situation is not unlike that of urban poverty. Cottrell (1951:361) suggests that when a relatively contained community is confronted by a severe economic crisis, those persons most attached to the community will be hit hardest. He also points out that it is the self-employed, long-term resident of a community and one with interests in its continuation who are most affected by change.

The results presented here suggest the conclusion that forced migration is an involuntary disruption of normal life patterns, and is quite similar to the economic breakdown described by Cottrell. It tends to damage those who have a greater attachment to their place of residence. Characteristically, we would expect greater attachment from those who own land and who have lived in the area during most of their adult life. As this research vividly suggests these would be older, long time residents, with fixed incomes, who own their land and whose children have left the family. Although we present no supporting evidence, we suggest that these persons might also be less perceptive regarding the procedures for obtaining government benefits.

Based on the above analysis we concluded that relocation is a differential process. For some, it may be smooth, but these are persons with better incomes, who apparently do not have traditional ties with the community. For most, however, relocations represent a radical adjustment and most mountain people do not have the economic and social facilities to cope with such a change.

#### Material Changes Due to Relocation

Material changes for purposes of this report include effects on occupation and housing conditions. Examples include the necessity to seek a new job or a change in the quality of the residence between the new and old location.

#### Changes in Jobs

Because the majority of the respondents remained in the immediate area, the relocation did not change many occupations. However, in some cases the distance to work increased. This impact was not completely felt at the time of the interview for the reservoir was not filled. Table 18 does show, however, that 8 percent had to change employment and 6 percent lost their jobs due to relocation. Even if only one person lost their job, we would have to conclude that a problem is present. For an older population within an economically depressed area such as Knott County, a forced move may limit occupational alternatives. Most persons had to commute a greater distance to work (See Table 18). Sometimes, the relocated individual may not be able to afford transportation to what is usually a marginal occupation. Furthermore, age may severely limit the chance of finding a new job. The relocation agency must ensure that if the occupation is affected, the person must have an acceptable job in the new location.

Table 18. Relationship to work before and after relocation.

<u>Changes in Job</u>	<u>Frequency</u>	<u>Percent</u>
<u>Did Not Affect</u>	148	74
<u>Did Affect</u>	52	26
Closer to Work	(5)	(2)
Further to Work	(20)	(10)
Change of Employment	(15)	(8)
Loss of Employment	(12)	(6)
<u>Total</u>	200	100

#### Changes in Housing

Table 19 provides information on the quality of housing before and after relocation. Most housing remained at the same level of quality, and where a change took place the move was toward improvement. However, as with the relationship between job and relocation some respondents found themselves in poorer quality housing after relocation. Table 20 suggests that this is not a random, but a selective process. Persons with lower family incomes were more likely to live in low quality housing after relocation. The most frequent complaints were a fewer number of rooms and the lack of running water and a flush toilet. However, it should be pointed out that about 50 percent of housing in Knott County is deficient in one of the three criteria for satisfactory housing.

#### Presence of a Garden

Finally, under changes in material well-being we gathered information on the presence of a garden, before and after relocation.\* The importance of the

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\*The interviewers were impressed by the number of times the lack of a garden was mentioned as a complaint about the present home site. These complaints were volunteered at the onset of the interview before any specific question relating to property was asked.

Table 19. Comparison between quality of housing before and after relocation.

	<u>Less/Inferior</u>	<u>Same</u>	<u>More/Superior</u>	<u>No Response</u>	<u>Total</u>
Number of Rooms					
Frequency	36	84	78	2	200
Percent	18	42	39	1	100
Running Water					
Frequency	10	161	27	2	200
Percent	5	80	14	2	101
Flush Toilet					
Frequency	7	160	31	2	200
Percent	4	80	16	1	101
Electricity					
Frequency	2	194	2	2	200
Percent	1	97	1	1	100

Table 20. Relationship between family income and having inferior housing after relocation.\*

	<u>Under \$4,000</u>	<u>\$4,000-9,999</u>	<u>No Response</u>	<u>Total</u>
Number of Rooms				
Frequency	22	12	2	30
Percent	73	27		100
Running Water				
Frequency	9	1	0	10
Percent	90	10		100
Flush Toilet				
Frequency	6	1	0	7
Percent	86	14		100
Electricity				
Frequency	1	1	0	2
Percent	50	50		100

\*Analysis in Table 20 is based on persons who reported an inferior level of housing as shown in Table 19.

"garden" in the mountain culture is obvious from its location. It generally is placed in the front yard. This is functional because it is easy to get to and provides the center of most front porch conversations. We suggest that a garden is roughly equivalent to the suburban "lawn". Therefore, migrants

who were not able to start a new garden lost an important status symbol (as well as source of inexpensive food). Like the rest of Eastern Kentucky, Knott County has a scarcity of good, level bottom land. The land expropriated by the Corps was in the more fertile areas of the county. In other words, the people were forced to move to steeper, less fertile ground.

Table 21. Summary information on the presence or absence of a garden before and after relocation.

	<u>Frequency</u>	<u>Percent</u>
Garden: Before and After	66	60
Garden: Before Only	44	40
Not Applicable*	90	--

\*Those with no garden before and after (N = 86) and those with garden after only (N = 4) were excluded from the analysis.

One hundred ten respondents had a garden before relocation. Of these, 44 (40 percent) lost their gardens upon relocation. The frequency with which respondents brought up the lack of a garden throughout the interviews suggests that an important part of their economic and material well-being was missing. Growing and the consumption of homegrown products supplements a sparse income within the mountain culture. Obviously, the provision of a garden at the new location would have enhanced the image of the Corp in the eyes of the forced migrants. Unfortunately, the Corp was not aware that the garden represented an important component of the mountain culture.

### Social and Personal Changes Due to Relocation

#### Visiting Patterns

When asked what social activities had changed the most upon relocation, the majority replied, "visiting friends". Respondents said that these people were further away and/or the respondents were more isolated from major roads in their new homes. Sixty percent said they visited less with friends and 47 percent said they now visited less with relatives. Five families were broken



up by relocation. Members of the same family tend to live in hollows together and several respondents complained that their family was now scattered all over the place, in as many as four different counties. Instead of walking across the creek, they now must use a boat or drive around.

#### Family Activities

Thirty-eight percent of the respondents noted that after the move they were less likely to engage in such family activities as picnics, drives, and shopping. Twenty-eight percent said their family was at home less frequently. Fully fifty-five percent said the relocation change was for the "worse" overall; this compares unfavorably to the twenty percent who said it was for the better. Nineteen percent said they had not adjusted well at all to the move. Those who had children at home noted changes in them as well. (N = 77). Twenty-seven percent said their kids had less opportunity for recreation than before, and twenty-five percent said their kids weren't as happy as before.

These findings on changes in visiting patterns, the adjustment of the children and relationship with former friends and relatives are probably complaints that would be true of any person who had recently moved. The persons who were required to move the furthest probably made the most adjustment.

Again we make the comparison between the middle class migrant and the mountain people. A move for the middle class may not be routine, but certainly it is an expected portion of the life experience. However, for these people a rural family moving is rare. Stability of social relationships among friends and relatives is a necessity in the maintenance of the daily routine. Where life is not glamorous these simple pleasures constitute the major form of leisure. Obviously, limited opportunities in these areas would lower the quality of life for these persons.

## VI. ATTITUDES TOWARD RESERVOIR CONSTRUCTION AND THE FEDERAL GOVERNMENT

A shortened version of the reservoir development scale was given (the same cited earlier in the Paintsville study), (Korshing and Burdge, 1972) and the responses were decidedly negative. The distribution of response is shown in Table 22. On every item, from half to two-thirds were not in favor of reservoir development. The one deviant item, "reservoir construction is a good investment for reducing flood losses in the long run" showed fifty-seven percent agreeing. Flood control in general then, is seen as a good thing, but our respondents didn't want to have to move themselves, they don't like seeing good farm land taken and they think too many dams are being built.

Carr Fork respondents were asked their opinion on the federal government, Table 23 shows the question and the responses. Only a third feel the federal government goes out of its way to help the people it deals with, and forty-five percent feel that the federal government uses "underhanded tricks to get what it wants." Forty-three percent think it hard to believe what the federal government says. In other words they have great mistrust of the government and its people.

The information shown in Table 23 indicates that the persons that have been relocated have a basic mistrust of the federal government, in fact, less than half really agree to what is happening. It should be pointed out that people generally think that the government is basically good, but the people in it are bad.

The Carr Fork residents are not happy with their experience with forced relocation, and the results from this study suggest that their interactions with the Corps has deepened their disaffection with the federal government. The evidence is clear that many were mistreated, some worse than others, and

Table 22. Reservoir Development Scale Responses (Carr Fork Reservoir N = 300)\*

	Agree	Undecided	Disagree	Not Applicable	No Answer
	***	***	***	N	N
1) More dams are being built than are necessary for flood control.	57	16	27	47	43
2) Reservoir construction often floods land that is worth more than the land it protects.	66	19	15	57	43
3) Reservoirs should only be constructed when they won't take people's homes or good farm land.	58	14	28	57	43
4) Flood control projects always help more people than they hurt.	29	17	54	57	43
5) Since floods only occur once in a while, it is foolish to give up good land for building reservoirs.	55	17	27	57	43
6) Reservoir construction is a good investment for reducing flood losses in the long run.	57	21	22	57	43

\*N = 300 because spouses of heads of household were included.

\*\* Percent is of those responding to the question.

Table 23. Opinions About the Federal Government (Carr Fork Reservoir N = 297)

	Agree	Undecided	Disagree	Not Applicable	No Answer
	%*	%*	%*	N	N
1) The money the Federal government spends at home could be better used in other ways.	67	20	13	56	45
2) The Federal government doesn't really care about people.	44	14	43	56	45
3) The Federal government goes out of its way to help the people it deals with.	33	18	49	56	45
4) The Federal government uses underhanded tricks to get what it wants.	45	27	27	56	45
5) In any disagreement, the Federal government is always ready to listen to your side of the story.	49	16	35	56	45
6) It is hard to believe anything the Federal government tells you.	44	18	38	56	45

\*Percent is of those responding to the question.

that the costs are by and large not financial, but have profound effects on the traditional social fabric of the mountain culture.

## VII. SUMMARY

This report has attempted to present in a somewhat distilled form some of the major findings from our study regarding what happens to the families and individuals who must relocate due to a large development project such as a reservoir.

The report, while basically critical of the way in which the Army Corps of Engineers handles the relocation process, expresses the opinion that mere description of "wrong-doings" is not sufficient but that some constructive suggestions about possible change should be given as well. The authors regret that their data base is not more extensive so that stronger and more extensive statements could be made. However, given the limitations of our data, we do suggest some practical measures that might be taken to ease the social impact of large-scale water development. In other words, our concern here is with minimizing the social costs.

1. Knowledge of a project is not necessarily an indication of positive regard for a project, particularly among those who must move. Therefore, the Corps should reassess its public relations policy to stress benefits for the migrants and the adjacent community.
2. Results from two studies (Carr Fork and Caye Run) suggest that the Corps is systematically trying to minimize land acquisition costs by offering less than the fair market value of condemned land. Not only is this procedure alienating to those who must sell, and illegal, it is probably more costly to the taxpayer because of litigation and consequent delays. We therefore recommend that the Corps offer the full fair market value of the land on the first offer.

3. The time lapse between announcement of a project and its actual construction is often as long as ten or more years. During that period, resources of land to be taken are not fully utilized, and a great deal of psychic suffering is endured by those waiting to move. We therefore recommend that measures be taken to shorten the time between announcement and construction, and that the time that is there be used to improve the relocation process for those affected.
4. The public hearings given by the Corps on the desirability of a proposed project are generally ill-publicized and ill-attended. This procedure results in a lack of awareness on the part of the affected population until close to construction time, and the very nearness of the project often contributes to the formation of vociferous opposition groups. Some kind of public opinion poll (preferably conducted and analyzed by social scientists) conducted prior to the hearings phase would result in a more accurate map of community receptiveness to development, and some costly mistakes might be avoided. This polling would also allow planners time to alter their projects so as to meet more nearly public desires and needs.
5. The relocation process as it is currently conducted by the Corps results in primarily financial inequities, and appears to contribute to readjustment problems among the forced migrants. Those most severely affected are often old, retired, and living on fixed incomes. The loss of a garden or a paid-for house is often irreplaceable at current inflationary costs. Therefore, we recommend that an individualized, case-worker approach be taken in order that the specific needs of those affected can be taken care of. Younger, more affluent

and mobile people generally suffer less, can handle finding new jobs, and incur additional debt much easier than older persons. These factors should be taken into account in the relocation procedures so that, at minimum, no one is worse off than they were before.

6. The Corp's public image is badly in need of refurbishing. Some of the suggestions listed above might help. Current attitudes of Corps members toward condemned property and those who must move are alienating and may affect readjustment to relocation and reinforce or create negative attitudes toward the federal government as a whole. More humane treatment of forced migrants by the Corps might deter the vocalization of such sentiments as, in the words of one of our respondents, "The Corps's meaner than a barrel of fishhooks."

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