
By Bonnie Braun and Maria Pippidis

Introduction--Development of Logic Models

In 2018, Extension faculty in both Delaware and Maryland began to respond to an emerging crisis among farmers: increased stress and the impact on both the farm and farm family well-being. The University of Maryland Extension created a new Farm Stress Management website; The University of Delaware created the Farm Stress Management (FSM) toolkit. Both institutions produced a special edition of the Delmarva Farmer released in January, 2019. The University of Delaware created a Delaware Library Guide; conducted Mental Health First Aid training; made presentations at Ag Week; and focused on stress management at farm meetings.

The University of Maryland College of Agriculture and Natural Resources awarded a multi-disciplinary team a seed grant to investigate stress among Maryland Farmers. A survey of 527 attendees at winter production meetings revealed that stress was higher than the year before and that finances and regulations were among the top sources of stress. A five-member team of UMD agriculture and family and consumer sciences attended the Michigan State University Managing Farm Stress training. And, in partnership with the Maryland Soil Conservation Service, conducted four workshops for Extension, agriculture, natural resources, finance and health professionals to increase awareness and understanding of mental health issues and impacts on farm viability.

In 2019, the authors were asked to create logic models that would help Extension professionals in both states to have a common framework for programming to address stress. Before the models could be created, an extensive review of literature and theories was conducted by the authors to provide a basis for structuring the logic models. During the review, the authors identified assessments for formative and summative evaluation and multiple resources for teaching. We also reviewed and created teaching tools. We determined that most existing teaching resources addressed stress management and were focused on the individual. We located only a few resources that addressed underlying causes of stress both within and external to the farming population; focused on the interactions within families and communities; or included public policies influencing the stress. We also found little evidence of multi-discipline, research-based and theory-informed resources for programming.

We concluded that a risk and resiliency framework was best suited to address the complexities of stress, stressors, risk and recovery. We decided that a guide to risk and resiliency programming and three logic models were needed. The logic models were created for three distinct audiences: professionals, the farming population and stakeholders.

Accompanying Guide:

To assist Extension educators in planning, conducting and evaluating programming, we created a toolkit that includes:

- The Farm and Farm Family Risk and Resiliency Guide with a literature review and a farm and family risk and resiliency logistical model
- A set of three logic models for programming with three different audiences;
- Tools for assessments and teaching; and
- Resources.

An electronic copy of the Farm and Farm Family Risk and Resiliency Guide and Toolkit [to be] located at:

http://extension.udel.edu/ag/agribusiness/ or https://extension.umd.edu/FarmStressManagement

Permission to Use Logic Models

The three logic models and the socio-ecological framework for farm and farming population health and wellness may be used and/or modified to fit the needs of a variety of educators in creating their own plans of work for conducting Extension programming. For example, individual educators may choose to only do program for a portion of the logic model. But taken together, a set of educators, including an entire state program, can show collective impact.

Acknowledgements:

Thanks to the following colleagues in Maryland and Delaware who reviewed early iterations of these logic models:

- Shannon Dill, UME Agriculture Extension Educator
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- Teresa McCoy, UME Assistant Director, Evaluation and Assessment
- Laurie Wolenski, UDEL Agriculture Agent and Director, Northeast Center for Risk Management

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**Explanation of Logic Models**

In recent years, professionals from multiple disciplines who serve agriculture, have been seeking ways to understand and help reduce impacts of crisis and stress on farming operations and farming populations. Many of these professional are part of the Extension service in the areas of agriculture, 4-H, family and consumer sciences, and community development. Some are from health, financial and commodity organizations. Some may recall experiences of the Farm Crisis of the mid-1980s; others got involved after the 2008 recession; and some are newly learning about programming as the downturn in farming profitably continues a multi-year trend.

Cooperative Extension professionals are creating educational tools, offering professional development, conducting educational programs and doing individual consultations. In general, Extension programs are provided to local farmers, families and other professionals on separate tracks—one focused on the farming enterprise; the other on individuals and families. Separately or together, they likely include risk management aspects of the farm and/or family financial or health. Alternatively, they may focus on agricultural risk management, individual stress management techniques, finances, nutrition and health, or chronic disease management.

Few professionals take a multidisciplinary, integrated, socio-ecological approach to physical, mental, emotional and financial health and well-being of individuals, families and the farm to prevent or mitigate risk and impact of stress and crisis. Such an approach has been recommended by researchers and practitioners. The authors created a multi-discipline, research-based, theory-informed risk and resiliency framework, shown in Figure 1. The framework is grounded in a slightly modified version of the Cooperative Extension National Health & Wellness Framework. The title of the framework is An Integrated Risk and Resiliency Extension Framework for Health and Wellness of Farms and Farming Populations.

This framework provides a visual of relationships between the ultimate outcome in the white center, other outcomes, content and input. Each component corresponds with its color-coded component in three logic models. The logic models, a guide for programming, with a comprehensive literature review, and educational tools are available in a new Extension Farm and Family Risk and Resiliency available in later 2019 after user-testing. Three logic models were created to provide a common programming and assessment approach. Each focuses on a different audience.

**Logic Model 1** targets agriculture, finance, family and health professionals who support the farming populations. This logic model can be used to guide decision making and measure impact of professional development programs intended to increase awareness of challenges experienced by the farming population; increase understanding of research that supports an integrated risk and resiliency; and increase capacity to apply principles and confidence to conduct the programming. It can also serve as a basis for proposals for funding requests.

**Logic Model 2** targets farmers, farm families and/or farm workers. It can help professionals plan, implement and measure outcomes of risk and resiliency programs. This logic model can save individual professionals time in developing programs; can serve as a basis for working with multiple professionals; and can provide a common base for assessing the extent to which multiple professionals are increasing the likelihood of reaching the intended short, medium and long-term outcomes.

**Logic Model 3** targets stakeholders whose decisions and actions impact farming communities and farming populations. It is for professionals to use to plan, implement and measure outcomes of risk and resiliency programming. This logic model can save individual professionals time in developing programs; can serve as a basis for working with multiple professionals; and can provide a common base for assessing the extent to which multiple professionals are increasing the likelihood of reaching the intended short, medium and long-term outcomes.

**Figure 1**

*An Integrated Risk and Resiliency Extension Framework for Health and Wellness of Farms and Farming Populations*

Bonnie Braun and Maria Pippidis, September 30, 2019

Suggested Citation:

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Situation: Strengthening resiliency of farms, farm families and farm workers and reducing risks requires more than educating the farming population. It requires a socio-ecological approach, by professionals from multiple sectors, who understand the historical and current context of agriculture and challenges facing the prosperity of the farming sector of the economy. Professionals from non-agriculture sectors need to understand the impact of risks on the farming population and local communities. To build sustainable farms and rural communities, a common framework, shared language and an approach that combines expertise from multiple sectors must be developed and used to create effective and integrated solutions. Agriculture and non-agriculture professionals need to better understand ways that resiliency thinking and risk management strategies can prevent or mitigate impacts on finances, health and well-being in the short and long term of farm families and their enterprises. This need was confirmed during a recent national study of professionals and from participants in multiple state Farm Resiliency workshops and Strengthening Health and Farm Vitality forums.

### Extension Personnel
- Agriculture, family and consumer science, 4-H and other specialists, related faculty and Extension agents/educators
- IT/Marketing staff

### Non Extension Personnel
- Agriculture, health, mental health, financial and legal specialists, members of the media

### Partners
- County and state Extension councils, staff and volunteers
- Extension system
- Non-profit organizations
- Faith-based organizations
- Schools
- Financial and legal services
- Federal, state and local agencies/government
- Health care system and providers

### Financial Resources
- Local, state and federal funding
- Grant funding
- Collaborator in-kind
- Program fees
- Sponsors

### Other Resources
- Theoretical Framework
- Evidence-based curriculum
- Technology
- University and other science-based resources

### Professionals
- Professionals in agriculture, health care, mental health, financial, and legal services, social workers, government, community development, built environments, ag teachers, FFA and 4-H Leaders
- Faith-based community leaders
- Elected and appointed officials
- Extension personnel
- Members of the media

### Learning Outcomes
- Professionals will gain knowledge, confidence, aspirations (plan to) and skills related to:
  - Theoretical framework for farm risk and resiliency thinking and management including the:
    - Stress management
    - Strategies to stay physically and mentally healthy—physical exercise, healthy eating
    - Strategies to support family and farm financial wellbeing
    - Strategies and agriculture best practices in the areas of marketing, legal, production, financial and human risk.
    - Social and professional support networks
    - Use of contingency plans related to health care and farm operations
    - Health insurance coverage
    - Succession, transition and contingency planning for farm operation
    - Family communication skills, family time, positive social bonds
    - Community resource connections
    - Safety precautions
    - Accessing health care to address health issues
  - Risk and resiliency assessments: farm risk management, financial wellbeing, stress management, nutrition and health status
  - Advocacy regarding resiliency thinking and risk management
  - Farm and Farm Family Risk and Resiliency Toolkit resources

### Action/Behavioral Change Outcomes
- Professionals will:
  - Develop a plan that integrates the risk and resiliency framework into their organization/work plan
  - Assist farm and farm families with integrating risk and resiliency thinking and management factors into family and farm operation plans that may include:
    - stress management,
    - health and physical and mental wellbeing,
    - financial wellbeing,
    - agriculture best risk management practices
    - build family, social and professional support networks,
    - health insurance coverage,
    - farm continuity and contingency plans,
    - family communication and positive family time
    - community resources
    - safety,
    - accessing health care
  - Adopt, adapt and/or create educational programs and/or informational, teaching and marketing materials.
  - Incorporate learnings into their professional settings as teachers, service providers, information disseminators that will contribute to building risk and resiliency thinking and management factors by farm audiences
  - Engage in advocacy with decision makers regarding building supportive communities.

### Conditional Outcomes
- Professionals will have:
  - Confidence and successfully implemented their plan to support positive changes for farms and farm families.
  - Number of professionals reporting improvements by their clientele,
  - Number of professionals reporting changes in their organization/work plan based on the risk and resiliency framework.
  - Contributed to strengthening the support of communities for farms and farm families.
  - Number of professionals reporting positive changes in the community for farms and farm families support
  - Evidence of those changes

### Ultimate Outcomes
- Professionals will:
  - Use an integrated approach as they interact with clientele as farmers and farm families implement plans that enhance the resiliency and health of the farm operation and the people working and living on the farm now and in the future.
  - Align organizational policies to promote the resiliency, health and wellbeing of the farm, farm family, farm workers and the community.
  - Live and work in communities that support and sustain the resiliency, health and vitality farms, farm families and their workers.
Farm and Farm Family Risk and Resiliency Logic Model Two — Farm and Farm Families

**Situation:** Farm families experience both ordinary and extra-ordinary stress and change because of the interdependent nature of family farm business and farm family living. Ordinary stresses include the constancy of responsibilities to make or keep the farm profitable; begin and/or retain a farming legacy; juggle on and off-farm work; care for family members; deal with illness or injury; manage multi-generational tensions and handle weariness and loneliness. Extra-ordinary stresses, like bad weather, volatile markets, and tariffs, add pressures to farming enterprises. These pressures impact the health of farmers and farm families, as they may experience both ordinary stress and change because of them. Farmers and farm families are adaptive and resilient, and they have the capacity to learn and adopt skills in risk management and resiliency thinking. They can learn through an integrated information and educational approach among agriculture, family, finance, community and health professionals.

**Ultimate Outcomes**
- Farmers and farm families can:
  - Improve resiliency thinking and management skills.
  - Assessed by standardized risk and resiliency assessments.
  - Number of farmers and farm families making choices that enhance healthy and safety.
  - Adopt resiliency and risk thinking and management strategies to support healthy and safe farms and homes.
  - Number of farmers/families completing risk and resiliency plans.
  - Number of risk and resiliency goals achieved.
  - Improved financial planning and management skills.
  - Assessed by standardized farm and family financial assessments.
  - Number of farmers and farm families making choices that enhance financial well-being (now and in the future).
  - Farm and family stress management and healthy living strategies, financial management, decision making, family and community support, safety and accessing health care.
  - Farm and family stress management and healthy living strategies, financial management, decision making, family and community support, safety and accessing health care.
  - Are physically, emotionally, mentally, financially and socially healthy at every stage of life.
  - Are living in supportive communities.

**Outputs**

<table>
<thead>
<tr>
<th>Extension Personnel</th>
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</thead>
<tbody>
<tr>
<td>Agriculture, family and consumer science, 4-H and other specialists, related faculty and Extension agents/educators</td>
</tr>
<tr>
<td>IT/Marketing staff</td>
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<thead>
<tr>
<th>Non Extension Personnel</th>
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<tr>
<td>Health and financial specialists in private and public sector</td>
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<thead>
<tr>
<th>Partners</th>
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<tbody>
<tr>
<td>County and state Extension councils, staff and volunteers</td>
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<tr>
<td>Extension system</td>
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<tr>
<td>Non-profit organizations</td>
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<tr>
<td>Faith-based organizations</td>
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<tr>
<td>Schools</td>
</tr>
<tr>
<td>Financial and legal services</td>
</tr>
<tr>
<td>Federal, state and local agencies/government</td>
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<tr>
<td>Health care system and providers</td>
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<tr>
<th>Financial Resources</th>
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</thead>
<tbody>
<tr>
<td>Local, state and federal funding</td>
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<tr>
<td>Grant funding</td>
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<tr>
<td>Collaborators in-kind</td>
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<tr>
<td>Program fees</td>
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<tr>
<td>Sponsors</td>
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<thead>
<tr>
<th>Other Resources</th>
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</thead>
<tbody>
<tr>
<td>Theoretical framework</td>
</tr>
<tr>
<td>Evidence-based curriculum</td>
</tr>
<tr>
<td>Technology</td>
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**Inputs**

<table>
<thead>
<tr>
<th>Learning Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individuals and families gain knowledge, confidence, aspirations (plan to) and skills related to risk and resiliency thinking and management including:</td>
</tr>
<tr>
<td>Risk and resiliency assessments — farm risk management, financial wellbeing, stress management, nutrition and health status.</td>
</tr>
<tr>
<td>Stress management techniques</td>
</tr>
<tr>
<td>Strategies to stay physically and mentally healthy — physical exercise, healthy eating, health promotion.</td>
</tr>
<tr>
<td>Strategies to support family and farm financial wellbeing</td>
</tr>
<tr>
<td>Strategies and agriculture best practices in the areas of marketing, legal, production, financial and human risk.</td>
</tr>
<tr>
<td>Social and professional support networks</td>
</tr>
<tr>
<td>Health insurance coverage</td>
</tr>
<tr>
<td>Succession, transition and contingency planning for farm operation continuity</td>
</tr>
<tr>
<td>Family communication skills, family time, positive social bonds</td>
</tr>
<tr>
<td>Community resource connections</td>
</tr>
<tr>
<td>Safety precautions</td>
</tr>
<tr>
<td>Accessing health care to address health issues</td>
</tr>
<tr>
<td>Advocacy regarding resiliency thinking and risk management for farm audiences and farm communities</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>Action/Behavioral Change Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individuals and families have adopted one or more effective practices related to risk and resiliency thinking and management including:</td>
</tr>
<tr>
<td>Complete risk and resiliency assessments.</td>
</tr>
<tr>
<td>Discussed need to develop plans to build risk management and resiliency factors for the family and farm operation.</td>
</tr>
<tr>
<td>Use strategic risk and resiliency actions to better manage:</td>
</tr>
<tr>
<td>Stress, health and physical and mental wellbeing.</td>
</tr>
<tr>
<td>Financial wellbeing, agricultural best risk management practices</td>
</tr>
</tbody>
</table>
| Family, social and professional support networks, |}

<table>
<thead>
<tr>
<th>Conditional Outcomes</th>
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</thead>
<tbody>
<tr>
<td>Farmers and farm families will:</td>
</tr>
<tr>
<td>Improve resiliency thinking and management skills.</td>
</tr>
<tr>
<td>Assessed by standardized risk and resiliency assessments.</td>
</tr>
<tr>
<td>Number of farmers and farm families making choices that enhance healthy and safety.</td>
</tr>
<tr>
<td>Adopt resiliency and risk thinking and management strategies to support healthy and safe farms and homes.</td>
</tr>
<tr>
<td>Number of farmers/families completing risk and resiliency plans.</td>
</tr>
<tr>
<td>Number of risk and resiliency goals achieved.</td>
</tr>
<tr>
<td>Improved financial planning and management skills.</td>
</tr>
<tr>
<td>Assessed by standardized farm and family financial assessments.</td>
</tr>
<tr>
<td>Number of farmers and farm families making choices that enhance financial well-being (now and in the future).</td>
</tr>
<tr>
<td>Report or demonstrate increased risk and resiliency capability and well-being as measured by indicators from the Extension program (nutrition, financial, health, agriculture risk management, health insurance health etc.) in which they participated.</td>
</tr>
<tr>
<td>Influenced the development of supportive communities.</td>
</tr>
<tr>
<td>Number of decision makers, stakeholders and communities that focus on providing support to farm families.</td>
</tr>
<tr>
<td>Number of community resources supporting farmers, farm families and farms.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Outputs</th>
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<tbody>
<tr>
<td>Number of participants reached directly:</td>
</tr>
<tr>
<td>Youth</td>
</tr>
<tr>
<td>Families</td>
</tr>
<tr>
<td>Farmers and ranchers</td>
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<tr>
<td>Farm workers</td>
</tr>
<tr>
<td>Decision makers</td>
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<tr>
<td>Stakeholders</td>
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<tr>
<td>Peers</td>
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<thead>
<tr>
<th>Activities</th>
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<tbody>
<tr>
<td>On-site classes or workshops conducted</td>
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<tr>
<td>Presentations made</td>
</tr>
<tr>
<td>Webinars conducted</td>
</tr>
<tr>
<td>Train the Trainer programs</td>
</tr>
<tr>
<td>Newsletters/blogs written</td>
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<tr>
<td>Social media campaigns conducted</td>
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<tr>
<td>Podcasts posted</td>
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<tr>
<td>Curriculum developed</td>
</tr>
<tr>
<td>Educational or marketing products developed</td>
</tr>
<tr>
<td>Services rendered</td>
</tr>
<tr>
<td>Research projects conducted</td>
</tr>
<tr>
<td>Journal articles written/accepted for publication</td>
</tr>
<tr>
<td>Presentations made to promote the programs</td>
</tr>
<tr>
<td>Webpages developed</td>
</tr>
<tr>
<td>Partnerships established</td>
</tr>
<tr>
<td>Media contacts including outreach as well as interviews</td>
</tr>
<tr>
<td>Pre and Post assessments completed</td>
</tr>
<tr>
<td>Follow-up surveys or interviews conducted</td>
</tr>
<tr>
<td>Proposals for funding written/awarded</td>
</tr>
<tr>
<td>Farm hosted community events</td>
</tr>
</tbody>
</table>

| Number of contacts reached through: |
| Media |
| Social media |
| Webpages |
| Newsletters |
| Blogs |
| Podcasts |

| Number of contacts reached directly: |
| Youth |
| Families |
| Farmers and ranchers |
| Farm workers |
| Decision makers |
| Stakeholders |
| Peers |

<table>
<thead>
<tr>
<th>Participation</th>
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<tbody>
<tr>
<td>Media</td>
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<tr>
<td>Social media</td>
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<td>Blogs</td>
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<td>Podcasts</td>
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Farm and Farm Family Risk and Resiliency Logic Model Three — Stakeholder Development

**Situation:** Reducing risks and strengthening resiliency of farms, farm families and farm workers requires more than educating the farming population. It requires that communities be supportive. For communities to be supportive, policies, procedures, services, rules and regulations and ways of interacting with the farming population must be integrated across multiple sectors using a socio-ecological approach. The ways communities work must be in alignment with risk and resiliency thinking and actions. Professionals, decision and public policy makers and other stakeholders need to understand risks faced by the farming population, the agricultural economy and ultimately the community and the economy. They need to understand how community support and resources enable the farming population and their farm enterprises to be resilient. They need a common framework and shared language to organize communities to identify challenges, create integrated solutions and institute supports that strengthen finances, health and well-being of the farm, farm family and farm workers. This approach will further strengthen the broader community’s economic and social determinants of health and wealth.

### Inputs
- **Extension Personnel**
  - Agriculture, family and consumer science, 4-H and other specialists, related faculty and Extension agents/educators
  - Information Technology and Marketing staff

- **Non-Extension Personnel**
  - Agriculture, health, mental health, financial and legal specialists

- **Partners**
  - County and state Extension councils, staff and volunteers
  - Extension system
  - Non-profit organizations
  - Federal, state and local agencies/government

- **Financial Resources**
  - Grant funding
  - Collaborators
  - Sponsors

- **Other Resources**
  - Evidence-based curriculum
  - Technology
  - University resources

### Activities
- Number of:
  - Extension educators and specialists serving on boards, committees, coalitions
  - Presentations to, and consultation with, stakeholders and decision makers
  - Media outreach
  - Policy Briefs
  - Forums
  - Learning Circles
  - Deliberation guides
  - Didactic Theater

### Outputs
- **Stakeholders and Decision Makers**
  - Community leaders
  - Agency leaders
  - Government officials
  - Community members
  - Policy and issue-focused organizations

  Stakeholders/decision makers will increase their knowledge, skills and confidence regarding:
  - Theoretical framework for farm risk and resiliency thinking
  - Links between individual and family health and financial well-being and economic vitality of the farm and farm family and their communities.
  - Links between public policy and the financial stability of farms and the farming population.

### Learning Outcomes
- Stakeholders/decision makers will:
  - Will adopt policies that support farmer, farm family and farm worker health and financial wellbeing
  - Will adopt policies that provide support resources for farms, farm families and local communities.

### Action/Behavioral Change Outcomes
- Stakeholders and decision makers will:
  - Use policy making and financial resources to create resilient and sustainable farms, farm families and farming communities and support professionals working with them.
  - Number of stakeholders reporting improvements for their clientele, organization or community
  - Increased funding to support activities and/or policies that support farm and farm family resiliency vitality.
  - Increased support for related Cooperative Extension initiatives.

### Conditional Outcomes
- Stakeholders and decision makers will:
  - Create communities that, in the short and long term, support and sustain resilient farms, farm families, and farm workers.
  - Number of supportive policies created.
  - Increased support for Cooperative Extension initiatives.

### Ultimate Outcomes
- Stakeholders and decision makers will:
  - Number of supportive policies created.
  - Increased funding to support activities and/or policies that support farm and farm family vitality.
  - Number of supportive policies created.
  - Increased support for Cooperative Extension initiatives.