

**V(A). Planned Program (Summary)**

**Program # 1**

**1. Name of the Planned Program**

Global Food Security and Hunger: Agriculture & Horticulture

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
111	Conservation and Efficient Use of Water	10%			
121	Management of Range Resources	15%			
205	Plant Management Systems	15%			
211	Insects, Mites, and Other Arthropods Affecting Plants	5%			
216	Integrated Pest Management Systems	15%			
307	Animal Management Systems	5%			
601	Economics of Agricultural Production and Farm Management	5%			
602	Business Management, Finance, and Taxation	10%			
604	Marketing and Distribution Practices	10%			
803	Sociological and Technological Change Affecting Individuals, Families, and Communities	5%			
806	Youth Development	5%			
	<b>Total</b>	100%			

**V(C). Planned Program (Inputs)**

**1. Actual amount of FTE/SYs expended this Program**

Year: 2013	Extension		Research	
	1862	1890	1862	1890
Plan	8.0	0.0	0.0	0.0
Actual Paid Professional	12.3	0.0	0.0	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
334975	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
334975	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
396731	0	0	0

## V(D). Planned Program (Activity)

### 1. Brief description of the Activity

- Conduct applied research on Nevada rangelands involving range ecology concepts and livestock grazing systems.
  - Publish studies, develop curricula, and teach workshops related to plant and livestock production.
  - Educate local, state, and regional stakeholders concerning progress in producing livestock and plants that are economically viable and environmentally friendly.
  - Establish herbicide demonstration/research plots to evaluate the efficacy of these products under local conditions.
    - Expand use of Integrated Pest Management (IPM).
    - Coordinate Nevada IPM efforts with other western states.
    - Educate Nevada land managers, producers, and general public regarding invasive weed identification and control.
    - Strengthen the skills small-acreage producers.
    - Utilize multiple demonstrations/applied research plots to explore high-value specialty crops and manage weeds in agronomic crops, with results reported at field days, workshops, or professional annual meetings.
      - Develop applications for the research on plant production to directly benefit producers.
      - Provide risk management strategies to agricultural producers.
      - Provide teaching and research outreach to agriculture businesses to provide in-depth information on small-business management, farm profitability, and market development.

### 2. Brief description of the target audience

The target audiences for these programs include beginning and existing large-scale crop and livestock (primarily beef/dairy/sheep) producers and small-acreage operators. USDA agencies and other government entities that conduct work in this area are an audience and frequently a program partner.

### 3. How was eXtension used?

UNCE faculty are on several eXtension CoPs and both use and contribute resources to eXtension; however, we are debating the utility of this as a means of supporting and delivering programs.

## V(E). Planned Program (Outputs)

**1. Standard output measures**

2013	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
<b>Actual</b>	20793	0	1923	0

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

**Patent Applications Submitted**

Year: 2013  
Actual: 0

**Patents listed**

**3. Publications (Standard General Output Measure)**

**Number of Peer Reviewed Publications**

2013	Extension	Research	Total
<b>Actual</b>	19	0	0

**V(F). State Defined Outputs**

**Output Target**

**Output #1**

**Output Measure**

- Number of personal contacts through all means by Master Gardener volunteers with those requesting information or assistance.  
Not reporting on this Output for this Annual Report

**Output #2**

**Output Measure**

- Number of green industry employees certified in proper horticulture techniques.  
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	Number of target audiences who learn best management or risk management/skills for alternative or sustainable agriculture.
2	Total acres planted or tested for potential alternative crops in Nevada.
3	Number of participants who apply or use best management or risk management knowledge/skills learned for alternative or sustainable agriculture.
4	Number of producers or individuals or learn or apply changes in operations to increase niche farming opportunities for Nevada Producers.
5	People learning how to produce more of their own food through "grow your own."
6	Number of individuals who gain knowledge about improved human, plant, and animal management systems for sustainable agriculture.
7	Number of individuals who implement improved human, plant, and animal management systems for sustainable agriculture.

### **Outcome #1**

#### **1. Outcome Measures**

Number of target audiences who learn best management or risk management/skills for alternative or sustainable agriculture.

Not Reporting on this Outcome Measure

### **Outcome #2**

#### **1. Outcome Measures**

Total acres planted or tested for potential alternative crops in Nevada.

Not Reporting on this Outcome Measure

### **Outcome #3**

#### **1. Outcome Measures**

Number of participants who apply or use best management or risk management knowledge/skills learned for alternative or sustainable agriculture.

Not Reporting on this Outcome Measure

### **Outcome #4**

#### **1. Outcome Measures**

Number of producers or individuals or learn or apply changes in operations to increase niche farming opportunities for Nevada Producers.

Not Reporting on this Outcome Measure

### **Outcome #5**

#### **1. Outcome Measures**

People learning how to produce more of their own food through "grow your own."

Not Reporting on this Outcome Measure

## **Outcome #6**

### **1. Outcome Measures**

Number of individuals who gain knowledge about improved human, plant, and animal management systems for sustainable agriculture.

Not Reporting on this Outcome Measure

## **Outcome #7**

### **1. Outcome Measures**

Number of individuals who implement improved human, plant, and animal management systems for sustainable agriculture.

### **2. Associated Institution Types**

- 1862 Extension

### **3a. Outcome Type:**

Change in Action Outcome Measure

### **3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2013	2000

### **3c. Qualitative Outcome or Impact Statement**

#### **Issue (Who cares and Why)**

Efficient production of field crops and forages is essential to maintaining the economic viability of Nevada's 3,131 agricultural operations. Each year, Nevada farmers and ranchers produce commodities that generate nearly \$513 million in income, with crop sales, which include nursery and greenhouse production, accounting for approximately 43% of this value (NASS, 2011). The livestock industry generates much of the remaining farm income and the majority of farmland in Nevada is devoted to supplying the forage and nutritional needs of cattle. A significant beef industry also requires effective stewardship of thousands of acres of public rangelands. Also, it is estimated that the number of small farms (less than 50 acres) in Nevada has increased steadily in recent years; but until the 2012 census figures are published the data are inconclusive. Exploring alternative crop production in Nevada is a high priority. UNCE has been working with producers on the production of 14 alternative crops that have the potential to be high value and low-water use, including teff.

#### **What has been done**

UNCE faculty combine applied research and teaching to educate agricultural producers on specific subjects designed to improve their skill set and, subsequently, their success. Teaching methods include field demonstrations featuring research plots to strengthen cultural management

practices while exploring water-conserving crops, managing rangelands, and identifying and controlling for weeds, pests, and disease. UNCE faculty also emphasize business and marketing planning to help producers increase profitability.

### **Results**

As a direct result of the Grow Your Own, Nevada program that teaches how to grow and produce food for local consumption, at least two participants started their own businesses.

In Lincoln County, the three-year Community Value-Added Processing program was completed. During the project, nine new products were developed with 12 more in development. Eleven producers continue to implement their knowledge in 27 hoop houses. One participant farm built a small test kitchen for community use.

The People of the Land program continues to expand, with requests and projects extending to Montana, Washington, Arizona. A fourth printing of the original People of the Land curriculum is currently underway, as more than 4,000 copies have already been distributed across the United States.

## **4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
111	Conservation and Efficient Use of Water
121	Management of Range Resources
205	Plant Management Systems
216	Integrated Pest Management Systems
307	Animal Management Systems
601	Economics of Agricultural Production and Farm Management
602	Business Management, Finance, and Taxation
604	Marketing and Distribution Practices
803	Sociological and Technological Change Affecting Individuals, Families, and Communities

## **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.)
- Other (grant funding availability)

### **Brief Explanation**

Nevada's slow economic recovery, in addition to the increasing demand for locally-

produced foods, inspired a steady increase in small farm/ranch operations, CSAs, and community and school gardens. Traditional large-scale producers were challenged by severe drought conditions, the spread of invasive weeds, and the potential for sage grouse to be listed as a threatened or endangered species.

## **V(I). Planned Program (Evaluation Studies)**

### **Evaluation Results**

UNCE faculty evaluate the outcomes and impacts of programs largely through participant/stakeholder self-evaluations. Evaluations of selected Global Food Security and Hunger programs in 2013 include the Nevada Beginning Farmer and Rancher (Herds & Harvests; Risk Management Education; Grow Your Own, Nevada; Eagles and Agriculture; and IPM and related weed management programs. Evaluations comprise self-administered questionnaires involving pre-tests and post-tests administered immediately following the educational intervention. Six-month follow-up surveys and interviews are also used frequently.

### **Key Items of Evaluation**

More than half (57%) of UNCE's beginning farmers and ranchers participants reported taking actions to make changes in some aspect of their agricultural business as a result of attending Herds & Harvest workshops.

As a result of participating in the Nevada Targeted States Risk Management program in 2013, approximately 46% producers reported they had made notable changes to their operation, which made them more economically viable.

As a result of IPM education, virtually every acre of teff grain planted in Nevada was treated with Latigo® to manage broadleaved weeds, ensuring that UNCE's educational programs will have a significant impact on the profitability of teff farmers.

Grow Your Own, Nevada participants reported an average of 29.4% to 80.6% knowledge gains in a variety of areas regarding growing and producing food for local consumption. Additionally, the program website was accessed nearly 18,000 times in 2013.

Eagles and Agriculture enhances participant knowledge in wildlife habitat and local agriculture. Approximately 400 people attended the 2013 event, and respondents (n=69) gained a better understanding of Carson Valley agriculture (4.14), have a greater appreciation for the role agriculture plays in providing wildlife habitat (4.00), and have greater understanding for the benefits agriculture provides our society (3.86) (5 point Likert-type scale, 1=strongly disagree and 5=strongly agree).