



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.*

**Fifth Joint Conference on
Agriculture, Food, and the Environment**

Proceedings of a Conference Sponsored by
University of Minnesota
Center for International Food and Agricultural Policy

Università degli Studi di Padova
Dipartimento Territorio e Sistemi Agro-forestali

Agricultural Development Agency - Veneto Region

University of Perugia

University of Bologna - CNR

**SESSION I: RECENT TRENDS IN AGRICULTURAL POLICY OF THE
USA AND EU**

**PAPER 1: AGRICULTURAL POLICY REFORM IN THE UNITED
STATES: NOTES ON THE 1995-96 FARM BILL**

Willis Anthony and C. Ford Runge

Center for International Food and Agricultural Policy

University of Minnesota
1994 Buford Avenue, 332 C.O.B.
St. Paul, Minnesota 55108-6040 U.S.A.
Phone: (612) 625-8713
FAX: (612) 625-6245

Working Papers are published without a formal review within or the endorsement of the Center for International Food and Agricultural Policy or Department of Applied Economics.

The University of Minnesota is committed to the policy that all persons shall have equal access to its programs, facilities, and employment without regard to race, color, creed, religion, national origin, sex, age, marital status, disability, public assistance status, veteran status, or sexual orientation.

Information on other titles in this series may be obtained from Waite Library, University of Minnesota, Department of Applied Economics, 1994 Buford Avenue, 232 COB, St. Paul, MN 55108-6040, U.S.A.

Copyright 1996 by authors. All rights reserved. Readers may make verbatim copies of this document for non-commercial purposes by any means, provided that this copyright notice appears on all such copies.

FOREWORD

This volume contains the papers presented at the Fifth Joint Minnesota/Padova Conference on Food, Agriculture, and the Environment held at Abano Terme, near Padova in Italy, June 17-18, 1996. This conference was organized by the Center for International Food and Agricultural Policy at the University of Minnesota and the Dipartimento Territorio e Sistemi Agro-forestali at the Università degli Studi di Padova (University of Padova) under their international collaborative agreement, along with the Agricultural Development Agency - Veneto Region, the University of Perugia, and the University of Bologna - CNR. The first Joint Conference was held in Motta di Livenza, Italy in June 1989, the second in Lake Itasca, Minnesota in September 1990, and the third in Motta di Livenza in June 1992. The Fourth Joint Conference was held in September 1994 at the Spring Hill Center in Minnesota.

This conference focused on topics of mutual interest in the areas of (1) agricultural and resource policy, (2) land markets, (3) the food and agricultural industry, (4) agriculture and the environment, and (5) agricultural production and environmental quality and sustainability. Although the conference was not intended to provide a comprehensive coverage of all the issues, this volume hopefully represents a useful contribution to current understanding and debate in the areas of food, agriculture, and the environment.

Judy Berdahl, secretary for the Center for International Food and Agricultural Policy at the University of Minnesota, assisted with these Proceedings.

Benjamin Senauer
University of Minnesota

Danilo Agostini
University of Padova

**Fifth Joint Conference on
Agriculture, Food, and the Environment**

Proceedings of a Conference Sponsored by

University of Minnesota
Center for International Food and Agricultural Policy

Università degli Studi di Padova
Dipartimento Territorio e Sistemi Agro-forestali

Agricultural Development Agency - Veneto Region

University of Perugia

University of Bologna - CNR

Abano Terme - Padova, Italy
June 17-18, 1996

Working Papers are published without a formal review within or the endorsement of the Center for International Food and Agricultural Policy or Department of Applied Economics.

The University of Minnesota is committed to the policy that all persons shall have equal access to its programs, facilities, and employment without regard to race, color, creed, religion, national origin, sex, age, marital status, disability, public assistance status, veteran status, or sexual orientation.

Information on other titles in this series may be obtained from Waite Library, University of Minnesota, Department of Applied Economics, 1994 Buford Avenue, 232 COB, St. Paul, MN 55108-6040, U.S.A.

FOREWORD

This volume contains the papers presented at the Fifth Joint Minnesota/Padova Conference on Food, Agriculture, and the Environment held at Abano Terme, near Padova in Italy, June 17-18, 1996. This conference was organized by the Center for International Food and Agricultural Policy at the University of Minnesota and the Dipartimento Territorio e Sistemi Agro-forestali at the Università degli Studi di Padova (University of Padova) under their international collaborative agreement, along with the Agricultural Development Agency - Veneto Region, the University of Perugia, and the University of Bologna - CNR. The first Joint Conference was held in Motta di Livenza, Italy in June 1989, the second in Lake Itasca, Minnesota in September 1990, and the third in Motta di Livenza in June 1992. The Fourth Joint Conference was held in September 1994 at the Spring Hill Center in Minnesota.

This conference focused on topics of mutual interest in the areas of (1) agricultural and resource policy, (2) land markets, (3) the food and agricultural industry, (4) agriculture and the environment, and (5) agricultural production and environmental quality and sustainability. Although the conference was not intended to provide a comprehensive coverage of all the issues, this volume hopefully represents a useful contribution to current understanding and debate in the areas of food, agriculture, and the environment.

Judy Berdahl, secretary for the Center for International Food and Agricultural Policy at the University of Minnesota, assisted with these Proceedings.

Benjamin Senauer
University of Minnesota

Danilo Agostini
University of Padova

TABLE OF CONTENTS

Fifth Joint Conference on Agriculture, Food, and the Environment

Session I

Recent Trends in Agricultural Policy of the USA and EU

Session II

Agricultural Policy and Sustainable Development - I

Session III

Agricultural Systems with Low Environmental Impact

Session IV

Food Marketing and the Environment

Session V

Computer Science and Environmental Management

Session VI

Agricultural Policy and Sustainable Development - II

Session VII

Sustainable Development of Agriculture in Metropolitan Areas

Session VIII

Land Use and Rural Development

Session I

Recent Trends in Agricultural Policy of the USA and EU

- Agricultural Policy Reform in the United States: Notes on the 1995-96 Farm Bill
..... Willis Anthony and C. Ford Runge
- U.S. Government Intervention in Dairy Markets: Has the 1996 Agricultural Act Reformed the
Government's Role? Jerome W. Hammond

Session II

Agricultural Policy and Sustainable Development - I

- An Operational Model of Sustainable Development: Some Thoughts Issues on Getting the
Incentives for Public Policy Right
..... G. Edward Schuh and Sandra Archibald
- Endogenous Rural Development and Sustainability: A European (Non Orthodox)
Perspective Donato Romano
- Public Choice Evaluation, Environment, and Sen's Theory
..... I. Bernetti and L. Casini
- Some Spatial Aspects of an Externality: The Case of Livestock Production Facilities
..... Steven J. Taff
- Fog: A Water Resource for the Development of Arid Regions
..... Roberto Semenzato

Session III

Agricultural Systems with Low Environmental Impact

- Analysis of Results from the Implementation of Regulation (EEC) 2078/92
..... Alessandro Ragazzoni and Maurizio Canavari
- Farming Objectives and Environmental Issues in the Venice Lagoon Water Basin
..... Manuela Bombana and Paolo Rosato
- Risks and Returns in the Transition from High to Low Chemical Cropping Systems
..... Kent D. Olson, David R. Huggins, Paul M. Porter,
Catherine A. Perillo, and R. Kent Crookston
- The Use of Bulletin Board Systems (B.B.S.) in Technology Transfer Processes
..... Tommaso De Marco and Roberto Bustaffa

Session IV

Food Marketing and the Environment

- Food Marketing in an Electronic Age: Implications for Agricultural Producers
..... Jean Kinsey and Ben Senauer
- Brand Name and Added Value in Horticultural Products: Analysis of Consumer Perception
..... Gian Luca Bagnara
- A Hedonic Price Study of Pesticides in Fruits and Vegetables
..... Frances Antonovitz and Donald J. Liu

Session V

Computer Science and Environmental Management

- Computer Science for Agro-Environmental Farm Management
..... Adriano Ciani
- PLANETOR, An Environmental and Economic Planning Tool: Its Use and Adaptation for Italy
..... Carlo Giupponi and Kevin Klair
- Manure Application Planner (MAP): Conversion and Use in Italy
..... Antonio Boggia and Wynn Richardson

Session VI

Agricultural Policy and Sustainable Development - II

- Market Approaches to Water Allocation: What Have We Learned?
..... K. William Easter
- Asymmetric Information and the Pricing of Natural Resources: The Case of Unmetered Water
..... Rodney B. W. Smith and Yacov Tsur
- Environmental Accounting and Agri-Environmental Policies: An Application to the Regulation
(EEC) 2078/92 in Emilia-Romagna (Italy)
..... P. Caggiati, D. Viaggi, and G. Zanni
- European Union Environmental Policy
..... Wilma Viscardini Donà

Session VII

Sustainable Development of Agriculture in Metropolitan Areas

- Sustainable Development in Metropolitan Areas: An Introduction
..... Maurizio Grillenzoni and Maurizio Canavari
- Development and Competition in Rural and Metropolitan Areas in the U.S.
..... Wilbur Maki
- Periurban Agriculture in Metropolitan Areas: The Bologna Case Study
..... Guido Maria Bazzani and Margherita Bradascio
- Agricultural Land Values and Urban Growth
..... Tiziano Tempesta and Mara Thiene
- A Systematic Representation of Metropolitan Areas: The Case of the Central Apulia System
..... Sebastiano Carbonara and Giovanna De Fano

Session VIII

Land Use and Rural Development

- Some Major Trends Affecting the Structure of Agriculture in Minnesota and the United States
..... Philip M. Raup
- An Arbitrage-Free Approach to Quasi-Option Value
..... Jay S. Coggins
- Environmental Accounting of Forest Resources: Two Italian Case Studies
..... Giorgio Franceschetti and Davide Pettenella

Agricultural Policy Reform in the United States:

Notes on the 1995-96 Farm Bill

Willis Anthony

C. Ford Runge

June 15, 1996

Agricultural Policy Reform in the United States:

Notes on the 1995-96 Farm Bill

The new Farm Bill, the Federal Agricultural Improvement Act (FAIR) of 1996, contains numerous new provisions which mark important breaks with the past. In this brief summary, we will focus on three areas of potential interest to an international audience, first briefly detailing the changes, then offering a view from one author's perspective as a practicing farmer in South-Central Minnesota. The three areas of greatest interest in the new bill are:

- the freedom to farm or flexibility provisions, converting existing individual crop bases to a consolidated acreage base;
- the payment of direct decoupled payments to individual producers on the basis of a declining seven-year contract;
- the removal of "entitlement" to farm payments beyond this seven year commitment, as well as the end of "countercyclical" deficiency-type payments.

• "Freedom to Farm"

The most striking change in the new FAIR legislation is the conversion of individual crop bases to a consolidated acreage base composed of previous wheat, corn, grain sorghum, barley, oats, cotton or rice acreage bases. This acreage must have either participated in the annual acreage reduction program for at least one out of the last five crops, or be considered planted through reporting requirements. It also includes expired or terminated Conservation Reserve Program (CRP) land. Farmers are free to plant any commodity or crop on contract acres with

certain exceptions for fruits and vegetables. This change in policy closely parallels previous calls for the elimination of existing crop acreage bases (e.g., Cochrane and Runge, 1992), and will assist farmers in responding to the extremely short supply conditions now prevailing. As recently reported by Schnittker (1996):

- Grains and oilseeds provide about 75 percent of the world's food, directly or through meat and milk. Consumption has exceeded production the last 3 years, and in 7 of the last 10 years. Reserves in the U.S. and worldwide will be negligible when 1996 harvests begin. Food price stability in 1997, and adequate food supplies in many poor countries depend uniquely on 1996-7 harvests.
- The U.S. wheat harvest is 20 percent below potential. Prices of wheat and flour for bakery and cereal products in late 1996 and 1997 will be 25 percent above the past year, and over 50 percent above 1994 levels. World wheat prospects remain good, however. Canada will plant 15 percent more acres; Argentina and Australia will add acreage. U.S. wheat losses can be replaced.
- Corn and soybean crops are threatened by concern over late planting and by weather forecasts for a hot, dry summer in the Midwest and Northern Plains, including Canada. Apart from that, we have every reason to expect large grain harvests, especially for corn. No other major countries face imminent crop losses analogous to U.S. wheat. No other crop sector in the U.S. is now facing weather-related losses.
- The drought in the Plains is also demoralizing cattlemen. Slaughter off farms and ranches is up 15 percent as Plains pastures fail. The liquidation will continue, keeping

meat prices stable until late this year. The President's program to make conservation land available for grazing and to buy beef for the schools will slow it down, but herd reductions are driven by drought, financial losses, and discouragement. They will go on. If drought continues, the liquidation will be extreme.

- Hog and poultry production are being reduced by high feed prices. By late this year or early next year, meat production, especially beef and pork, will fall 2-3 percent below year earlier levels, even with good crops. Meat prices will rise, but may be held in check by increased poultry, made profitable by high red meat prices.

Yet as the flexibility of the new policy takes hold, it is unlikely to dramatically transform or diversify cropping patterns, at least in the short run. Hence, despite some enthusiasm for decoupling among environmental groups (e.g., Faeth, et al., 1995), some caution is warranted. Previous "flexible acres" provisions allowed under the 1990 Farm Bill (up to 15 percent of total crop acres) often were continued with the same crop. This was especially true for cotton (69 percent stayed in cotton), corn (55 percent stayed in corn) and wheat (50 percent stayed in wheat). The exceptions (over the period 1992-94) were crops with generally lower subsidies, such as sorghum (only 32 percent stayed in sorghum), rice (30 percent stayed in rice), barley (24 percent stayed in barley) and oats (17 percent stayed in oats). These aggregate statistics mask important change that may occur regionally.

Analysis of these data by Zulauf and Tweeten (1996) suggests a complex set of environmental impacts. Under the more "flexible" farm policy of 1996, field crops will concentrate in the Mississippi and Ohio River Basins, and cotton in the South, while contracting

in the southern plains, mountain and Pacific areas. Since the latter areas are generally more subject to erosion, this may be positive for water quality. But recall that according to USGS, the majority of water pollution *already* comes from the Mississippi and Ohio Basins, suggesting the possibility of *worse* problems. On the other hand, some cropland in relatively low productivity regions will shift to pasture, likely to be positive if these acres are especially vulnerable to erosion or leaching of chemicals into groundwater. In Minnesota, however, low productivity cropping areas did not necessarily correlate with those especially vulnerable to environmental damages, suggesting that more careful targeting is needed. If the production of feed grain production concentrates in the Midwest, it may encourage more mixed livestock/crop farms, a result generally supported by environmentalists. However, the concentration of feed grains, especially corn, in the Midwest may aggravate monocultural corn cropping, together with pesticide use.

•Decoupled Payments

Payments to farmers will be based on contracted acres, to be paid out over a seven year cycle, with payments declining slowly and, in principle, ending at the end of seven years. A large measure of farmer support for the FAIR of 1996 arose from the fact that these payments will be very generous at the outset. Moreover, they will be paid independently of existing market conditions. In the next 2-3 years, this means that high market prices will be supplemented with high contract payments, resulting in large potential payments (and possible embarrassment) for many large contracting producers.

The specific provisions of the 1996 FAIR are that total spending is capped each year, according to the following schedule:

Fiscal Year	Spending (\$ billions)
1996	5.57
1997	5.38
1998	5.80
1999	5.60
2000	5.13
2001	4.13
2002	4.00

This spending is to be apportioned according to the "old" base acres crops, and shared accordingly, by percentage:

Crop	Percentage Share of Total Budget
Wheat	26.26
Corn	46.22
Sorghum	5.11
Barley	2.16
Oats	0.15
Cotton	11.63
Rice	8.47

These shares will then be adjusted in each fiscal year, based on a variety of specific issues such as previously advanced or remaining deficiency payments for 1994 and 1995, refunds from previous years' contracts, and an additional \$8.5 million for rice. Individual payment rates will be "total spending for each commodity for the fiscal year divided by the sum of payment quantities for all contracts for the fiscal year." These may be shared by owners and producers with renters and the

like. A single person may not receive more than \$40,000 (with some exceptions) but three-person "entities" are each eligible for up to \$80,000 as part of a single farming operation.

In marked contrast to the limits of \$20,000 per *farm* advocated by Cochrane and Runge (1992), these payments may thus rise to as much as \$80,000, and more in some cases. Moreover, they do not include CRP and some other payments. It is this that may cause embarrassment in a period of strong market prices likely over the next three years.

•Ending Entitlements

In principle, FAIR thus sets specific budget caps on farm budgets, halting the open ended entitlement spending of the previous system, in which payments rose as market prices fell.

However, two questions immediately arise. First, will such spending actually end after seven years, or will political forces rally to promote a continuation, especially if market prices weaken? Second, and oppositely, what will the absence of countercyclical payments do to erode public support for continued farm subsidy payments?

Answers to these questions are difficult at this point, but consider one farmer's perspectives.

•Other Program Items

A number of other agricultural program provisions were included in Congressional discussion of the 1995-96 Farm Bill. Some provisions were changed. Others were left untouched after considerable debate. The following items are noteworthy:

1. Commodity Credit Corporation loans are capped at 1995 levels.
2. Sugar and peanut programs were not greatly changed.
3. The Conservation Reserve Program acreage will be reduced from 36 million to 25-30 million by 2002.
4. Dairy support will decline over the next four years, and will terminate in 2001; and there will be an export emphasis through a U.S.D.A. trading company to be established.
5. The Export Enhancement Program will be reduced moderately.
6. There will be no supplemental disaster program.
7. The Farmer Owned Reserve Program will be terminated.

Administrative details of FAIR are said to be largely in place. Farmers who wish to participate in the program will be required to sign seven-year contracts. The contracting period is from May 20 to July 12, 1996. To be eligible, farms must have a history of past involvement in the government program. Producers must comply with all conservation compliance requirements for the farm, wetland protection requirements, and planting flexibility requirements. Land must be used for agricultural activities, but not for nonagricultural commercial or industrial uses.

Landlords can contract and receive payments only if they share in the production cost and risk.

•Program Participation Decisions

A farmer who enters into a program contract will receive payments based on a per-unit-of-production rate. Estimated payment rates are as follows:

Contract Crop	Unit	Fiscal Year						
		1996	1997	1998	1999	2000	2001	2002
Corn	\$/bu	0.24	0.52	0.41	0.39	0.36	0.29	0.28
Sorghum	\$/bu	0.31	0.53	0.46	0.44	0.40	0.32	0.31
Barley	\$/bu	0.23	0.28	0.29	0.28	0.25	0.20	0.19
Oats	\$/bu	0.02	0.04	0.04	0.04	0.03	0.03	0.03
Wheat	\$/bu	0.62	0.64	0.68	0.65	0.59	0.47	0.46
Cotton	/lb	9.34	7.53	8.06	7.74	7.09	5.71	5.50
Rice	\$/cwt	2.75	2.76	2.96	2.87	2.63	2.14	2.08

These estimates are based on anticipated levels of producer participation allocated from total funding shown in the tables on page 5. But even as this is written, Congress is considering reducing agricultural outlays to provide funds for other programs being discussed.

The payment calculation for an individual farm will be:

$$\text{Contract Acres} \times .85 \times \text{Program Yield} \times \text{Rate} = \text{Annual Payment}$$

Contract acres are the historical FSA base. Contract yield is the historical FSA yield. It is difficult to see why any producer would choose not to sign a program contract. Hence, participation level is expected to be near 100 percent.

Farmers will be making program contract decisions in the context of an unusual economic environment. Market forces alluded to earlier are having a dramatic impact on farm planning. The impact is illustrated by comparing 1995 and 1996 planning budgets for corn and soybeans in

Minnesota.

As farmers entered fields for planting the 1995 crop, corn had a projected net loss of \$1.27/acre (Table 1). This net was based on a projected yield of 140 bu/acre. Grain buyers were offering a harvest contract price of \$2.15/bu. The government feed-grain program required a 7.5 percent acreage set-aside, and included a deficiency payment of \$.40/bu on program base yield paid on 77.5 percent of base acres. Most farmers with program bases participated in the program because losses looked even greater without participation. Soybean net returns per acre were projected at a negative \$19.00 (Table 2). New-crop contract price was \$5.50/bu. With no program base and yield calculations, there were no program participation decisions.

As farmers entered their fields to begin planting the 1996 crop, the outlook was dramatically different. Corn had a projected net margin of \$65.88/acre (Table 3). The FAIR program requires no acreage set-aside, so production was calculated on the full acre of crop. Harvest contract price was offered at \$2.90/bu. FAIR payments on a "typical" farm total \$24.48/acre. Overpayment on the 1995 program base is to be deducted from 1996 payments. Input costs were higher for the 1996 crop. Fertilizer, fuel, seed, and parts were nearly 10 percent higher. Higher commodity prices have enhanced both rental rates and land values.

Soybean net returns were also much above the 1995 outlook (Table 4). Although soybean prices had not risen proportionate to corn, the planning budget yet projected a \$28.50 net return.

Planning for the 1996 crop was somewhat more uncertain than usual due to delays in development of the new farm program. However, commodity price levels and volatility eclipsed program impacts on the planning horizon. Price developments have also muted farmer reactions to the FAIR program. At this point, an accurate summary of farmer attitude is that government

program change was necessary. The way in which FAIR will be digested will depend on market price developments in the next few years. Participation by farmers will likely be very high. If grain prices move down significantly, there will be pressure from the farm community for future program changes. If prices stay high, pressure for change will come from concerns about the level of federal budget outlays to a prosperous agricultural community.

Table 1

Planning 1995		Corn Base Acre
Production	$140 \times .925 =$	129.50 bu.
Revenue	$(\$2.15^* \times 129.50) =$	\$278.43
Def. Payment	$(.40^{**} \times 120 \times .775) =$	37.20
Projected Revenue		315.63
Inputs		
(seed, fertilizer, fuel, etc.)	\$146.15	
Set-Aside Costs	.75	
Land	110.00	
Machinery and Labor	60.00	
		(316.90)
		(1.27)

*New crop prices bid, second week of April 1995.

** .20 to be repaid 12/96.

Table 2

Planning 1995	Soybean Base Acre	
Production	42 x 1 =	42.0 bu.
Revenue	(\$5.50* x 42) =	\$231.00
Inputs (seed, fuel, etc.)	\$80.00	
Land	110.00	
Machinery and Labor	60.00	
	<hr/>	250.00
		<hr/> (19.00)

*New crop prices bid, second week of April 1995.

Table 3

Planning 1996		Corn Base Acre
Production	140 x 1.0 =	140 bu.
Revenue	(\$2.90* x 140) =	\$406.00
FAIR Payment	(.85 x 120 x \$.24)	24.48
		<hr/>
		430.48
1995 program repayment		(18.60)
		<hr/>
		411.88
Inputs		
(seed, fertilizer, fuel, etc.)	\$160.00	
Land	120.00	
Machinery and Labor	66.00	
	<hr/>	
		346.00
		<hr/>
		65.88

*New crop prices bid, second week of April 1996.

Table 4

Planning 1996	Soybean Base Acre	
Production	42 x 1.0 =	42.0 bu.
Revenue	(\$7.25* x 42) =	\$304.00
Inputs (seed, fuel, etc.)	\$ 90.00	
Land	120.00	
Machinery and Labor	66.00	
	<hr/>	276.00
		<hr/> 28.50

*New crop prices bid, second week of April 1996.

References

Cochrane, Willard W. and C. Ford Runge. Reforming Farm Policy: Toward a National Agenda
Ames: Iowa State University Press, 1992.

Faeth, Paul. *Growing Green: Enhancing the Economic and Environmental Performance of U.S. agriculture*. Washington, DC: World Resources Institute. 1995.

Schnittker, J. S. "Food and Agriculture Fundamentals." Memorandum of May 2, 1996.

Zulauf, Carl and Luther Tweeten. "The Post-commodity-Program World: Production Adjustments of Major U.S. Field Crops." *Choices* (First Quarter 1996): 8-10.