

V(A). Planned Program (Summary)

Program # 11

1. Name of the Planned Program

Agricultural, Environmental, and Development Economics (OARDC Led)

Reporting on this Program

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
601	Economics of Agricultural Production and Farm Management	0%		10%	
602	Business Management, Finance, and Taxation	0%		10%	
603	Market Economics	0%		10%	
604	Marketing and Distribution Practices	0%		5%	
605	Natural Resource and Environmental Economics	0%		10%	
606	International Trade and Development	0%		10%	
607	Consumer Economics	0%		10%	
608	Community Resource Planning and Development	0%		5%	
609	Economic Theory and Methods	0%		10%	
610	Domestic Policy Analysis	0%		10%	
611	Foreign Policy and Programs	0%		10%	
	Total	0%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2012	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	0.0	5.5	0.0
Actual Paid Professional	0.0	0.0	4.4	0.0
Actual Volunteer	0.0	0.0	0.0	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
0	0	615935	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
0	0	531672	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Food, Agricultural and Economics Development Planned Program includes both basic and applied research. Both laboratories and multiple field sites are available throughout state to permit data gathering and to continue long - term experiments. Extensive in-state research takes place as do national and international studies. Close working relationships with multiple industries and organizations provide real - world settings and data, greatly enhancing the program's capacity and outputs/impacts. All functional laboratories and sites are improved over time as program need and resource availability warrants. OARDC faculty and staff engage in appropriate levels of outreach, engagement, and consultation, with both internal stakeholders such as fellow extension personnel, and with external stakeholders.

2. Brief description of the target audience

Targeted audiences include, but are not limited to: specific individuals or groups who have expressed a need for economic findings related to some aspect of human capital that is to be derived through new research, extracted from on-going research, or is derived from scientific literature; fellow academic units that depend on scientists in this program for support information and for the approaches/measures they generate; fellow agencies or support organizations who will not only use the economic information but will also extend that information; populations who have not requested the information but will likely benefit from that information; other scientists and scientific groups; political entities; extension personnel; students from junior high school to post doctorate studies; news organizations; and business and industrial groups.

3. How was eXtension used?

eXtension was not used in this program

V(E). Planned Program (Outputs)

1. Standard output measures

2012	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	0	0	0	0

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year: 2012

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2012	Extension	Research	Total
Actual	0	34	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Report number of graduate students completed
Not reporting on this Output for this Annual Report

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	New knowledge of production variations in markets that help producers, processors, and distributors have requisite information for enhanced decision making leading to decreased costs of inputs and an increase in profits/outputs.
2	Advanced knowledge of how to market and manage quality attributes of commodities leading to demonstrated value added/ profits for producers, processors, and distributors, and reported satisfaction/needs attainment among consumers.
3	Business management knowledge in targeted areas, e.g. risk management, weather insurance, impacts of land use shifts, grant management that are necessary for and result in increased profitability for stakeholders.
4	Research findings on novel programs such as pollution trading, carbon trading, conservation programs, cooperatives, etc. that results in enhanced profits, new sources of income, and/or prevention of loss of profits or loss of other resources, e.g. soil.
5	Relational contracting theory and practice information that will contribute to reduction of risks, improving profits, and adding stability to the system that meet stated stakeholder needs.
6	Stakeholders will have the necessary models that will improve on the forecasting of risk, demand, and prices in various commodity sectors leading to enhanced decision making, increased profits, and reductions in uncertainty.
7	Resultant management models that explain potential impacts of new/emerging trends e.g. trade agreements, bio-terrorism threats, and renewable fuels requirements, on specific agriculture sectors to the extent that negative impacts can be mitigated in a timely manner.
8	Market economies and efficiencies studies relating to factors such as pricing, finance, supply and demand, etc. ensuring that stakeholders are informed and their identified needs, e.g. lower operating costs, become more attainable.
9	Research finding on valuing environmental resources, e.g. wetlands, river restoration, and how it applies to stakeholder needs for demonstrated gains in profits, resources sustained, and/or actions mitigated.
10	Biocomplexity analysis to understand human-nature interactions at the landscape level that informs human enterprises, leading to demonstrated profitability, environmental protection, and/or improvements in quality of stakeholders' lives.
11	Increase profitability, reduce environmental impact, and/or improve quality of stakeholders' lives through bio-resource utilization efficiency and effectiveness research such as biomass to energy, nitrogen utilization, biocides, etc.
12	Market and non-market valuation of environmental resources, e.g. steelhead trout fishing, open space, that have often lacked economic justification that meets client needs, and informs individual, group, and government decision making.
13	Advance knowledge of vertical markets in developing counties that when applied leads to documented increased trade with the US.
14	Exchange rate, trade policy, and similar uncertainties research findings that lead to documented mitigation for stakeholders of certain negative effects of international trade.
15	New policy analysis research that informs policy development and fosters demonstrated gains for stakeholders in areas such as conservation programs, farmland protection, Farm Credit System resources, etc.

Outcome #1

1. Outcome Measures

New knowledge of production variations in markets that help producers, processors, and distributors have requisite information for enhanced decision making leading to decreased costs of inputs and an increase in profits/outputs.

Not Reporting on this Outcome Measure

Outcome #2

1. Outcome Measures

Advanced knowledge of how to market and manage quality attributes of commodities leading to demonstrated value added/ profits for producers, processors, and distributors, and reported satisfaction/needs attainment among consumers.

Not Reporting on this Outcome Measure

Outcome #3

1. Outcome Measures

Business management knowledge in targeted areas, e.g. risk management, weather insurance, impacts of land use shifts, grant management that are necessary for and result in increased profitability for stakeholders.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

An issue of disagreement during the 2012 Farm Bill debate was whether the farm safety net should focus on revenue or price. It is common to think of revenue per acre as price times yield, however, this perspective is not appropriate if the objective is to manage risk. Risk

management approaches seek to manage the negative impacts of changes. The risk of revenue loss depends not only on the risk of a decline in price or yield, but also on the correlation between the changes in price and the changes in yield.

What has been done

Until the ACRE program was enacted in the 2008 Farm Bill, farm programs focused on price. An OARDC economist compared price and revenue programs and the parameters specified in the Senate Farm Bill to focus on the key role played by the correlation between changes in price and changes in yield.

Results

Converting from a price based farm safety net to a revenue based farm safety net will likely increase the effective risk management provided by the farm safety net and will result in more support being provided to Southern crops. These implications reflect that revenue risk is not just about price and yield, but also about the correlation between price and yield.

4. Associated Knowledge Areas

KA Code	Knowledge Area
601	Economics of Agricultural Production and Farm Management
602	Business Management, Finance, and Taxation
603	Market Economics
609	Economic Theory and Methods
610	Domestic Policy Analysis

Outcome #4

1. Outcome Measures

Research findings on novel programs such as pollution trading, carbon trading, conservation programs, cooperatives, etc. that results in enhanced profits, new sources of income, and/or prevention of loss of profits or loss of other resources, e.g. soil.

Not Reporting on this Outcome Measure

Outcome #5

1. Outcome Measures

Relational contracting theory and practice information that will contribute to reduction of risks, improving profits, and adding stability to the system that meet stated stakeholder needs.

Not Reporting on this Outcome Measure

Outcome #6

1. Outcome Measures

Stakeholders will have the necessary models that will improve on the forecasting of risk, demand, and prices in various commodity sectors leading to enhanced decision making, increased profits, and reductions in uncertainty.

Not Reporting on this Outcome Measure

Outcome #7

1. Outcome Measures

Resultant management models that explain potential impacts of new/emerging trends e.g. trade agreements, bio-terrorism threats, and renewable fuels requirements, on specific agriculture sectors to the extent that negative impacts can be mitigated in a timely manner.

Not Reporting on this Outcome Measure

Outcome #8

1. Outcome Measures

Market economies and efficiencies studies relating to factors such as pricing, finance, supply and demand, etc. ensuring that stakeholders are informed and their identified needs, e.g. lower operating costs, become more attainable.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Livestock Gross Margin Insurance for Dairy Cattle (LGM-Dairy) is an insurance tool that enables dairy producers to protect income-over-feed-cost margins. LGM-Dairy is priced based on information from Chicago Mercantile Exchange (CME) futures and options prices for Class III

milk, corn and soybean meal. The LGM-Dairy rating methodology assumes that the volatility implied from CME futures and options data do not change across strike prices. However, evidence suggests that the volatility surface is not flat. Storable commodities such as corn or soybean meal often have higher implied volatilities at higher strike prices. At issue, are changes warranted?

What has been done

OARDC economists used high-frequency data for Class III milk, corn, and soybean meal futures, and options to document the extent the existence and magnitude of volatilities in milk and feed prices in 2011. Using Monte Carlo experiments they examined the effect of accounting for extremes on LGM-Dairy premiums. Their question was should the LGM-Dairy rating method be amended?

Results

The research team found no effect of any significant financial importance. Further experiments revealed that the basket option nature of LGM-Dairy suffices to neutralize the premium-enhancing effect of excess skewness. This project demonstrated that volatility in corn and soybean meal implied volatilities do not seem to change LGM-Dairy premiums sufficiently to warrant amending the LGM-Dairy rating method.

4. Associated Knowledge Areas

KA Code	Knowledge Area
601	Economics of Agricultural Production and Farm Management
602	Business Management, Finance, and Taxation
603	Market Economics
609	Economic Theory and Methods
610	Domestic Policy Analysis

Outcome #9

1. Outcome Measures

Research finding on valuing environmental resources, e.g. wetlands, river restoration, and how it applies to stakeholder needs for demonstrated gains in profits, resources sustained, and/or actions mitigated.

Not Reporting on this Outcome Measure

Outcome #10

1. Outcome Measures

Biocomplexity analysis to understand human-nature interactions at the landscape level that informs human enterprises, leading to demonstrated profitability, environmental protection, and/or improvements in quality of stakeholders' lives.

Not Reporting on this Outcome Measure

Outcome #11

1. Outcome Measures

Increase profitability, reduce environmental impact, and/or improve quality of stakeholders' lives through bio-resource utilization efficiency and effectiveness research such as biomass to energy, nitrogen utilization, biocides, etc.

Not Reporting on this Outcome Measure

Outcome #12

1. Outcome Measures

Market and non-market valuation of environmental resources, e.g. steelhead trout fishing, open space, that have often lacked economic justification that meets client needs, and informs individual, group, and government decision making.

Not Reporting on this Outcome Measure

Outcome #13

1. Outcome Measures

Advance knowledge of vertical markets in developing counties that when applied leads to documented increased trade with the US.

Not Reporting on this Outcome Measure

Outcome #14

1. Outcome Measures

Exchange rate, trade policy, and similar uncertainties research findings that lead to documented mitigation for stakeholders of certain negative effects of international trade.

Not Reporting on this Outcome Measure

Outcome #15

1. Outcome Measures

New policy analysis research that informs policy development and fosters demonstrated gains for stakeholders in areas such as conservation programs, farmland protection, Farm Credit System resources, etc.

Not Reporting on this Outcome Measure

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations
- Competing Public priorities
- Competing Programmatic Challenges
- Populations changes (immigration, new cultural groupings, etc.)

Brief Explanation

As noted above a number of factors continue to impact this planned program. The impact is typically situational as to the degree that any particular external factor affects outcome. As noted in other planned programs the greatest challenge is for OSU Extension and OARDC to find adequate resources to respond to growing demand. Given the emphasis on re-growing the economy, CFAES economists are overwhelmed with demand for their services; e.g. analyze economic situations, make forecasts, assist with new programs such as those OSU Extension provides to families and rural communities seeking economic programs.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

No formal evaluation results to report from OARDC. Publications, research grants garnered, n of stakeholders served, and anecdotal data provide a positive assessment of this planned program. CFAES' agricultural, environmental, and development economic program is consistently ranked one of the top programs in the nation.

Key Items of Evaluation

Of the 66 Ohio State programs that appeared in the recent National Research Council "Data-Based Assessment of Research-Doctorate Programs in the United States" CFAES' Department of Agricultural, Environmental, and Development Economics (AEDE) ranked as the top program in the U.S. in Agricultural and Resource Economics using the regression based ranking calculation. AEDE is the only Ohio State program to earn a top ranking in either of the two reported ranking methods.

AEDE scored particularly well, when compared to other departments around the country, in the percentage of minority faculty (ranked 1st), the average number of PhD students graduated per year (2nd), the average GRE score (3rd), the percentage of first year students with external funding (6th), the percentage of PhD students completing within 6 years (7th), and the average number of publications per faculty member (7th).