



AgEcon SEARCH
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

The World's Largest Open Access Agricultural & Applied Economics Digital Library

This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search

<http://ageconsearch.umn.edu>

aesearch@umn.edu

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

No endorsement of AgEcon Search or its fundraising activities by the author(s) of the following work or their employer(s) is intended or implied.

Ag 84A b
c2

5

Improving U.S. Farmland

Douglas Lewis
Thomas McDonald



U.S. Department of Agriculture
Economic Research Service
Agriculture Information
Bulletin No. 482

November 1984

Farmers invested more than \$6.5 billion in improving their land in a recent 3-year period. Those investments, while often made on existing cropland, expanded total U.S. cropland by 9.1 million acres. The investments and total acres affected are:

- **Clearing**—More than \$1.5 billion on about 10.6 million acres.
- **Draining**—About \$2.25 billion on 29 million acres (most of that for improvements to existing drainage systems).
- **Irrigation**—About \$1.7 billion for new irrigation on 5.5 million acres.
- **Soil conservation**—About \$935 million on more than 15 million acres.

Farmers' investments in 1975-77 to enhance the quality of their land or expand their land base are analyzed in this report. Such information is necessary for monitoring the quality and quantity of U.S. cropland, one of the most basic components of U.S. food production. The data were collected through 10 "follow-on" surveys

of the 1978 Landownership Survey, the first attempt since 1946 to survey ownership and land use at the national level.

The follow-on surveys were designed primarily to collect information on agricultural uses of land. Other uses (urban and forest, for example) were not explored, so a total picture of land use changes cannot be derived from the data. Even so, such an omission probably did not skew the results significantly, since the investments described apply primarily to agricultural land. To put the survey data in a better perspective, we have included a regional distribution of land uses (table 1) and a national overview of landownership (fig. 1).

9 Million Acres Added to Cropland

More than 9.1 million acres were converted to crop production during 1975-77 as nearly 221,000 owners

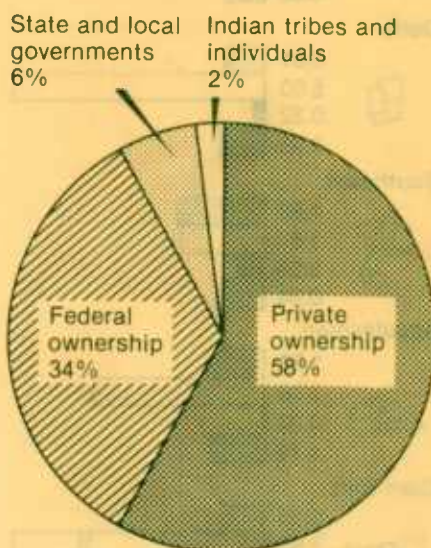
converted an average of slightly more than 41 acres each to cropland use. More than 4.9 million acres of the converted land had not been previously used for crops. Of the land that had been cropped, more than 2 million acres had been out of production for more than 10 years.

Noncropland was converted to cropland in all regions of the country with over 1 million acres added in the Northern Plains, Appalachian, and Mountain regions (table 2). The fewest acres were converted to cropland in the Northeast, which also had the smallest average addition per owner, about 17 acres. In contrast, the average addition to cropland in the Mountain region, where agriculture is land-extensive, was about 169 acres per owner.

From what uses did the new cropland come? Mostly from pasture or range. Over 64 percent had been used for pasture, 17 percent had been idle, and

Figure 1

Ownership of U.S. Land, 1978



Source: *Landownership in the United States, 1978.*



Current technology in underground drainage includes plastic tubing installed with a laser controlled mole plow. Photo courtesy of R. Wayne Skaggs, North Carolina University.

Table 1—Major uses of land, by region, 1978

Region	Cropland ¹	Pasture and range	Forest land	Special use area	Other land	Total land area
Million acres						
Northeast	17.5	3.0	68.1	8.7	14.8	112.1
Lake States	45.1	4.7	49.8	8.3	14.1	122.0
Corn Belt	101.8	12.0	27.8	7.6	15.8	165.0
Northern Plains	102.9	73.2	4.4	6.7	7.0	194.2
Appalachian	31.2	5.7	71.9	6.9	8.2	123.9
Southeast	21.2	9.3	75.1	8.6	9.4	123.6
Delta	26.0	5.8	49.4	3.4	7.7	92.3
Southern Plains	55.8	111.5	31.7	5.9	6.9	211.8
Mountain	43.6	306.5	119.0	45.8	33.0	547.9
Pacific	25.4	52.6	85.9	21.1	19.2	204.2
48 States ²	407.5	584.3	583.1	123.0	136.1	1,897.0

¹Includes cropland used only for pasture.

²Data for all tables in this brochure apply only to the 48 coterminous States.

Source: *Major Uses of Land in the United States, 1978.*

Table 2—Land converted to crop production, by region, 1975-77

Region	Owners		Area	
	1,000	Percent	1,000 acres	Percent
Northeast	16.6	7.5	284.2	3.1
Lake States	29.3	13.3	691.5	7.6
Corn Belt	40.8	18.4	902.7	9.9
Northern Plains	19.4	8.8	1,357.5	14.9
Appalachian	31.1	14.1	1,186.4	13.0
Southeast	23.6	10.7	937.4	10.3
Delta	10.3	4.7	946.9	10.4
Southern Plains	10.6	4.8	883.2	9.7
Mountain	7.0	3.2	1,183.1	12.9
Pacific	32.0	14.5	745.7	8.2
48 States	220.7 (9.3)	100.0	9,188.6 (8.6)	100.0

Note: Numbers in parentheses are coefficients of variation for the estimates immediately above.

Table 3—Previous use of land converted to crop production, 1975-77

Previous land use	Owners		Area	
	1,000	Percent	1,000 acres	Percent
Pasture or rangeland	93.1 (8.9)	39.2	5,799.8 (9.3)	64.7
Idle	76.2 (15.8)	32.1	1,521.2 (14.4)	17.0
Timber or pulp production	54.8 (27.1)	23.1	1,395.2 (36.0)	15.5
Recreation	3.6 (77.5)	1.5	25.9 (57.5)	.3
Other	9.8 (29.9)	4.1	222.9 (28.2)	2.5
Total reporting	220.7 ¹ (9.3)	100.0	8,965.0	100.0

Note: Numbers in parentheses are coefficients of variation for the estimates immediately above.

¹Does not add because some owners reported more than one use.

Figure 2

Acres of Selected Land Improvements, by Region, 1975-77

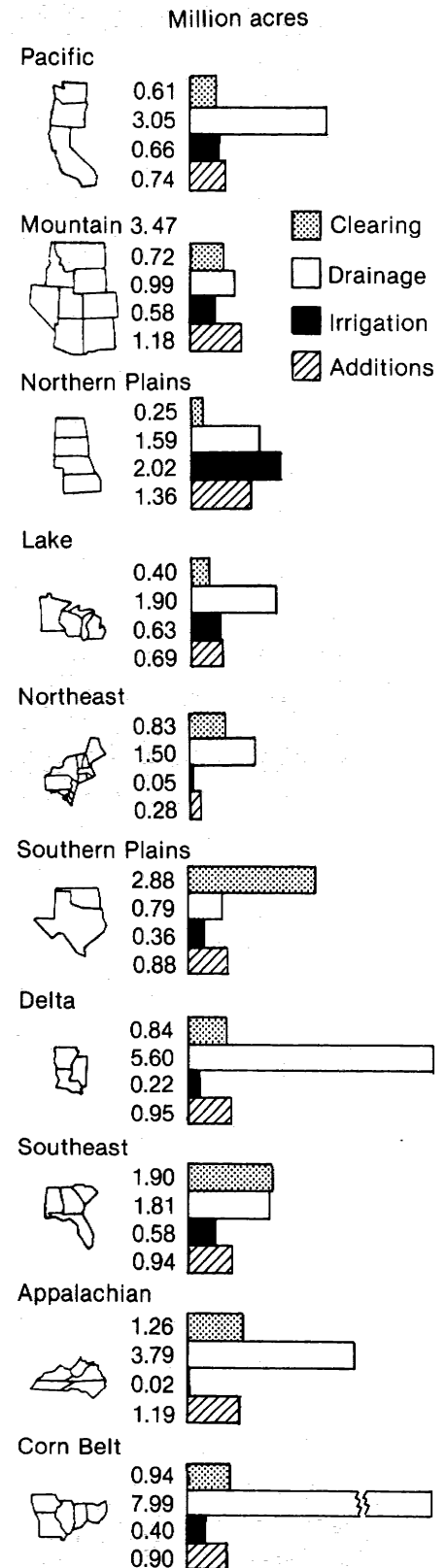
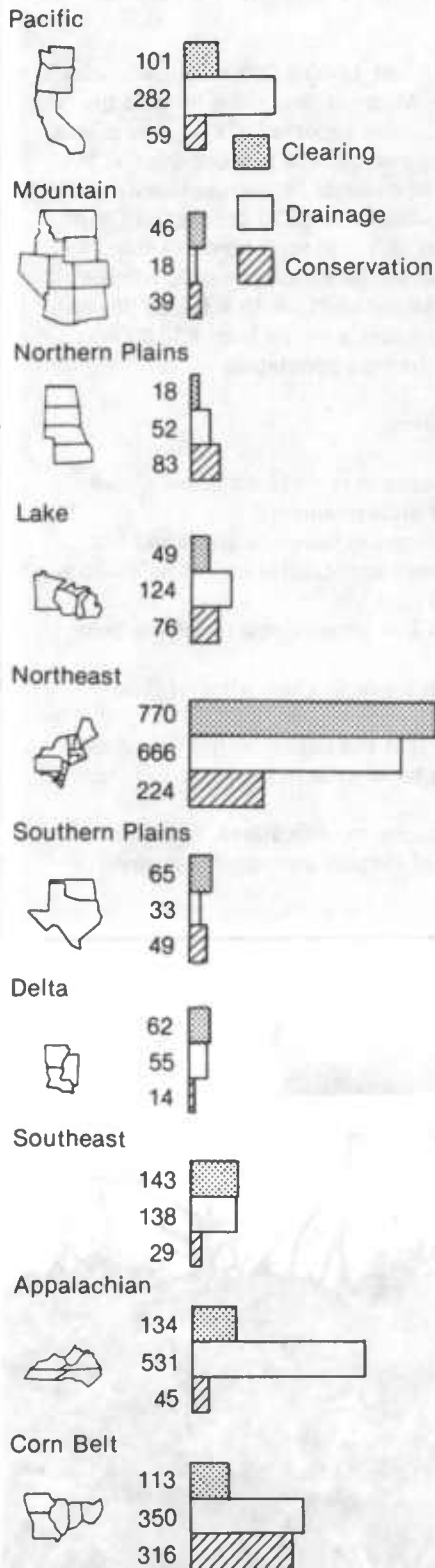


Figure 3

Cost of Improving U.S. Farmland, by Region, 1975-77

Million dollars



One of the final steps in land clearing prior to seedbed preparation. This machine removes roots and stones from the root zone.

Photo courtesy of USDA's Soil Conservation Service.



over 15 percent had been in timber production (table 3).

The most common activities required to convert to cropland were clearing of brush or trees (on about 3.1 million acres), leveling (1.8 million acres), drainage (1.7 million acres), irrigating (1.4 million acres), and stone or fencerow removal (1.1 million acres).

About 4 million acres of the new cropland were planted to row crops, about 2.6 million acres to small grains or summer fallow, and 900,000 acres to hay. Most owners (87 percent) expected that the converted cropland would remain in crops for at least 3-5 years. About 8 percent expected their land use to change to pasture or range.

"More efficient farming" was the reason given most frequently by owners (61 percent) who expanded their cropland. The next most frequent factors cited were changes in crop prices (19 percent of the owners) and changes in livestock prices (10 percent of the owners).

Clearing the Land

Over 10.6 million acres were cleared for agricultural use by 317,500

owners during 1975-77. About a third of the land cleared was in the Southern Plains and another third in the Southeast and Appalachian regions combined (table 4). Individual clearing projects for the Southern Plains and Mountain regions averaged almost 125 and 100 acres, respectively; the average size for a clearing project nationwide was about 33 acres.

Pasture renovation was the apparent objective of clearing operations on nearly 5 million acres (table 5). Most of the pasture renovation was in the Southern Plains and accounted for most of the land cleared in that region. About 3.2 million acres were added to the cropland base by clearing during the 3 years. Almost a third of this cropland had been pasture or rangeland, another third had been idle, and a fifth had been timberland. Over 2.4 million acres were converted to a use other than improved pasture or cropland.

Owners of 8.6 million acres reported that they spent in excess of \$1.5 billion in clearing their land (not all owners surveyed reported their level of investment). Thus, owners invested an average of about \$5,750 each (\$175 per acre) in land clearing. The acreage cleared tended to decline as the

Reliability of Data

In describing the highlights of the follow-on surveys, we are presenting the numbers that seem most reliable. Replies to some of the questions in the follow-ons were statistically not very reliable, because of the few numbers of responses.

The follow-ons we summarized generally had 1,000-2,000 responses, which are subject to statistical sampling error. Many of the tables include the coefficients of variation (CV) for the estimates reported. CV's are a means of evaluating the reliability of the survey results. The smaller the CV, the greater the reliability of the estimate. For example, an estimate with a CV of 10 percent is more reliable than one with a CV of 20 percent. A CV of 10 percent means that chances are 2 out of 3 that an interval constructed to represent a range from 90-110 percent of the estimate would contain the true population value. Chances are 19 out of 20, with a CV of 10 percent, that an interval constructed to represent a range from 80-120 percent of the survey value would contain the true population value.

Additional interpretive problems arise from:

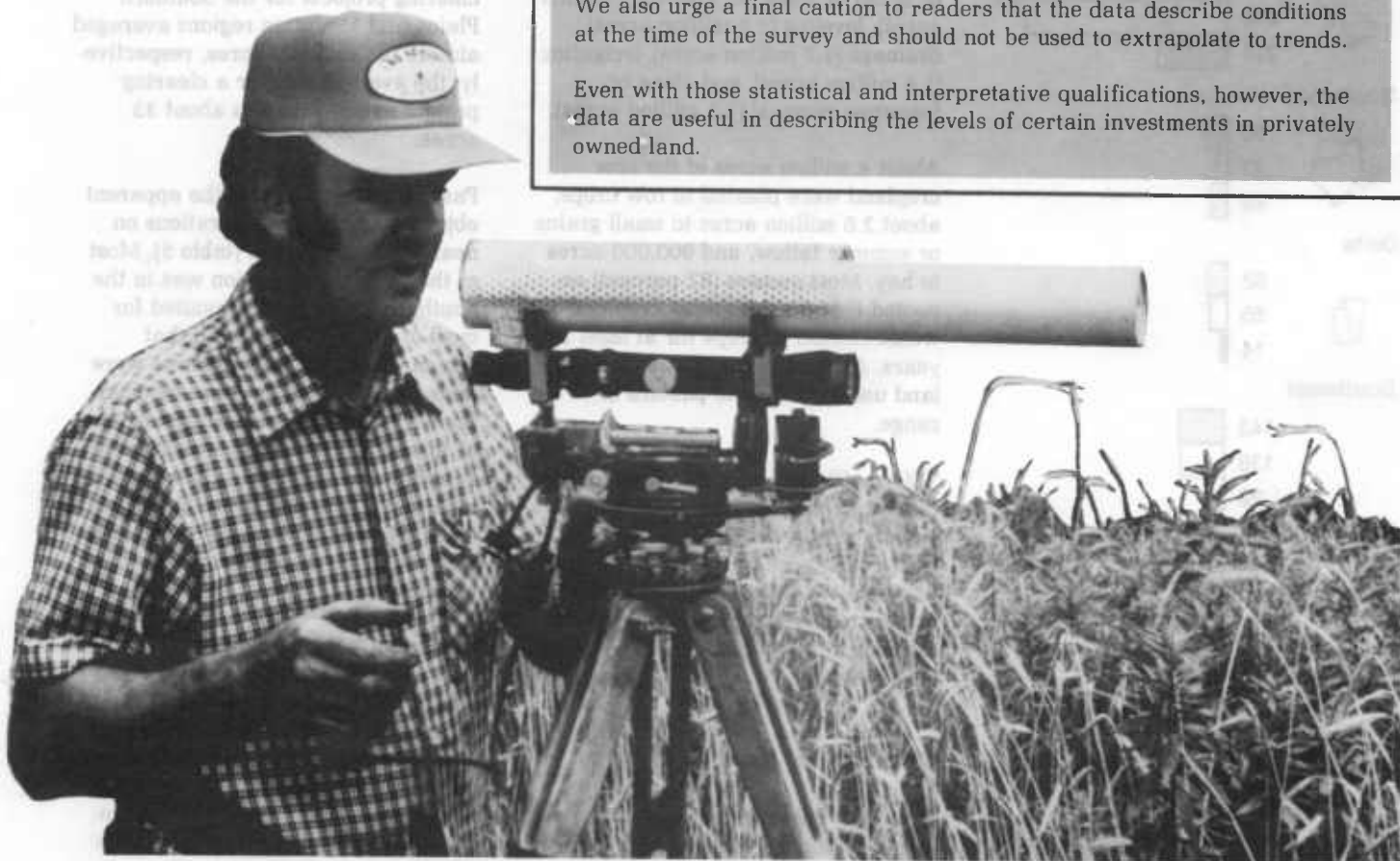
- Insufficient data for consistency across surveys (for example, cost and land use prior to and following an investment).
- Failure of the questionnaires to distinguish between gross and net changes (for example, land use change and capital regarding maintenance vs. new investment).
- Misunderstanding of questions by a few respondents (implying poor wording).
- Double-counting that may exist with a simple summation of data.

We also urge a final caution to readers that the data describe conditions at the time of the survey and should not be used to extrapolate to trends.

Even with those statistical and interpretative qualifications, however, the data are useful in describing the levels of certain investments in privately owned land.

Laser leveling a field before installing irrigation can help save water by making the slope more uniform. Machine-mounted lasers are also used in installing both surface and subsurface drainage. Introduced commercially only about 5 years ago, laser leveling is now applied on half the irrigated farmland in some U.S. areas.

Photo courtesy of USDA's Soil Conservation Service.



cost per acre rose. Over 86 percent of the land was cleared for less than \$250 per acre. The exception to this trend was the highest cost category (\$1,500 per acre and more) which accounted for only 6 percent of the land cleared but over half of the total land-clearing investment. However, since land use following clearing for this cost category was often described by the owners as something other than cropland or improved pasture, one must be cautious about whether it represents the clearing cost of agricultural land.

Draining the Land

Landowners invested in drainage systems on over 29 million acres of farmland in 1975-77, either adding to existing systems or installing new ones. More than a fourth of the land was in the Corn Belt and another third was in the Delta and Appalachian regions combined (table 6).

Owners of 24 million acres reported investing about \$2.25 billion for drainage (not all owners surveyed reported their level of investment). The average expenditure was \$94 per acre and \$6,980 per owner. Expenditures on about 17.4 million acres averaged less than \$50 per acre. Relatively few acres were drained at a cost above \$500 per acre. However, these higher cost acres accounted for over 38 percent of the total expenditure on drainage.

The major use of the land, both before and after drainage, was cropland (table 7). Of the 20.7 million acres in cropland following drainage, about 88 percent had been in cropland before drainage, 3 percent in pasture, less than 1 percent in forest, and the remainder in mixed or other uses. Only in the Delta region were fewer acres in cropland following drainage than before. The largest percentage gain in cropland use following drainage was in the Northern Plains, Mountain, Lake States, and Southern Plains regions.

About 15 percent of all owners making drainage investments during 1975-77 participated in a drainage district or other special purpose water

Table 4—Land cleared, by region, 1975-77

Region	Owners		Area	
	1,000	Percent	1,000 acres	Percent
Northeast	31.7 (18.7)	10.0	832.5 (63.2)	7.8
Lake States	22.8 (16.9)	7.2	404.8 (19.1)	3.8
Corn Belt	55.6 (11.3)	17.5	936.0 (14.5)	8.8
Northern Plains	11.5 (27.6)	3.6	250.7 (31.8)	2.3
Appalachian	74.0 (36.5)	23.3	1,257.4 (28.6)	11.8
Southeast	39.1 (28.9)	12.3	1,899.1 (36.2)	17.9
Delta	17.8 (15.0)	5.6	839.3 (19.6)	7.9
Southern Plains	23.4 (16.9)	7.4	2,877.5 (19.9)	27.1
Mountain	7.3 (21.7)	2.3	724.0 (22.2)	6.8
Pacific	34.3 (50.8)	10.8	612.6 (37.8)	5.8
48 States	317.5 (12.3)	100.0	10,633.9 (12.6)	100.0

Note: Numbers in parentheses are coefficients of variation for the estimates immediately above.

Table 5—Land use change associated with land clearing, 1975-77

Land use before clearing	Land use following clearing				
	Row crops	Small grain	Improved pasture or range	Other	Total ¹
	1,000 acres				
Timber or pulp production	515.6	78.8	515.1	405.2	1,530.2
Pasture, grass or rangeland	435.8	598.9	3,005.2	425.5	4,479.9
Idle	737.7	261.5	913.5	781.5	2,705.0
Mixed	365.8	63.6	393.0	266.0	1,122.4
Other	47.4	58.1	95.5	535.1	736.7
Total ¹	2,113.5	1,086.5	4,942.0	2,416.5	10,633.9

¹Does not add because some of those surveyed did not answer this question.

management organization. These owners made drainage investments on about 8.8 million acres, slightly over 30 percent of the total. Over 50 percent of the owners participating were from the Lake States and Corn Belt regions. Although 34 percent of the drained land in a drainage district was in the Delta, few owners from the Delta were involved.

Participants in a drainage district drained more acres than others did, 135 vs. 70 acres. But the impact of governmental participation in organizing drainage districts is unclear. Although relatively few owners participated, drainage districts may serve as demonstrations that encourage individ-

ual investments and the local impacts may be important. It appears that the owners who benefited from participating in such a district also drained more acres per unit than nonparticipants did.

Owners installed tile, pipe, or subsurface drains on about 14.4 million acres during 1975-77, including over 6.2 million acres in the Corn Belt and 2.3 million acres in the Appalachian region. The second most prevalent drainage improvement reported during the period was cleaning or dredging existing outlet ditches. This practice affected almost 4.8 million acres in the Delta region.

Table 6—New or Improved drainage systems Installed, by region, 1975-77

Region	Additions to existing drainage systems		New drainage systems		Improvements to existing systems and new drainage systems installed		Total	
	1,000 acres	Percent	1,000 acres	Percent	1,000 acres	Percent	1,000 acres	Percent
Northeast	854.9	4.7	267.8	6.9	370.6	5.5	1,493.3 (28.7)	5.2
Lake States	1,147.4	6.3	315.0	8.1	441.6	6.5	1,904.0 (15.2)	6.6
Corn Belt	5,584.1	30.4	919.0	23.7	1,484.5	21.9	7,987.6 (10.3)	27.5
Northern Plains	754.2	4.1	177.3	4.6	655.6	9.7	1,587.1 (28.5)	5.5
Appalachian	2,774.3	15.1	292.9	7.5	724.2	10.7	3,791.4 (40.3)	13.1
Southeast	792.3	4.3	347.1	8.9	672.0	9.9	1,811.4 (18.1)	6.2
Delta	4,268.7	23.3	116.9	3.0	1,216.2	17.9	5,601.8 (40.8)	19.3
Southern Plains	267.4	1.5	59.3	1.5	462.2	6.8	788.9 (34.9)	2.7
Mountain	458.9	2.5	147.4	3.8	381.7	5.6	988.0 (26.1)	3.4
Pacific	1,437.9	7.8	1,243.1	32.0	372.9	5.5	3,053.9 (29.4)	10.5
48 States	18,340.1	100.0	3,885.8	100.0	6,781.5	100.0	29,007.4 (11.5)	100.0

Note: Numbers in parentheses are coefficients of variation for the estimates immediately above.

Table 7—Land use changes associated with newly drained land, 1975-77

Land use before drainage	Land use following drainage			Total ¹
	Cropland	Pasture	Other	
	1,000 acres			
Cropland	18,213.7	58.6	417.3	18,728.5
Pasture	682.2	457.5	14.5	1,304.1
Forestland	129.9	97.3	1,130.6	1,370.1
Mixed or other	1,661.3	403.7	5,213.6	7,285.4
Total ¹	20,768.7	1,023.1	6,782.2	29,007.4

¹Does not add because some of those surveyed did not answer this question.

Table 8—Conservation practices installed, by region, 1975-77

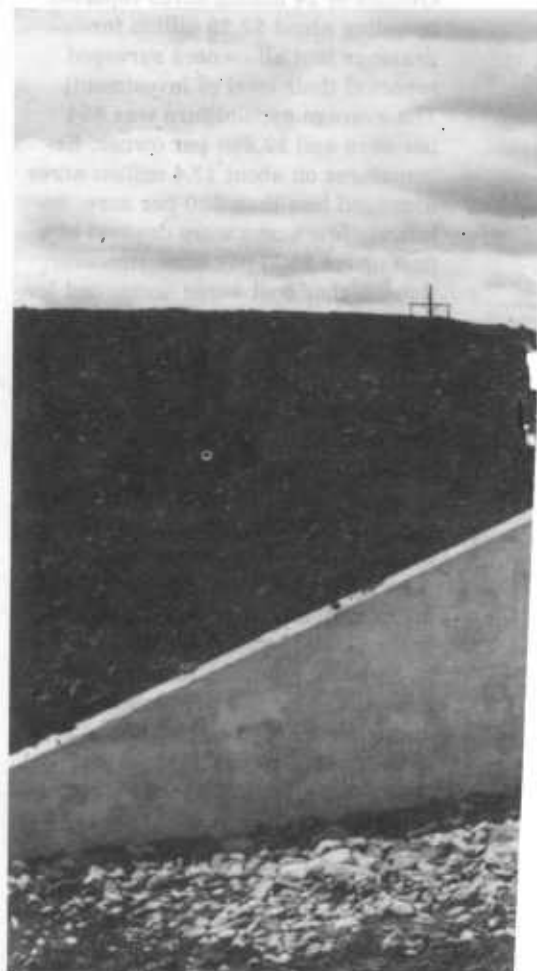
Region	Terraces		Grass waterways		Gully control structures
	Owners	Area	Owners	Area	
	1,000	1,000 acres	1,000	1,000 acres	1,000
Northeast	5.3	153.3	9.7	335.5	107.1
Lake States	1.5	31.7	36.2	1,645.4	35.2
Corn Belt	17.9	879.3	31.5	2,183.4	64.2
Northern Plains	16.0	1,789.9	10.9	1,068.4	25.8
Appalachian	2.7	189.0	16.1	447.3	42.5
Southeast	7.1	499.8	3.5	200.8	33.4
Delta	1.1	131.8	1.3	203.6	21.8
Southern Plains	18.4	2,182.1	6.4	913.4	59.6
Mountain	1.0	179.9	1.2	1,114.3	55.5
Pacific	5.2	213.0	5.6	117.9	82.8
48 States	76.2	6,249.8	122.4	8,230.0	527.9

Surface drainage is an important method for disposing of excess water in many areas, with extensive installing and repairing of field ditches common in the Corn Belt, Delta, and Southeast regions. While less land was drained in the Southern Plains, Northern Plains, and Mountain regions, surface drainage by means of field ditches and land shaping was the most common drainage investment in these three regions.

Per-acre expenditures varied with the type of drainage improvement. Expenditures for installing or repairing tile averaged about \$105 per acre while field ditching expenditures averaged less than \$25 per acre.

Conserving the Land

An estimated 292,000 U.S. landowners invested in soil conservation practices or structures—terraces, grass waterways, and gully control. About 112,000 owners installed grass waterways for about 8.2 million acres, 57,000 built



Sources of Data

Compilations of the results of the follow-on surveys are free for the asking from John Miranowski, Director, NRED/ERS, U.S. Dept. of Agriculture, Room 412, 500 12th St., S.W., Washington, D.C. 20250. Title are listed below. You can also call in your orders on (202) 447-8239.

Additions to Cropland, 1975-77. 25 pp. May 1981.

Irrigation Investment and Disinvestment, 1975-77. 37 pp. June 1981.

Investment in Conservation Structures, 1975-77. 44 pp. July 1981.

Land Purchases and Acquisitions, 1975-77. 70 pp. April 1982.

Land Drainage Investment Survey, 1975-77. 36 pp. June 1982.

Land Clearing Investment Survey, 1975-77. 25 pp. August 1982.

Landownership Characteristics and Investments in Soil Conservation. 41 pp. September 1981.

*Land Removed from Crop Production, 1975-77. 23 pp. February 1981.

*Removal or Abandonment of Selected Conservation Practices, 1975-77. 33 pp. December 1981.

Who Owns the Land? A State and Regional Summary of Landownership in the United States. 52 pp. April 1983.

Titles preceded by an asterisk are not highlighted in this brochure. Those questionnaires elicited too few responses to be considered statistically reliable.

terraces to control erosion on over 6.2 million acres, and 97,000 invested in gully control structures, like drop spillways, diversion structures, ponds, and so forth.

Terrace construction was most common in the Corn Belt, Northern Plains, and Southern Plains (table 8). Grass waterways were most prevalent in the Lake States, Corn Belt, and Appalachian regions. Gully control structures were also installed at a higher than average rate in the Corn Belt, although the highest rates were at opposite ends of the country, the Northeast and Pacific regions. Many of the water-related soil conservation investments were made in the upper Midwest.

Relatively little land use change seemed to be associated with conservation investments (table 9). For example, about 4.3 million acres were used for crops before terracing and 4.4 million acres afterwards. Land used for pasture also remained relatively constant at about 1 million acres. About 95 percent of the cropland remained cropland and over 85 percent of the pasture land remained in pasture.

Slightly more than 229,000 owners reported investments in soil conservation practices of about \$935 million (table 10). The most common type of investment was installing terraces, involving more than \$412 million. On the average, owners reported spending about \$7,200 for terracing, slightly more than \$2,000 to establish grass waterways, and slightly less than \$3,000 to install gully control structures.

Terraces, grass waterways can feed into drop spillways like this one to control, slow, and disperse water flow, thereby reducing erosion.

Photo courtesy of USDA's Soil Conservation Service.



Photo courtesy of USDA's Soil Conservation Service.

Drip irrigation delivers a small, controlled flow of water directly to plants' roots, saving water, energy. Although drip irrigation is especially advantageous for some crops, most irrigation being installed in the United States today is the flood or spray type.

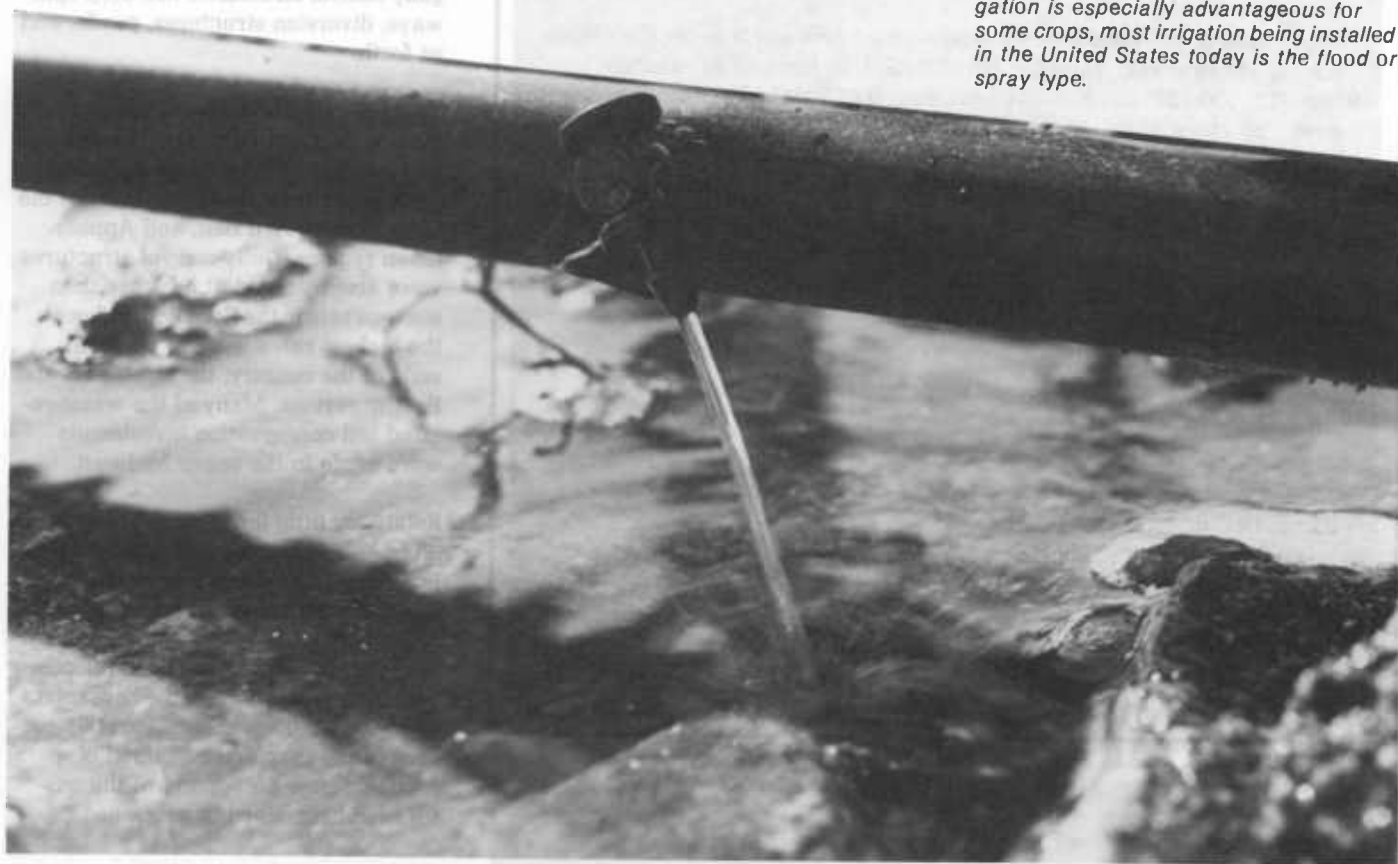


Table 9—Land use change associated with terracing, 1975-77

Land use before terracing	Land use following terracing				Total ¹
	Cropland	Pasture	Hay	Mixed and other	
	1,000 acres				
Cropland	4,059.9	46.5	33.1	141.9	4,320.7
Pasture	92.9	816.1	4.0	45.2	958.3
Forestland	14.9	63.9	—	32.3	111.1
Hay	31.6	102.7	4.8	—	139.1
Mixed and other	247.7	50.2	2.9	420.2	720.9
Total	4,447.0	1,079.4	44.8	639.6	6,250.1

—None reported.

¹Does not add because some of those surveyed did not answer this question.

Table 10—Investment in conservation practices, 1975-77

Type of practice	Owners		Area	
	1,000	Percent	\$1,000	Percent
Terraces	57.0	24.9	412,861	44.1
Grass waterways	111.9	48.9	236,348	25.3
Gully control structures	96.9	42.3	285,982	30.6
Subtotal	229.1	100.0	935,191	100.0
Owners not reporting	62.9			
Total	292.0			

Irrigating the Land

An estimated 77,100 owners irrigated slightly more than 5.5 million acres for the first time during 1975-77 (table 11). Since irrigated land for 1974 totaled less than 42 million acres (according to the 1974 Census of Agriculture), this addition was quite significant.

These owners invested almost \$1.7 billion (about \$375 per acre) on new irrigation projects during 1975-77 (table 12). The average owner invested over \$21,600 irrigating slightly more than 70 acres. Capital to install new irrigation systems came mostly from farmers' loans or personal funds. In addition, the public sector invests large sums of money in off-farm projects like dams and canals in order to impound and distribute irrigation water.

About 5 million acres were used for cropland following irrigation. About 3.9 million of those acres had been in cropland and cropland mixed with other uses before the investment was

made. Therefore, about 1 million acres were added to the cropland base by new irrigation: 769,000 acres of former pastureland and 99,000 acres of former timberland.

Center pivot distribution systems were used on almost half of the newly irrigated land. Other sprinkler systems were used on about a fourth and gravity systems were used on the remaining fourth of newly irrigated land. Wells supplied the water for three-fourths of the new land; surface water sources, one-fourth.

112 Million Acres Acquired

An estimated 3.3 million owners purchased or otherwise acquired about 112.5 million acres in the United States during 1975-77 (table 13). The average owner acquired about 35 acres. These numbers imply that about 3 percent of the land nationwide changes hands each year. Over 25 percent of the owners reporting purchases were in the Northeast, 14 percent in the Corn Belt, and 13 percent in the Appalachian region.

Owners reported spending a total of almost \$184 billion in 1975-77 to acquire land. The 2.9 million owners reporting value data did so for about 56.4 million acres. Thus, the average price per acre was about \$3,250 and the average spent per tract was about \$64,000.

About two-thirds of the owners reported a price in excess of \$5,000 per acre, but most of those purchases were for nonagricultural uses. Land acquired for agricultural use is usually in larger tracts and sells at a lower price per acre. About one-sixth of the parcels cost less than \$1,000 per acre and these parcels (representing 56 percent of the land) were primarily for agricultural use (table 14). Much of the total expenditure is accounted for in tracts where the purchase price exceeded \$5,000 per acre. This was the predominant category in terms of value in nearly all the farm production regions. This category accounted for almost 83 percent of total reported expenditures.

Table 11—Newly irrigated land

Year	Owners		Area	
	1,000	Percent	1,000 acres	Percent
1975	47.8 (44.8)	62.0	1,893.2 (13.3)	34.2
1976	19.9 (13.6)	25.8	1,581.7 (10.4)	28.6
1977	22.1 (12.7)	28.7	2,059.1 (10.8)	37.2
Total	77.1 ¹ (28.6)	100.0 ¹	5,534.0 (7.0)	100.0

Note: Numbers in parentheses are coefficients of variation for the estimates immediately above.

¹Number of owners sums to more than the total because some owners reported new irrigation in more than one year.

Table 12—Source of funds for new irrigation, 1975-77

Source	Owners		Area		Cost of irrigation	
	1,000	Percent	1,000 acres	Percent	Mil. dol.	Dol./acre
Federal Government	3.3	4.2	73.4	1.3	13.1	178
Personal funds	28.7	37.2	1,803.8	32.6	615.1	341
Individual loan	6.9	8.9	123.6	2.2	53.8	435
Farmers Home Admin.	3.1	4.0	291.3	5.3	93.0	319
Production Credit Association	2.3	3.0	384.8	6.9	127.8	332
Federal Land Banks	2.7	3.4	479.8	8.7	154.5	322
Other banks or savings institutions	7.7	10.0	917.5	16.6	408.3	445
Insurance companies	1.2	1.6	230.4	4.2	118.2	513
Other	.9	1.1	84.1	1.5	44.6	530
No response	36.6	47.5	1,145.3	20.7	41.3	36
Total	77.1 ¹	100.0 ¹	5,534.0	100.0	1,669.7	377

¹Number of owners sums to more than the total because some owners reported more than one source of funds.

Related Reports

An extended summary of the 1978 Landownership Survey, published by USDA in April 1980, is still available. *Landownership in the United States, 1978* (104 pp.; \$5.00; GPO no. 001-000-04139-8) covers the characteristics of landowners (occupation, tenure, education, income, sex, age, race), and landholdings (concentration, size, method of acquisition, period of acquisition) with both tables and charts. The report also details the survey method, reprints the questionnaire used, and presents the responses to the questionnaire aggregated by region.

Other recent reports from ERS dealing with land use also available include:

Major Uses of Land in the United States, 1978. 28 pp.; \$3.50; GPO no. 001-000-04285-8.

Cropland Trends Across the Nation. 28 pp.; \$3.25; GPO no. 001-019-00328-6.

Write to Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. Make check or money order payable to Superintendent of Documents. Be sure to include the GPO numbers of the reports in your order. You can also charge your purchase by telephone to your VISA, MasterCard, or GPO deposit account; call GPO's order desk at (202) 783-3238. Foreign addresses, please add 25 percent for postage.

Land use was seldom changed at the time of purchase. In the Corn Belt, over 400,000 acres were changed from noncropland to cropland (3 percent of all Corn Belt land sold). In the Appalachian region, over 280,000 acres were changed from cropland to noncropland (3 percent of all Appalachian land sold), while over 630,000 acres (6-7 percent of Appalachian land sold) were changed from noncropland to cropland—a net gain of about 350,000 cropland acres in the Appalachian region.

Over 70 percent of the owners of new tracts reported that they purchased the tract for a residential or business site (table 15). We suspect that most of those tracts are in the rural-urban fringe. Only about 19 percent of the owners reported an agricultural use, but those owners accounted for 75 percent of the land. Agricultural use was especially prevalent in the Northern Plains, Southern Plains, Southeast, and Corn Belt.

Afterword

The supply of land for agricultural use is related both to the quantity of land and how land currently in use can be improved. This brochure reports the results of surveys that addressed both dimensions of the land supply issue for 1975-77.

The adequacy of the Nation's land base to meet the long-term food and fiber needs remains a policy concern of USDA, notwithstanding current problems related to excess production. The ERS research program continuously addresses the question of agricultural capacity. Work planned for the near future includes: an evaluation of land added to the cropland base between 1977 and 1982; a survey of farm expenditures for soil conservation; an evaluation of rangeland improvement investment needed to offset projected conversion of rangeland to cropland in the Great Plains; a review of the history of and prospects for farm drainage in the United States; and an evaluation of resource capacity to meet global food demands in the year 2000.

Table 13—Amount of land purchased or acquired, by region

Region	1975	1976	1977	Total
<i>1,000 acres</i>				
Northeast	2,280 (35.5)	3,405 (35.6)	3,056 (39.0)	8,741 (31.1)
Lake States	2,945 (18.4)	2,867 (19.9)	2,582 (14.0)	8,394 (11.1)
Corn Belt	3,789 (13.6)	4,547 (29.5)	4,038 (15.0)	12,374 (13.0)
Northern Plains	7,585 (38.3)	5,977 (40.5)	2,218 (17.6)	15,780 (34.0)
Appalachian	1,916 (21.5)	3,657 (16.8)	3,301 (30.6)	8,874 (14.3)
Southeast	2,127 (26.4)	3,281 (37.0)	3,217 (31.4)	8,625 (19.6)
Delta	990 (20.5)	1,675 (22.3)	1,558 (27.5)	4,223 (16.3)
Southern Plains	4,088 (21.8)	5,352 (22.4)	3,028 (20.6)	12,468 (12.6)
Mountain	3,646 (20.6)	2,350 (22.0)	3,418 (21.3)	9,414 (12.0)
Pacific	2,056 (30.4)	17,524 (23.0)	4,022 (20.4)	23,602 (13.9)
48 States	31,422 (11.0)	50,635 (10.2)	30,438 (8.0)	112,495 (7.3)

Note: Numbers in parentheses are coefficients of variation for the estimates immediately above.

Table 14—Amount of land and average parcel size, most recent tract purchased or acquired, by price per acre, 1975-77

Price per acre	Amount of land purchased or acquired	Average parcel size
	<i>1,000 acres</i>	<i>Acres</i>
Less than \$1,000	43,600 (6.7)	109
\$1,000-\$1,999	6,307 (14.4)	43
\$2,000-\$4,999	3,035 (32.2)	14
\$5,000 and over	3,474 (18.4)	3
No response	21,029 (10.0)	60
Total	77,445 (4.7)	31

Note: Numbers in parentheses are coefficients of variation for the estimates immediately above.

Additional Reading

- Potential Cropland: The Ownership Factor.** 14 pp.; October 1981; \$4.50 microfiche; \$7.00 paper. Order no. PB82-117854.
- Linkages Between Landownership and Rural Land.** 19 pp.; February 1983; \$4.50 microfiche; \$7.00 paper. Order no. PB83-139956.
- Linkages Between Landownership and Rural Land: Appendix Data.** 224

pp.; 1983; \$4.50 microfiche; \$19.00 paper. Order no. PB83-139949.

These reports can be purchased from the National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22161. For more information, call the NTIS order desk at (703) 487-4780. Telephone orders can be charged to your VISA, MasterCard, American Express, or NTIS account.



Table 15—Proposed use of most recent tract purchased or acquired, by region, 1975-77

Region	Agricultural	Residence/ subdivision	Business/other nonagricultural	Total
<i>1,000 tracts</i>				
Northeast	64	708	23	889
Lakes States	43	177	35	258
Corn Belt	118	311	18	451
Northern Plains	63	27	1	93
Appalachian	71	131	205	409
Southeast	88	52	171	322
Delta	39	83	11	133
Southern Plains	67	92	2	161
Mountain	18	183	9	234
Pacific	50	128	137	314
48 States	622	1,970	612	3,265

Parallel, cut and fill, grassed backslope terraces help reduce erosion. These terraces drain into pond at top right.

Photo courtesy of USDA's Soil Conservation Service.

¹Does not add because some of those surveyed did not answer this question.

**United States
Department of Agriculture**

Washington, D.C.
20250

OFFICIAL BUSINESS
Penalty for Private Use, \$300



Postage and Fees Paid
U.S. Department of Agriculture
AGR-101

THIRD CLASS BULK RATE

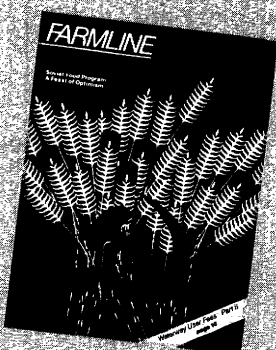
Takes the Pulse of **FARMLINE** Agricultural Economics

The latest economic analysis and research results from the U.S. Department of Agriculture are presented in in-depth articles punctuated by imaginative, two-color charts.


FARMLINE is readable, original, and objective.







FARMLINE provides economic insight to the big issues facing agriculture: the farm financial picture, international trade, land use and irrigation, major developments in commodities, farm inputs, rural development, and much more.

To subscribe, send a check or money order for \$18 (\$22.50 foreign) to Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.



Now Available

 **Chartbook of Nonmetro-Metro Trends**

	Population
	Employment
	Income
	Poverty
	Housing
	Government

Chartbook of Nonmetro-Metro Trends
GPO no. 001-019-00351-1
\$2.50

Make check or money order payable to Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402