

The design of the Federal crop insurance program will be evaluated to minimize future outlays and improve the equity of disaster relief efforts. Policymakers may also consider a policy of guaranteeing a target farm revenue for more equitable protection of farm income from yield losses.

The stocks release mechanism of the farmer-owned reserve will be studied to determine if it is effectively fulfilling its role of price stabilization. CCC sales policy could be better coupled with reserve policy.

Has EEP succeeded in export expansion? The export enhancement program will be reexamined to determine its future in the light of multilateral trade negotiations and whether it is the most cost-effective policy tool for increasing exports.

How can the U.S. grain marketing system improve to better compete against foreign exporters? Policies designed to enhance grain quality, such as identifying varieties and categorizing their qualities and specifying minimum quality standards for CCC loans, may be discussed.

How will land use, yields, and farm income from barley be affected by low-input alternative farming? Environmental concerns, especially regarding rural water quality, will focus on ways to limit agricultural contaminants.

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## Glossary

**Acreage allotment** -- An individual farm's share of the national acreage that the Secretary of Agriculture determines is needed to produce sufficient supplies of a particular crop. The farm's share is based on its previous production.

**Acreage reduction program (ARP)** -- A voluntary land retirement system in which participating farmers idle a prescribed portion of their crop acreage base of wheat, feed grains, cotton, or rice. The base is the average of the acreage planted for harvest and considered to be planted for harvest. Acreage considered to be planted includes any acreage not planted because of acreage reduction and diversion programs during a period specified by law. Farmers are not given a direct payment for ARP participation, although they must participate to be eligible for benefits like Commodity Credit Corporation loans and deficiency payments. Participating producers are sometimes offered the option of idling additional land under a paid land diversion program, which gives them a specific payment for each idled acre.

**Acreage slippage** -- A measure of the effectiveness of acreage reduction programs. Slippage occurs when harvested acres change by less than the change in idled acres.

**Advance deficiency payments** -- The Secretary is required to make advance deficiency payments to producers of crops when an acreage limitation program is in effect and deficiency payments are expected to be paid. Advance deficiency payments can range from 30 to 50 percent of expected payments.

**Advance recourse loans** -- Price-support loans made early in a marketing year to enable farmers to hold their crops for later sale. Farmers must repay the recourse loan with interest and reclaim the crops used as collateral.

**Agricultural inputs** -- Components of agricultural production, such as land, labor, and the capital needed to acquire other inputs, including machinery, fertilizer, seed, and pesticides.

**Agricultural Stabilization and Conservation Service (ASCS)** -- A USDA agency responsible for administering farm price- and income-support programs and some conservation and forestry cost-sharing programs.

**Basic commodities** -- Six crops (corn, cotton, peanuts, rice, tobacco, and wheat) declared by legislation as price-supported commodities.

**Bilateral trade agreement** -- A trade agreement between any two nations. The agreement may be either preferential (the obligations and benefits apply only to the two countries involved) or most-favored-nation (the benefits and obligations negotiated between the two countries are extended to all or most other countries).

**Carryover** -- Existing supplies of a farm commodity at the beginning of a new harvest.

**Cash-out option for generic certificates** -- The original holder of a generic commodity certificate has the option of redeeming the certificate at its face value for cash from the Commodity Credit Corporation instead of exchanging it for commodities.

**Commodity Credit Corporation (CCC)** -- A federally owned and operated corporation within the U.S. Department of Agriculture created to stabilize, support, and protect farm income and prices through loans, purchases, payments, and other operations. All money transactions for agricultural price and income support and related programs are handled through the CCC. The CCC also helps maintain balanced, adequate supplies of agricultural commodities and helps in their orderly distribution.

**Common Agricultural Policy (CAP)** -- A set of regulations by which member states of the European Community (EC) seek to merge their individual agricultural programs into a unified effort to promote regional agricultural development and achieve other goals. The variable levy and export subsidies are the two main elements of the CAP.

**Concessional sales** -- Credit sales of a commodity in which the buyer is allowed more favorable payment terms than those on the open market (such as low-interest, long-term credit).

**Conservation compliance provision** -- Provision of the Food Security Act of 1985 that requires farmers with highly erodible cropland to begin implementing an approved conservation plan by 1990. The plan must be completed by 1995 for the farm operation to remain eligible for Federal program benefits.

**Conservation reserve program (CRP)** -- A major provision of the Food Security Act of 1985 designed to reduce erosion on 40-45 million acres of farmland. Under the program, producers who sign contracts agree to convert highly erodible cropland to approved conservation uses for 10 years. In exchange, participating producers receive annual rental payments and cash or in-kind payments to share up to 50 percent of the cost of establishing permanent vegetative cover.

**Conserving uses** -- Land idled from production and planted in annual, biennial, or perennial grasses, or other soil conserving crop.

**Cost of production** -- An amount, measured in dollars, of all purchased inputs, allowances for management, and rent, that is necessary to produce farm products.

**Crop acreage base** -- A farm's average acreage of wheat, feed grains, cotton, or rice planted for harvest, plus land not planted because of acreage reduction or diversion programs during a period specified by law. Crop acreage bases are permanently

reduced by the portion of land placed in the conservation reserve program.

**Crop failure** -- Mainly acreage on which crops were not harvested because of weather, insects, and diseases, but includes some land not harvested due to lack of labor, low market prices, or other factors.

**Crop year** -- The year in which a crop is planted; used interchangeably with marketing year.

**Cross compliance (full or strict)** -- A requirement that a farmer participating in a program for one crop must also meet the program provisions for other major program crops which the farmer grows. Strict cross-compliance provisions have not been enforced since the 1960's.

**Cross compliance (limited)** -- A producer participating in one commodity program must not plant in excess of the crop acreage base on that farm for any of the other program commodities for which an acreage reduction program is in effect. Limited cross-compliance authority was implemented in the late 1970's and remains in effect under the Food Security Act of 1985.

**Decoupling** -- A farm policy concept which, by separating farm program payments from the amount of production, would represent an alternative to current policies. Farmers would make planting decisions based on market prices but receive income-support payments independent of production and marketing decisions.

**Deficiency payment** -- A Government payment made to farmers who participate in wheat, feed grain, rice, or cotton programs. The payment rate is per bushel, pound, or hundredweight, based on the difference between the price level established by law (target price) and the higher of the market price during a period specified by law or the price per unit at which the Government will provide loans to farmers to enable them to hold their crops for later sale (loan rate). The payment is equal to the payment rate multiplied by the acreage planted for harvest and then by the program yield established for the particular farm.

**Direct payments** -- Payments in the form of cash or commodity certificates made directly to producers for such purposes as deficiency payments, annual land diversion, or conservation reserve payments.

**Disaster payments** -- Federal aid provided to farmers for feed grains, wheat, rice, and upland cotton who have crop insurance (when available), when either planting is prevented or crop yields are abnormally low because of adverse weather and related conditions. Payments also may be made under special legislation enacted after an extensive natural disaster.

**Emergency Feed Assistance Program** -- Provides for the sale of Commodity Credit Corporation-owned grain at 75 percent of the

basic county loan rate to livestock producers whose feed harvest has suffered because of drought or excess moisture.

**European Community (EC)** -- Established by the Treaty of Rome in 1957, also known as the European Economic Community and the Common Market. Originally composed of 6 European nations, it has expanded to 12. The EC attempts to unify and integrate member economies by establishing a customs union and common economic policies, including the Common Agricultural Policy (CAP).

**Exchange rate** -- Number of units of one currency that can be exchanged for one unit of another currency at a given time.

**Export enhancement program (EEP)** -- Begun in May 1985 under a Commodity Credit Corporation charter to help U.S. exporters meet competitors' prices in subsidized markets. Under the EEP, exporters are awarded bonus certificates which are redeemable for CCC-owned commodities, enabling them to sell certain commodities to specified countries at prices below those of the U.S. market.

**Export subsidies** -- Special incentives, such as cash payments, tax exemptions, preferential exchange rates, and special contracts, extended by governments to encourage increased foreign sales; often used when a nation's domestic price for a good is artificially raised above world market prices.

**Farm acreage base** -- The annual total of the crop acreage bases (wheat, feed grains, upland cotton, and rice) on a farm, the average acreage planted to soybeans, peanuts, and other approved nonprogram crops, and the average acreage devoted to conserving uses. Conserving uses include all uses of cropland except crop acreage bases, acreage devoted to nonprogram crops, acreage enrolled in annual acreage reduction or limitation programs, and acreage in the conservation reserve.

**Farmer-owned reserve (FOR)** -- A program designed to provide protection against wheat and feed grain production shortfalls and provide a buffer against unusually sharp price movements. Farmers can place eligible grain in storage and receive extended loans for 3 years with extensions as warranted by market conditions. The loans are nonrecourse in that farmers can forfeit the commodity held as collateral to the Government without penalty and without paying accumulated interest in full settlement of the loan.

**Federal crop insurance** -- A subsidized insurance program which provides farmers with a means for risk management and financial stability against crop production loss.

**Feed grains** -- Any of several grains most commonly used for livestock or poultry feed, including corn, grain sorghum, oats, and barley.

**Findley loan rates** -- Originally proposed by Representative Paul Findley (R-Ill), this provision was adopted in the Food Security Act of 1985. It gives the Secretary of Agriculture the

discretionary authority to reduce the loan rate (price per unit at which the Government will provide loans to farmers to enable them to hold their crops for later sale) by up to 20 percent, if necessary, to make the commodity more competitive on the world market.

**Food Security Act of 1985 (PL 99-198)** -- The omnibus food and agriculture legislation signed into law on December 23, 1985, that provides a 5-year framework for the Secretary of Agriculture to administer various agriculture and food programs.

**General Agreement on Tariffs and Trade (GATT)** -- An agreement originally negotiated in Geneva, Switzerland, in 1947 among 23 countries, including the United States, to increase international trade by reducing tariffs and other trade barriers. The agreement provides a code of conduct for international commerce and a framework for periodic multilateral negotiations on trade liberalization and expansion.

**Generic commodity certificates** -- Negotiable certificates, which do not specify a certain commodity, that are issued by USDA in lieu of cash payments to commodity program participants and sellers of agricultural products. The certificates, frequently referred to as payment-in-kind (PIK) certificates, can be used to acquire stocks held as collateral on Government loans or owned by the Commodity Credit Corporation.

**Harvested acres** -- Acres actually harvested for a particular crop. Usually somewhat smaller at the national level than planted acres because of abandonment due to weather damage or other disasters or market prices too low to cover harvesting costs.

**Import barriers** -- Quotas, tariffs, embargoes, and restrictive licensing used by a country to restrict the quantity or value of a good that may enter that country.

**Import quota** -- The maximum quantity or value of a commodity allowed to enter a country during a specified time period.

**Inventory (CCC)** -- The quantity of a commodity owned by the Commodity Credit Corporation (CCC) at any specified time.

**Loan rate** -- The price per unit (bushel, bale, or pound) at which the Government will provide loans to farmers to enable them to hold their crops for later sale.

**Marketing board** -- A major form of government involvement by other countries to control the marketing of a commodity. These boards generally handle all export sales for the commodity; they may administer provisions to guarantee farmers a minimum price each year.

**Marketing loan program** -- A program authorized by the Food Security Act of 1985 that allows producers to repay nonrecourse price support loans at less than the announced loan rates

whenever the world price for the commodity is less than the loan rate. Under the act, the programs are mandatory for upland cotton and rice, and discretionary for wheat, feed grains, and soybeans. To date, the discretionary programs have not been implemented.

**Marketing year** -- Generally, the period from the beginning of a new harvest through marketing the following year.

**Multilateral trade negotiations** -- Discussions of trade issues involving three or more countries.

**National Agricultural Statistics Service (NASS)** -- Conducts surveys and publishes reports detailing data on production, stocks, prices, labor, weather, and other information of interest to those associated with agriculture.

**National farm program acreage** -- The number of harvested acres of feed grains, wheat, upland cotton, and rice needed nationally to meet domestic and export use and to accomplish any desired increase or decrease in carryover levels.

**Net farm income** -- Measures the profit or loss associated with a given year's production; approximates the net value of agricultural production regardless of whether the commodities were sold, fed, or placed in inventory during the year.

**Nonprogram crop** -- Crops, such as potatoes, vegetables, fruits, and hay that are not included in Federal price support programs.

**Nonrecourse loans** -- The major price support instrument used by the Commodity Credit Corporation (CCC) to support the price of feed grains, cotton, peanuts, and tobacco. Farmers who agree to comply with all commodity program provisions may pledge a quantity of a commodity as collateral and obtain a loan from the CCC. The borrower may elect either to repay the loan with interest within a specified period and regain control of the collateral commodity or default on the loan. In case of a default, the borrower forfeits without penalty the collateral commodity to the CCC.

**Normal crop acreage** -- The acreage on a farm normally devoted to a group of designated crops. When a set-aside program is in effect, the total of the planted acreage of the designated crops and the set-aside acreage cannot exceed the normal crop acreage. Producers must comply to be eligible for commodity loan programs or deficiency payments.

**Normal yield** -- A term designating the average historical yield established for a particular farm or area.

**Offsetting compliance** -- Requires that a producer participating in a diversion or acreage reduction program must not offset that reduction by planting more than the acreage base for that crop on another farm under the same management control.



**Paid land diversion** -- If the Secretary of Agriculture determines that planted acres for a program crop should be reduced, producers may be offered a paid voluntary land diversion. Farmers are given a specific payment per acre to idle a percentage of their crop acreage base. The idled acreage is in addition to an acreage reduction program.

**Parity price** -- Originally defined as the price which gives a unit of a commodity the same purchasing power today as it had in the 1910-14 base period. In 1948, the base prices used in the calculation were made dependent on the most recent 10-year average price for commodities.

**Payment-in-kind (PIK)** -- A payment made to eligible producers in the form of an equivalent amount of commodities owned by the Commodity Credit Corporation.

**Payment limitation** -- The maximum amount of commodity program benefits a person can receive. A \$50,000 per person payment limitation was established in 1981 and applies to direct subsidy payments to wheat, feed grain, cotton, and rice producers. The law was amended in 1987 for the 1987 through 1990 crops to place a \$250,000 limit on total program payments.

**Permanent legislation** -- Legislation that would be in force in the absence of all temporary amendments and temporarily suspended provisions. The Agricultural Adjustment Act of 1938 and the Agricultural Act of 1949 serve as the principal laws authorizing the major commodity programs.

**Permitted acreage** -- The maximum acreage of a crop which may be planted for harvest. The permitted acreage is computed by multiplying the crop acreage base by the acreage reduction program requirement (announced by the Commodity Credit Corporation each year) minus the diversion acreage (if applicable). For example, if a farm has a crop acreage base of 100 acres and a 10-percent acreage reduction (ARP) is required, the permitted acreage is 90 acres.

**PIK and roll** -- A procedure by which producers attempt to profit from situations in which certificate exchange values (posted county prices) are below nonrecourse loan rates. With this procedure, a producer places the eligible commodity under nonrecourse loan at the loan rate, and uses generic certificates to exchange the commodity out from under loan. If the posted county price is below the nonrecourse loan rate, then the producer is able to acquire the quantity placed under loan for less than the proceeds of the nonrecourse loan, in addition to saving interest and storage charges.

**Price-support programs** -- Government programs that aim to keep farm prices received by participating producers from falling below specific minimum prices.

**Producer** -- A person who, as owner, landlord, tenant, or sharecropper, is entitled to a share of the crops available for

marketing from the farm or a share of the proceeds from the sale of those commodities.

**Producer subsidy equivalents (PSE's)** -- An economic concept measuring the amount of the cash subsidy or tax needed to hold farmers' incomes at current levels if all government agricultural programs were removed.

**Production controls** -- Any Government program or policy intended to limit production. These have included acreage allotments, acreage reduction, set aside, and diverted acreage.

**Production expenses** -- Total cash outlays for production. Capital expenses are figured on annual depreciation rather than on yearly cash outlays for capital items.

**Program allocation factor** -- The ratio of the national program acreage (the estimated acreage needed to meet domestic consumption, export sales, and any desired change in domestic stocks) to the estimate of acreage harvested in the current year.

**Program costs** -- No single definition is applicable to all uses. Program costs may be (1) gross or net expenditures of the Commodity Credit Corporation on a commodity or all commodities during a fiscal year or other period; (2) the realized loss on disposition of a commodity, plus other related net costs during a fiscal year or other period; (3) the net costs attributed to a particular year's crop of a commodity during the marketing year for that commodity.

**Program crops** -- Federal support programs are available to producers of wheat, corn, barley, grain sorghum, oats, rye, extra long staple and upland cotton, rice, soybeans, tobacco, peanuts, and sugar.

**Program yield** -- The farm commodity yield of record determined by averaging the yield for the 1981-85 crops, dropping the high and low years. Program yields are constant for the 1986-90 crops. The farm program yield applied to eligible acreage determines the level of production eligible for direct payments to producers.

**Set-aside** -- A voluntary program to limit production by restricting the use of land. When offered, producers must participate to be eligible for Federal loans, purchases, and other payments.

**Six-rowed barley** -- The axis of the barley head has nodes throughout its length, alternating from side to side. For six-rowed barley, three kernels develop at each node, a central kernel and two lateral kernels.

**Subsidy** -- A direct or indirect benefit granted by a government for the production or distribution of a good.

**Supply control** -- The policy of changing the amount of acreage permitted to be planted to a commodity or the quantity of a

commodity allowed to be sold by a program participant; used to maintain a desired carryover or price level.

**Target price** -- A price level established by law for wheat, feed grains, rice, and cotton. Farmers participating in the Federal commodity programs receive the difference between the target price and the higher of the market price during a period prescribed by law or the unit price at which the Government will provide loans to farmers to enable them to hold their crops for later sale (the loan rate).

**Tariffs** -- Taxes imposed on commodity imports by a government; may be either a fixed charge per unit of product imported (specific tariff) or a fixed percentage of value (ad valorem tariff).

**Two-rowed barley** -- Grown primarily in the Northwest and intermountain areas of the United States. They have medium sized, uniform, plump kernels with a thin hull. They are generally low in protein and high in starch with vigorous germination and intermediate enzymatic activity during malting. It is used by the brewing industry both by itself and for blending with midwestern six-rowed barley.

**Variable levies** -- The difference between the price of a foreign product at the port and the official price at which competitive imports can be sold. Levies are effectively a variable tax on imports or a variable subsidy to exports.

**World price** -- Often refers to the cost, insurance, and freight (c.i.f.) price of a commodity at the principal port of a major importing country or area.

**0/92** -- An optional acreage diversion program that allows wheat and feed grain producers to devote all or a portion of their permitted acreage to conserving uses and receive deficiency payments on the acreage. The program will make deficiency payments for a maximum of 92 percent of a farm's permitted acreage.

**50/92** -- Allows cotton and rice growers who plant at least 50 percent of their permitted acreage to receive 92 percent of their deficiency payments under certain conditions. The Farm Disaster Assistance Act of 1987 also authorized 50/92 for wheat, feed grain, cotton, and rice producers who were affected by a natural disaster in 1987 and met certain criteria stated in the law.

Appendix table 1--Barley acreage, yield, and production, 1950-88

Year	Planted	Harvested	Diverted <u>1/</u>	Yield	Production
	----- Million acres-----			Bushels per acre	Million bushels
1950	13.0	11.2	--	27.2	303.7
1951	10.8	9.4	--	27.3	257.2
1952	9.2	8.2	--	27.7	228.2
1953	9.6	8.7	--	28.4	246.7
1954	14.7	13.4	--	28.4	379.3
1955	16.3	14.5	--	27.8	403.1
1956	14.7	12.9	--	29.3	376.7
1957	16.4	14.9	--	29.8	442.8
1958	16.2	14.8	--	32.3	477.4
1959	16.8	14.9	--	28.3	420.2
1960	15.5	13.9	--	31.0	429.0
1961	15.6	12.8	--	30.6	392.4
1962	14.4	12.2	2.4	35.0	427.7
1963	13.5	11.2	2.7	35.0	392.8
1964	11.7	10.3	3.7	37.6	386.1
1965	10.1	9.2	3.7	42.9	393.1
1966	11.2	10.3	3.7	38.3	392.1
1967	10.1	9.2	--	40.5	373.7
1968	10.5	9.7	--	43.8	426.2
1969	10.3	9.6	4.4	44.7	427.1
1970	10.5	9.7	3.9	42.8	416.1
1971	11.1	10.1	--	45.8	462.4
1972	10.6	9.6	4.9	43.7	421.7
1973	11.0	10.3	1.4	40.5	417.4
1974	8.7	7.9	--	37.7	298.7
1975	9.4	8.6	--	44.0	379.2
1976	9.3	8.4	--	45.4	383.0
1977	10.8	9.7	--	44.0	427.8
1978	10.0	9.2	.8	49.2	454.8
1979	8.1	7.5	.7	50.9	383.2
1980	8.3	7.3	--	49.7	361.1
1981	9.6	9.0	--	49.7	473.5
1982	9.5	9.0	.4	57.2	515.9
1983	10.4	9.7	1.1	52.3	508.9
1984	12.0	11.2	.5	53.4	599.2
1985	13.2	11.6	.7	51.0	591.4
1986	13.1	12.0	1.8	50.8	610.5
1987	11.0	10.0	2.9	52.7	529.5
1988	9.7	7.5	2.8	38.6	290.5

-- = Aspect of program not in effect.

1/ Acreage idled under programs only.

Appendix table 2--Prices and ending stocks for barley, 1950-88

Crop year	Ending stocks				Farm price received	Support rate	Target price <sup>3/</sup>	Direct payment <sup>2/</sup>
	CCC	FOR	Free	Total <sup>1/</sup>				
	----- Million bushels -----				----- Dollars per bushel -----			
1950	20.4	--	93.6	114	1.19	1.10	--	--
1951	9.0	--	81.0	90	1.26	1.11	--	--
1952	1.7	--	64.3	66	1.37	1.22	--	--
1953	14.1	--	73.9	88	1.17	1.24	--	--
1954	73.5	--	80.5	154	1.09	1.15	--	--
1955	60.7	--	86.3	147	.92	.95	--	--
1956	68.3	--	79.7	148	.99	1.02	--	--
1957	85.5	--	111.5	197	.89	.94	--	--
1958	99.3	--	128.7	229	.90	.93	--	--
1959	71.1	--	119.9	191	.86	.77	--	--
1960	51.0	--	127.0	178	.84	.77	--	--
1961	29.0	--	120.0	149	.98	.93	--	--
1962	38.0	--	133.0	171	.92	.93	--	--
1963	28.7	--	133.3	162	.90	.82	0.96	0.14
1964	19.5	--	113.0	133	.95	.84	.96	.12
1965	11.0	--	122.2	133	1.02	.80	.96	.16
1966	6.2	--	142.1	148	1.06	.80	1.00	.20
1967	5.7	--	155.3	161	1.01	.90	--	--
1968	8.3	--	216.7	225	.92	.90	--	--
1969	47.3	--	221.3	269	.88	.83	1.03	.20
1970	24.2	--	159.8	184	.97	.83	1.03	.20
1971	37.1	--	170.9	208	.99	.81	--	--
1972	2.2	--	189.3	192	1.21	.86	1.15	.32
1973	.7	--	145.6	146	2.14	.86	1.27	.26/.12
1974	0	--	92.0	92	2.81	.90	1.13	0
1975	0	--	128.4	128	2.42	.90	1.13	0
1976	0	--	126.4	126	2.25	1.22	1.28	0
1977	0	24	149.0	173	1.78	1.63	2.15	.50
1978	2.5	40	183.5	228	1.92	1.63	2.25	.35
1979	3.2	23	166.0	192	2.27	1.71	2.40	.11
1980	3.4	12	121.6	137	2.79	1.83	2.55	0
1981	3.3	23	122.0	148	2.48	1.95	2.60	.11
1982	6.0	98	113.0	217	2.18	2.08	2.60	.40
1983	11.9	95	82.0	189	2.47	2.16	2.60	.21
1984	14.6	97	135.0	247	2.29	2.08	2.60	.26
1985	57.4	45	223.0	325	1.98	2.08	2.60	.52
1986	75.5	122	138.0	336	1.59	1.56	2.60	.99
1987	50.0	109	162.0	321	1.81	1.49	2.60	.79
1988	30.0	42	125.0	197	2.85	1.44	2.51	0

-- = Aspect of program not in effect.

<sup>1/</sup> Total may not add due to rounding.

<sup>2/</sup> Price support 1963-71; set-aside 1972-73 (1973: .26 for 10% set-aside; .12 for 0% set-aside); deficiency 1974-88.

<sup>3/</sup> Support level 1963-73; target price 1974-88.

Source: U.S. Department of Agriculture, Agricultural Stabilization and Conservation Service.

Appendix table 3--Program costs for barley

Fiscal year	Direct price support	Diversion <sup>2/</sup>	Disaster	Exports	S/H/T/P/P <sup>3/</sup>	Reseal loan or producer storage <sup>4/</sup>	CCC loan operation		
	or deficiency <sup>1/</sup>						Total outlays	Total receipts	Net expenditures
Million dollars									
1962	--	11.0 <sup>5/</sup>	--	3.2	7.2	3.9	62.8	78.2	-15.4
1963	--	37.0	--	.2	6.5	2.6	79.7	23.2	56.5
1964	19.0	36.0	--	--	10.0	2.5	88.7	47.5	41.2
1965	13.0	40.1	--	--	6.9	2.3	75.0	32.9	42.1
1966	16.4	33.0	--	--	3.1	1.1	67.1	24.7	42.4
1967	21.0	15.7	--	--	1.6	.6	51.1	16.7	34.4
1968	--	--	--	--	.6	1.3	44.5	17.9	26.6
1969	--	9.0 <sup>5/</sup>	--	--	3.4	4.9	121.4	38.8	82.6
1970	24.0	13.0	--	--	12.8	9.7	105.7	26.5	79.2
1971	26.5	17.7	--	--	10.6	9.2	89.1	65.0	24.1
1972	--	--	--	--	12.0	6.6	97.3	76.0	21.3
1973	81.7	24.4	--	--	.5	7.9	150.3	75.7	74.6
1974	75.4	0	--	--	0	.8	90.8	45.1	45.7
1975	0	--	15.5	--	0	.1	21.8	9.2	12.6
1976	0	--	5.0	--	0	0	13.4	6.3	7.1
TQ <sup>6/</sup>	0	--	1.6	--	0	0	7.1	1.5	5.6
1977	0	--	12.1	--	0	0	94.1	16.2	77.8
1978	91.1	4.3 <sup>5/</sup>	27.5	--	.2	8.5	242.7	64.9	177.8
1979	79.2	4.7	8.5	--	.7	7.3	175.7	79.2	96.5
1980	17.0	0	9.1	--	1.1	-1.2	80.1	106.7	-26.6
1981	0	--	30.6	--	1.4	1.5	120.2	70.6	49.6
1982	48.1	--	10.9	--	1.4	10.9	196.3	67.7	128.6
1983	87.7	13.7	0	--	3.4	13.7	299.0	31.2	267.8
1984	15.0	15.5	0	--	6.4	13.7	163.3	74.3	89.2
1985	113.0	0	0	--	10.8	27.0	368.3	32.5	335.8
1986	<sup>7/</sup> 183.6	0	0	-- <sup>8/</sup>	28.3	29.6	620.4 <sup>9/</sup>	149.4 <sup>10/</sup>	471.0 <sup>11/</sup>
1987	<sup>7/</sup> 156.8	7.5	0	-- <sup>8/</sup>	37.6	42.6	839.4 <sup>9/</sup>	445.1 <sup>10/</sup>	394.3 <sup>11/</sup>

-- = Aspect of program not in effect.

<sup>1/</sup> Price support payments 1964-1974; deficiency payments began in 1975.

<sup>2/</sup> 1963 was the first year that barley was eligible for diversion payments.

<sup>3/</sup> Storage, handling, transportation, processing, and packaging costs.

<sup>4/</sup> Reseal loan payments ended in 1977; producer storage payments, began in 1978.

<sup>5/</sup> Aspect of program was not in effect (payments made must have been advance payments).

<sup>6/</sup> TQ is the transition quarter from July 1 to September 30, 1976, caused by the change in fiscal year starting dates.

<sup>7/</sup> Certificate program began in 1986.

<sup>8/</sup> The export enhancement program was first used for barley in 1986.

Annual EEP sales and average bonuses (commodity certificates awarded to exporters) through 1988 were:

1986: 2,885,680 metric tons with an average bonus of \$37.79 per ton

1987: 2,761,620 metric tons with an average bonus of \$41.57 per ton

1988: 801,557 metric tons with an average bonus of \$11.05 per ton

<sup>9/</sup> Includes all certificate outlays.

<sup>10/</sup> Includes all certificate loan repayments, certificate sales, and certificate receipts.

<sup>11/</sup> Not accounted for in net expenditures is the value of grain exchanged for certificates. The grain was valued at \$116.6 million in 1986 and \$117.2 million in 1987. Certificate outlays and receipts are included in total outlays and total receipts but no balance for no net expenditures.

Note: Any payment or receipt greater than -0.1 but less than 0.1 (mil \$) recorded as 0.

Source: U.S. Department of Agriculture, Agricultural Stabilization and Conservation Service, Budget Office and World Production and Trade, U.S. Department of Agriculture, Foreign Agricultural Service.

Appendix table 4--Barley: Value comparisons, 1950-88

Crop year	Yield per harvested acre	Loan rate	Average price	Production	GNP deflator 1/	Loan value per acre		Market value per acre		Gross value of production	
						Nominal	Real	Nominal	Real	Nominal	Real
	Bushels	Dollars/bu.	Mil. bushel	Index		Dollars				Million dollars	
1950	27.2	1.10	1.19	303.8	23.9	29.96	125.35	32.41	135.60	361.52	1,512.64
1951	27.3	1.11	1.26	257.2	25.1	30.29	120.69	34.39	137.00	324.07	1,291.12
1952	27.7	1.22	1.37	228.2	25.5	33.80	132.56	37.96	148.86	312.63	1,226.02
1953	28.4	1.24	1.17	246.7	25.9	35.24	136.07	33.25	128.39	288.64	1,114.44
1954	28.4	1.15	1.09	379.3	26.3	32.62	124.05	30.92	117.58	413.44	1,572.00
1955	27.8	.95	.92	403.1	27.2	26.37	96.94	25.54	93.88	370.85	1,363.43
1956	29.3	1.02	.99	376.7	28.1	29.90	106.39	29.02	103.27	372.93	1,327.16
1957	29.8	.94	.89	442.8	29.1	27.99	96.18	26.50	91.06	394.09	1,354.27
1958	32.3	.93	.90	477.4	29.7	30.02	101.07	29.05	97.81	429.66	1,446.67
1959	28.3	.77	.86	420.2	30.4	21.76	71.58	24.30	79.95	361.37	1,188.72
1960	31.0	.77	.84	429.0	30.9	23.84	77.15	26.01	84.17	360.36	1,166.21
1961	30.6	.93	.98	392.4	31.2	28.5	91.34	30.03	96.25	384.55	1,232.54
1962	35.0	.93	.92	427.7	31.9	32.57	102.09	32.22	100.99	393.48	1,233.49
1963	35.0	.82	.90	392.8	32.4	28.67	88.48	31.46	97.11	353.52	1,091.11
1964	37.6	.84	.95	386.1	32.9	31.56	95.92	35.69	108.48	366.80	1,114.88
1965	42.9	.80	1.02	393.1	33.8	34.31	101.51	43.74	129.42	400.96	1,186.28
1966	38.3	.80	1.06	392.1	35.0	30.60	87.44	40.55	115.85	415.63	1,187.50
1967	40.5	.90	1.01	373.7	35.9	36.44	101.50	40.89	113.91	377.44	1,051.37
1968	43.8	.90	.92	426.2	37.7	39.40	104.50	40.27	106.83	392.10	1,040.06
1969	44.7	.83	.88	427.1	39.8	37.09	93.20	39.33	98.81	375.85	944.34
1970	42.8	.83	.97	416.1	42.0	35.56	84.67	41.56	98.85	403.62	960.99
1971	45.8	.81	.99	462.4	44.4	37.07	83.49	45.31	102.04	457.78	1,031.03
1972	43.7	.86	1.21	421.7	46.5	37.60	80.86	52.90	113.77	510.26	1,097.33
1973	40.5	.86	2.14	417.4	49.5	34.87	70.44	86.76	175.28	893.24	1,804.57
1974	37.7	.90	2.81	298.7	54.0	33.90	62.78	105.84	196.01	839.35	1,554.35
1975	44.0	.90	2.42	379.2	59.3	39.61	66.79	106.49	179.59	917.66	1,547.69
1976	45.4	1.22	2.25	383.0	63.1	55.37	87.75	102.12	161.83	861.75	1,365.69
1977	44.0	1.63	1.78	427.8	67.3	71.68	106.51	78.28	116.31	761.48	1,131.48
1978	49.2	1.63	1.92	454.8	72.2	80.16	111.03	94.42	130.78	873.22	1,209.44
1979	50.9	1.71	2.27	383.2	78.6	87.06	110.76	115.57	147.03	869.86	1,106.70
1980	49.7	1.83	2.79	361.1	85.7	91.02	106.21	138.77	161.93	1,007.47	1,175.58
1981	52.4	1.95	2.48	473.5	94.0	102.16	108.68	129.93	138.22	1,174.28	1,249.23
1982	57.2	2.08	2.18	515.9	100.0	119.06	119.06	124.78	124.78	1,124.66	1,124.66
1983	52.3	2.16	2.47	508.9	103.9	112.96	108.72	129.17	124.32	1,256.98	1,209.80
1984	53.4	2.08	2.29	599.2	107.7	110.97	103.04	122.18	113.44	1,356.32	1,274.06
1985	51.0	2.08	1.98	591.4	110.9	106.08	95.64	100.98	91.06	1,170.97	1,055.90
1986	50.8	1.56	1.61	610.5	113.8	79.25	69.64	81.79	71.87	993.91	873.38
1987	52.7	1.49	1.81	529.5	117.4	78.52	66.89	85.37	72.72	982.29	836.70
1988	38.2	1.44	2.79	290.5	121.3	55.58	45.82	108.85	89.74	810.50	668.17

1/ 1982 = 100

Appendix table 5--World production, consumption, exports, and ending stocks for barley, 1960-89

Crop year <sup>1/</sup>	Production	Consumption	Exports <sup>2/</sup>	Ending stocks	Stocks-to-use ratio
	----- Million metric tons -----				Percent
1960	82.3	83.1	6.3	12.1	14.5
1961	78.1	79.7	7.2	11.3	14.2
1962	92.0	89.9	5.2	13.5	15.0
1963	94.4	92.2	7.7	15.1	16.4
1964	102.5	97.7	7.3	20.2	20.5
1965	97.8	102.4	8.7	15.0	14.6
1966	108.5	106.7	6.9	16.5	15.4
1967	110.6	108.3	7.0	18.7	17.2
1968	120.3	115.8	7.2	22.1	19.1
1969	123.4	112.0	9.2	22.8	20.3
1970	126.0	130.1	11.4	18.8	14.5
1971	136.8	133.7	14.5	21.4	16.0
1972	137.6	138.4	12.2	20.5	14.5
1973	153.9	153.7	12.5	20.9	13.6
1974	157.0	155.9	11.3	22.2	14.2
1975	141.1	143.1	13.3	20.8	14.5
1976	174.8	171.6	13.9	23.9	13.9
1977	163.9	164.8	15.3	22.3	13.5
1978	183.4	177.2	15.3	26.9	15.2
1979	160.8	168.4	15.0	21.0	12.5
1980	163.2	163.6	17.1	20.1	12.3
1981	155.2	157.8	20.5	17.6	11.2
1982	166.8	161.8	17.4	22.6	14.0
1983	164.7	169.1	21.6	17.0	10.1
1984	174.8	168.0	23.0	24.1	14.3
1985	178.0	172.7	21.7	29.7	17.2
1986	182.4	178.1	24.2	34.0	19.1
1987	180.7	182.5	21.0	32.2	17.6
1988	166.4	169.8	23.3	28.5	16.9
1989 <sup>3/</sup>	165.8	169.2	--	23.5	13.9

<sup>1/</sup> Based on aggregate of differing local marketing years. July/June before 1979/80, thereafter October/September.

<sup>2/</sup> Includes intra-EC trade.

<sup>3/</sup> Preliminary.

Source: World Grain Situation and Outlook. U.S. Department of Agriculture, Foreign Agricultural Service.



Appendix table 6--World production, trade, and ending stocks of barley, world and United States, 1960-89 <sup>1/</sup>

Crop year	Production			Exports			Ending stocks		
	World	United States	U.S. share	World	United States	U.S. share	World	United States	U.S. share
	Million bushels		Percent	Million bushels		Percent	Million bushels		Percent
1960	2,222	429	19.3	288	83	29.0	554	152	27.5
1961	3,589	392	10.9	333	82	24.6	521	123	23.7
1962	4,227	428	10.1	239	67	27.9	620	146	23.5
1963	4,337	393	9.1	354	72	20.2	693	132	19.0
1964	4,706	386	8.2	337	69	20.5	920	100	10.8
1965	4,491	393	8.8	400	76	18.9	689	133	19.3
1966	4,983	392	7.9	318	58	18.1	756	148	19.6
1967	5,081	374	7.4	323	34	10.6	857	161	18.8
1968	5,525	426	7.7	332	10	3.0	1,016	225	22.1
1969	5,670	427	7.5	422	8	2.0	1,045	269	25.7
1970	5,787	416	7.2	522	82	15.7	864	184	21.3
1971	6,283	462	7.4	665	38	5.8	981	208	21.2
1972	6,320	422	6.7	558	66	11.8	941	192	20.4
1973	7,067	417	5.9	576	90	15.7	960	146	15.2
1974	7,211	299	4.1	521	42	8.1	1,017	92	9.0
1975	6,483	379	5.8	613	24	3.9	953	128	13.4
1976	8,031	383	4.8	637	66	10.4	1,098	126	11.5
1977	7,527	428	5.7	701	57	8.1	1,023	173	16.9
1978	8,424	455	5.4	702	26	3.7	1,235	228	18.5
1979	7,384	383	5.2	690	55	8.0	966	192	19.9
1980	7,498	361	4.8	786	77	9.8	922	137	14.9
1981	7,128	474	6.6	944	100	10.6	808	148	18.3
1982	7,663	516	6.7	801	47	5.9	1,037	217	20.9
1983	7,565	509	6.7	992	91	9.2	781	189	24.4
1984	8,027	599	7.5	1,057	77	7.3	1,106	247	22.4
1985	8,175	591	7.2	845	22	2.6	1,364	325	23.8
1986	8,377	611	7.3	850	138	16.2	1,562	336	21.5
1987	8,299	530	6.4	730	126	17.3	1,479	321	21.7
1988	7,638	291	3.8	781	85	10.9	1,318	197	14.9
1989 <sup>2/</sup>	7,532	445	5.9	790	75	9.5	1,079	197	18.3

<sup>1/</sup> Bushels converted by dividing metric tons by 0.021772.<sup>2/</sup> Preliminary.Source: World Grain Situation and Outlook. U.S. Department of Agriculture, Foreign Agricultural Service.

Appendix table 7--World barley trade, stocks, and consumption, percent of U.S. exports and foreign consumption, 1960-89

Crop year	World trade to world consumption	World stocks to world consumption	U.S. exports to foreign consumption
	<u>Percent</u>		
1960	7.5	14.5	2.2
1961	9.1	14.2	2.2
1962	5.8	15.0	1.6
1963	8.4	16.4	1.7
1964	7.5	20.5	1.5
1965	8.5	14.6	1.6
1966	6.5	15.4	1.2
1967	6.5	17.2	.7
1968	6.2	19.1	.2
1969	8.2	20.3	.2
1970	8.7	14.5	1.4
1971	10.8	16.0	.6
1972	8.8	14.8	1.0
1973	8.2	13.6	1.3
1974	7.3	14.2	1.6
1975	9.3	14.5	.4
1976	8.1	13.9	.8
1977	9.3	13.5	.8
1978	8.6	15.2	.3
1979	8.9	12.5	.3
1980	10.5	12.3	1.0
1981	13.0	11.2	1.4
1982	10.8	14.0	.6
1983	12.8	10.0	1.2
1984	13.7	14.3	1.0
1985	10.7	17.2	.5
1986	10.4	19.1	1.8
1987	8.7	17.6	1.7
1988	10.0	16.9	.8
1989 <sup>1/</sup>	10.2	13.9	.8

<sup>1/</sup> Preliminary.

Source: U.S. Department of Agriculture, Foreign Agricultural Service.

Appendix table 8--Barley production and exports, major foreign exporters and total foreign, 1960-89

Crop year	Canada		Australia		EC-12		Total foreign	
	Pro-duction	Exports	Pro-duction	Exports	Pro-duction	Exports <sup>1/</sup>	Pro-duction	Exports
<u>Million bushels <sup>2/</sup></u>								
1960	193	42	71	43	885	67	3,352	204
1961	113	38	43	19	901	116	3,197	251
1962	166	14	41	18	1,066	78	3,800	172
1963	221	42	45	13	1,155	127	3,944	282
1964	168	33	51	17	1,197	134	4,320	268
1965	218	34	44	17	1,249	147	4,098	324
1966	301	47	64	12	1,315	163	4,591	260
1967	253	38	38	11	1,549	183	4,707	288
1968	326	21	76	25	1,537	199	5,099	322
1969	371	69	78	31	1,606	227	5,243	413
1970	408	177	108	57	1,429	136	5,371	440
1971	602	224	141	81	1,688	250	5,821	626
1972	518	157	79	31	1,788	244	5,898	492
1973	470	119	110	54	1,829	262	6,649	486
1974	404	130	116	76	1,897	219	6,912	479
1975	437	191	146	102	1,845	263	6,104	589
1976	483	165	131	89	1,679	176	7,648	571
1977	542	154	109	51	2,076	366	7,099	644
1978	477	163	184	97	2,230	330	7,969	676
1979	389	176	170	98	2,120	314	7,001	635
1980	517	149	123	60	2,303	433	7,137	709
1981	630	263	158	84	2,027	405	6,655	844
1982	641	259	89	22	2,143	379	7,147	754
1983	469	242	225	174	1,968	340	7,056	901
1984	472	120	255	213	2,503	551	7,428	980
1985	569	165	224	168	2,365	335	7,582	808
1986	672	300	166	102	2,149	285	7,767	716
1987	641	203	160	76	2,149	317	7,767	597
1988	465	115	157	68	2,324	436	7,349	721
1989 <sup>3/</sup>	551	184	169	76	2,090	436	7,137	730

<sup>1/</sup> Excludes intra-EC trade.

<sup>2/</sup> Computed by dividing metric tons by 0.021772.

<sup>3/</sup> Preliminary.

Source: U.S. Department of Agriculture, Foreign Agricultural Service.

Appendix table 9--Coefficients of variation for barley, United States, selected periods

Period	Planted acres	Yield	Production	Exports	Price received	Value of production
			<u>Coefficient</u>			
1950-88	0.2150	0.2276	0.2120	0.5012	0.4402	0.5105
1954-63	.0646	.0809	.0721	.2712	.0748	.0605
1964-73	.0464	.0615	.0597	.5157	.3149	.3237
1974-83	.0902	.1098	.1638	.4292	.1389	.1704
1954-58	.0495	.0526	.0932	.3077	.0779	.0571
1959-63	.0742	.0823	.0401	.2303	.0544	.0418
1964-68	.0591	.0601	.0438	.4751	.0508	.0438
1969-73	.0283	.0415	.0407	.5103	.3729	.3515
1974-78	.0738	.0841	.1366	.3858	.1639	.0567
1979-83	.1010	.0497	.1503	.2911	.0965	.1290
1984-88	.1253	.1234	.2563	.5271	.2462	.2168

1/ Coefficient of variation is a measure of variability which equals the standard deviation divided by the mean.