V(A). Planned Program (Summary)

Program # 2

1. Name of the Planned Program

Climate Change

☑ 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
102	Soil, Plant, Water, Nutrient Relationships	20%		1%	
104	Protect Soil from Harmful Effects of Natural Elements	30%		0%	
132	Weather and Climate	25%		35%	
202	Plant Genetic Resources	0%		30%	
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants	0%		14%	
206	Basic Plant Biology	0%		10%	
605	Natural Resource and Environmental Economics	25%		10%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2012	Extension		Research	
	1862	1890	1862	1890
Plan	1.5	0.0	3.2	0.0
Actual Paid Professional	2.7	0.0	1.2	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**
269705	0	379574	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
269705	0	379574	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
0	0	2186173	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Priorities for the coming year will be to conduct and synthesize adaptation research, develop resources and strategies to increase climate literacy in target audiences, and train decision-makers in new practices to ensure communities are prepared. The program coordinator will attract educators and program leaders from many parts of Extension to consider content that should shift in their programming so that it addresses climate change, specifically drought-related consequences as they affect production and economics. Content and assistance to producers will change as extreme weather conditions impact crop and livestock operations.

Faculty participate in the associated multistate research committees, NC7, NC1190 and NC1179.

2. Brief description of the target audience

As programming is developed, audiences will be targeted. Targeted audiences must be those with whom we can make a difference, and who can benefit from research-based information. Primarily, we will choose audiences whose production systems will be influenced by climate change, as well as those who consult or influence the decision-makers of these growers and producers. Secondary audiences to be considered will be decision-makers and leaders responsible for preparing communities for change. This includes local government jurisdictions, state and local elected officials, producers and environmental groups, human health services, FEMA, and Extension educators working in food and nutrition, family and community planning and development issues.

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	6613	8000	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	10	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of producers and agribusiness professionals who attend face-to-face educational activities, including individual consultations.

Year	Actual
2012	5660

Output #2

Output Measure

- Number of producers and agribusiness professionals who subscribe to newsletters and access web-based resources.

Year	Actual
2012	3900

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Number of Producers and Community leaders who increase their knowledge of climate change information and how it impacts environment, production systems, and urban systems.
2	Number of Producers who incorporate climate change information into production practices and communities that upgrade city plans reflecting climate change information

Outcome #1

1. Outcome Measures

Number of Producers and Community leaders who increase their knowledge of climate change information and how it impacts environment, production systems, and urban systems.

Not Reporting on this Outcome Measure

Outcome #2

1. Outcome Measures

Number of Producers who incorporate climate change information into production practices and communities that upgrade city plans reflecting climate change information

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	179

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Severe drought affected much of Iowa during the entire 2012 growing season, causing corn and soybean yields to be lower than expected. Prices for feedgrains increased accordingly, resulting in hardship for livestock producers. Pastures and hay supplies were reduced by the drought as were cattle water supplies.

What has been done
Specialists from Agriculture and Natural Resources Extension at Iowa State University conducted a drought educational webinar on August 21 that was hosted at 51 sites across the state. Participants (N = 179) were asked to evaluate the sessions and to identify information helpful to their farming operations that were impacted by the drought. More than 200 viewed the archived segments of the drought webinar. A total of 127 participants completed the evaluations (response rate 71%). The majority of participants were farmers (60%), followed by land owners (24%), and agribusinesses (23%).

Results

There was a significant increase in participants' knowledge about grain quality concerns, feed implications, harvest considerations, fall fertility decisions, tillage, cover crops and residue as a result of attending these webinars (0.05 level of significance). Participants reported having 'low to some' knowledge on these topics before attending the webinar, which increased to 'some to high'. A majority of participants (70%) were 'somewhat to very likely' to talk to their grain buyers before harvest to understand the aflatoxin policy. More than 70% of respondents indicated that they plan to check and clean engine compartments more frequently, conduct soil tests and adjust rates before applying fertilizer. However, 55% indicated that they 'would not or not likely' to plant cover crops to conserve soil moisture. Also, 32% indicated that they would not test for nitrates in their silage before feeding their livestock. The economic impact is described in the Evaluation section.

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
104	Protect Soil from Harmful Effects of Natural Elements
132	Weather and Climate
605	Natural Resource and Environmental Economics

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Government Regulations

Brief Explanation

55% of survey respondents to the drought webinar indicated that they 'would not or not likely' to plant cover crops to conserve soil moisture. Also, 32% indicated that they would not test for nitrates in their silage before feeding their livestock.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

Participants were mixed in their perceptions on the economic impact of drought webinars on their farm operation as evidenced by the absence of any particular trend in the responses. Fifteen per cent indicated a likely economic impact from the knowledge they gained during the webinars of over $50,000, followed by $10,001-25,000 (11%), $501-1,000 (10%), $1,001-5,000 (10%), $5,001-10,000 (10%) and $25,001-50,000 (9%). Around 20% indicated that the information would affect 0-500 animals or acres, and a further 20% indicated it would affect more than 10,000 animals or acres. Participants identified teaching tools such as webinars (32%) and emails (32%) as most useful in receiving drought related farming information. They identified sessions focused on fall applied nitrogen (31%), soil testing (27%) and financial management (25%) as future topics of interest.

Key Items of Evaluation

As drought conditions persist into the 2013 growing season, efforts will be made to monitor crop and livestock producers' adaptation of recommended practices that will mitigate the adverse effects of drought.