

# **Sustainable Business Opportunities for Floyd County, Virginia:**

## **A Preliminary Feasibility Study**

Fall 2009  
Virginia Tech  
Economic Development  
Studio Course



# SustainFloyd Priorities

- **Keeping people employed in Floyd County**
- **Maximizing linkages within Floyd County**
- **Enhancing Floyd County's independent economy**
- **Meeting current needs without compromising future generations**



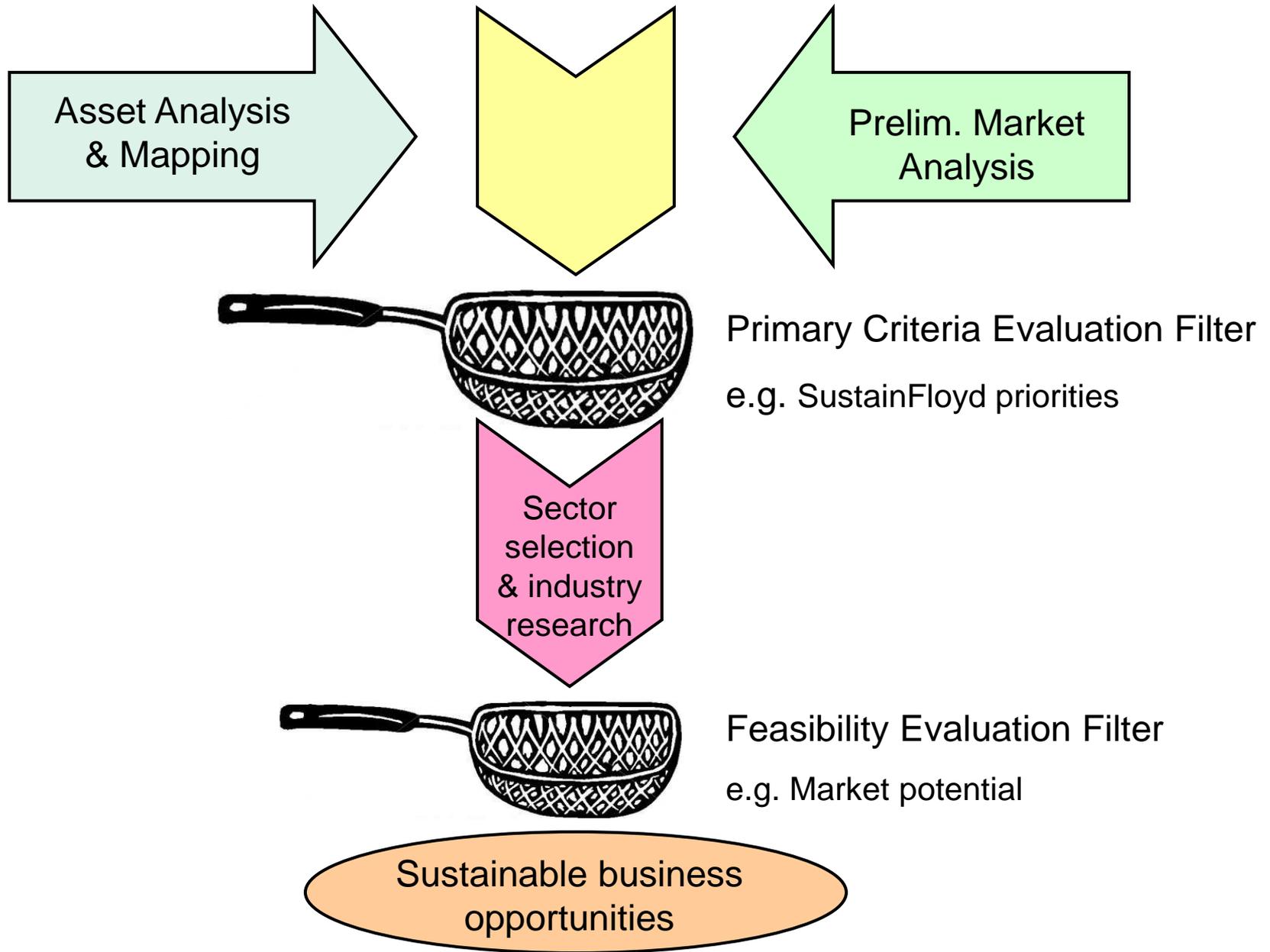
# SUSTAINABILITY

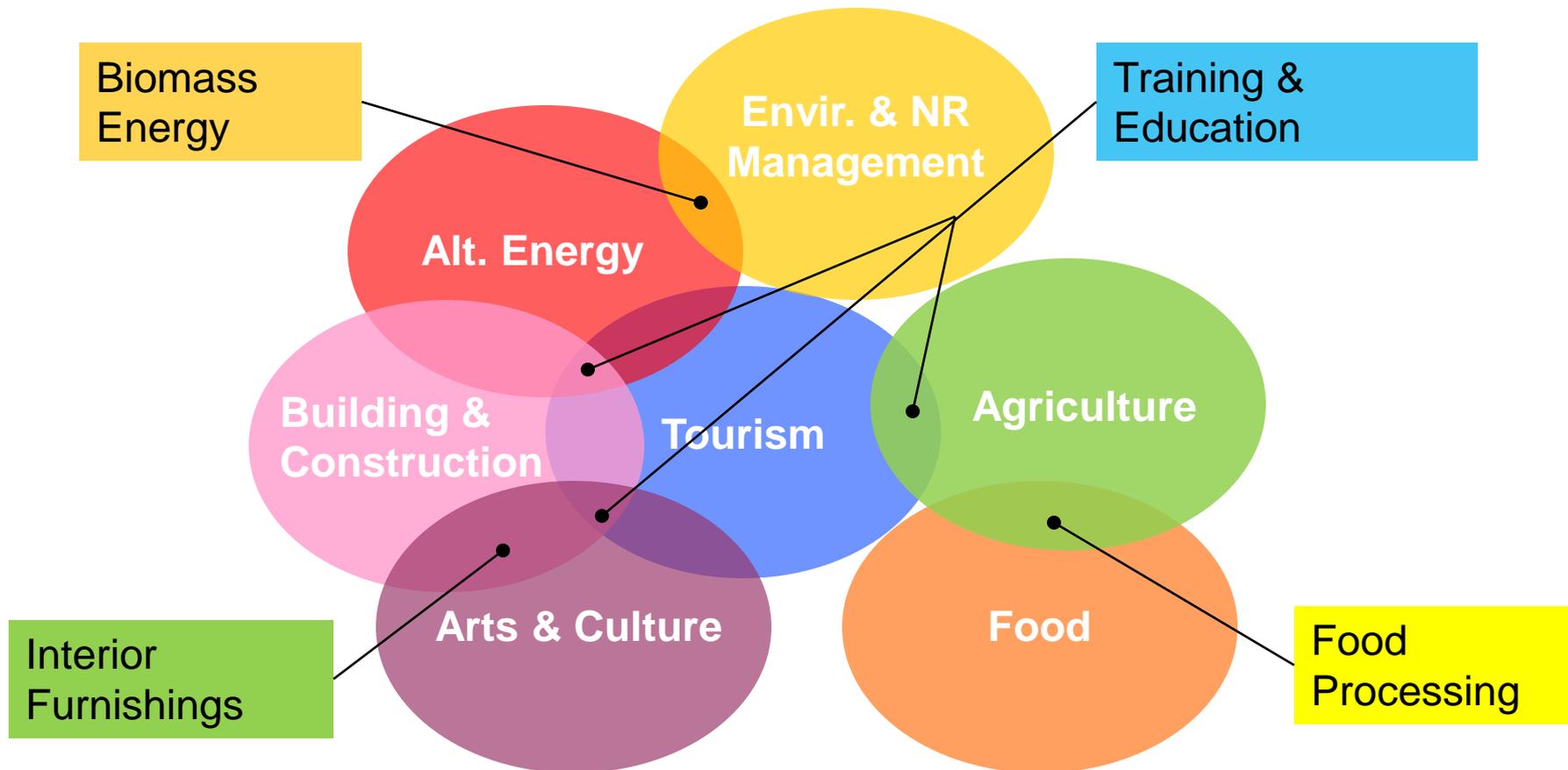
“Economic activity by companies and customers in the form of products, services, and business models that promote **economic growth**, reduced **environmental impacts**, and improved **social wellbeing**. ”

*State of Green Business Report 2009*



# Process





# Sectors and Linkages



Sustainable Living Education



Wood Pellets



Dairy Processing



Flooring, Wall Cladding and Counters

Wood

Pellet

Production.





## **Sustainability**

- Carbon neutral
- Turn waste into renewable energy
- Incentivize sustainable forest management
- Locally-produced, locally-dependent

## **A Match to Floyd's Assets**

- Local source of biomass (wood, grass)
- Two wood flooring plants in Patrick County
  - » 10 trailers of wood waste daily
- Minimal water requirement
- Minimal waste/pollution from production

## Wood Pellet Factory

### Inputs:

- Wood, or other biomass (grass, cornstalks...)
- Heat and pressure (from gas engine or electric motor)
- Bonding additives (if necessary)

### Equipment:

Grinder + Drier + Pelletizer + Bagger  
≈ *total equipment costs: \$40,000-\$50,000*

**Output** ≈ 600 lbs/hr



## Carolina Wood Pellets, LLC

Macon County, NC

**Project Costs:** \$2.8 M

**Production:** 68,000 tons annually --  
30,000 households

**Inputs:** Flooring & Mill operations wood  
waste. 50-Mile radius

**Market:** 30-40 mile range

**Jobs:** 32 Full & Part-Time



# Considerations

- **Growing Market Demand**

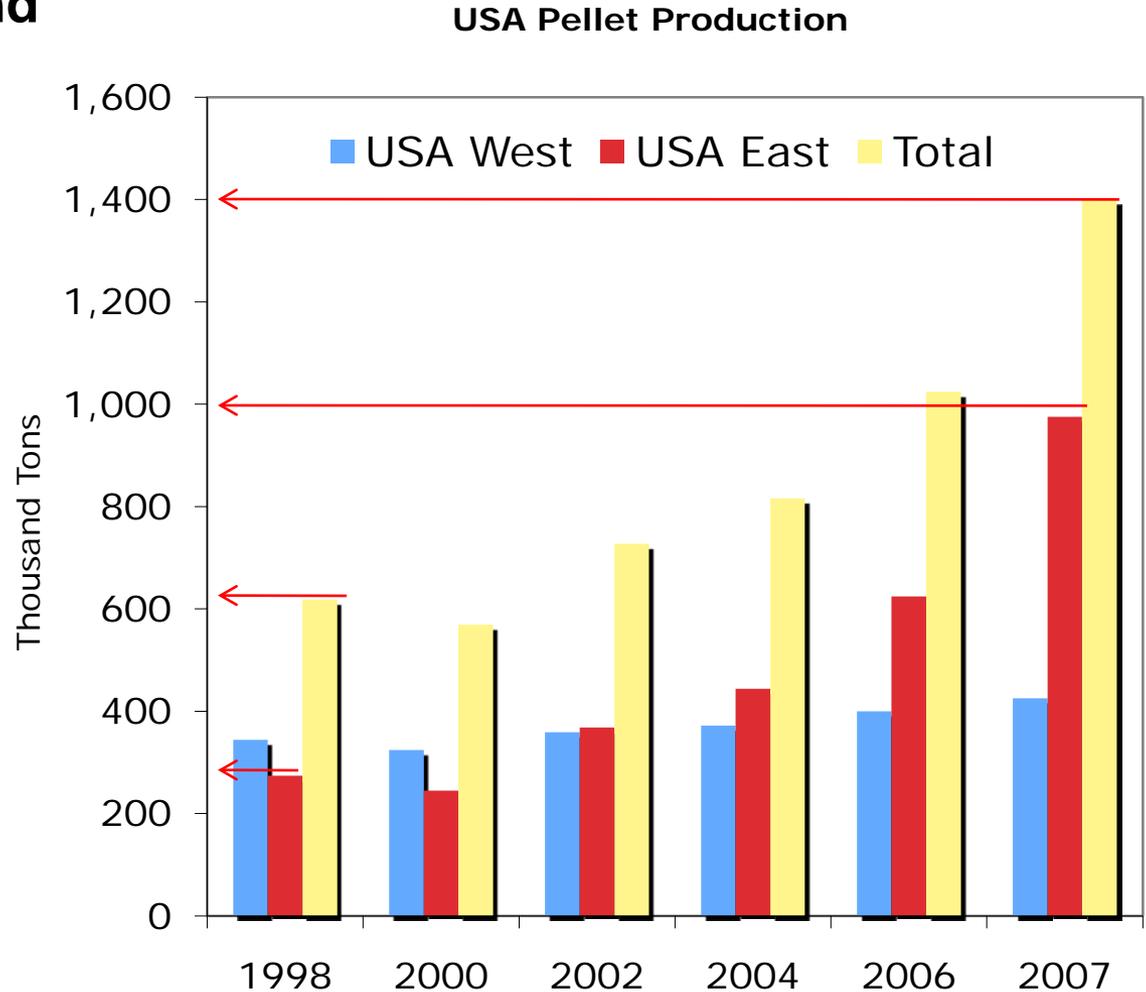
*United States:*

- 1998: 618,000 tons

- 2007: 1.4 M tons (+126%)

- **U.S. Energy Policy**

- **Stove Availability**





**Micro Dairy.**

## Sustainability

- Additional market for dairy farmers
- Micro dairy profitability
- Local food trends

## A Match For Floyd's Assets

- Adds to the cluster of value-added agriculture enterprises in Floyd
- Seven Stars Yogurt
- Agricultural base (5+ dairy farms)



# Micro Dairy

- **Land:** No more than an acre
- **Facility:** 20,000-30,000 square feet
- **Equipment:** Pasteurizer, tanks for storage and stirring, and a filling machine/line
- **Labor:** Machine operators, food batch makers, a dairy scientist, management, office/maintenance, dock workers, drivers
- **Ingredients:** Milk, stabilizers, sweeteners, flavors, fruits

***Estimated total start-up costs:***  
***\$1.2-1.7M***



# Seven Stars Farm

- Organic yogurt producer, established in 1987
- 350 acre farm in Phoenixville, PA
- Processes about 1.25 million pounds of milk per year
- Makes 175-200 quarts of yogurt/day; 6 days/ week
- 8 full-time and 4-6 part-time employees
- In 2006, had \$1.4 million in revenues
- Market is most of the eastern United States



# Considerations

- Waste Water Disposal
- Competition
- Commitment to farmers to buy milk
- Must have diverse production capability



# Flooring, Wall Cladding, and Countertops.



## Sustainability

- Promotes sustainable living options
- Can be adapted according to scale
- The little waste that is created can be used in the production process
- Could jumpstart local recycling efforts

## A Match for Floyd's Assets

- Can put existing artisan base to use
- Production processes are compatible with demographic skill compatibility
- Can be sold locally and nationally
- Can be produced using readily available local resources



## Flooring, Wall Cladding, and Countertops:

### Inputs:

- Substrates or foundation materials
- Recycled materials including glass
- Manufacturing
- Creative Elements

### Costs:

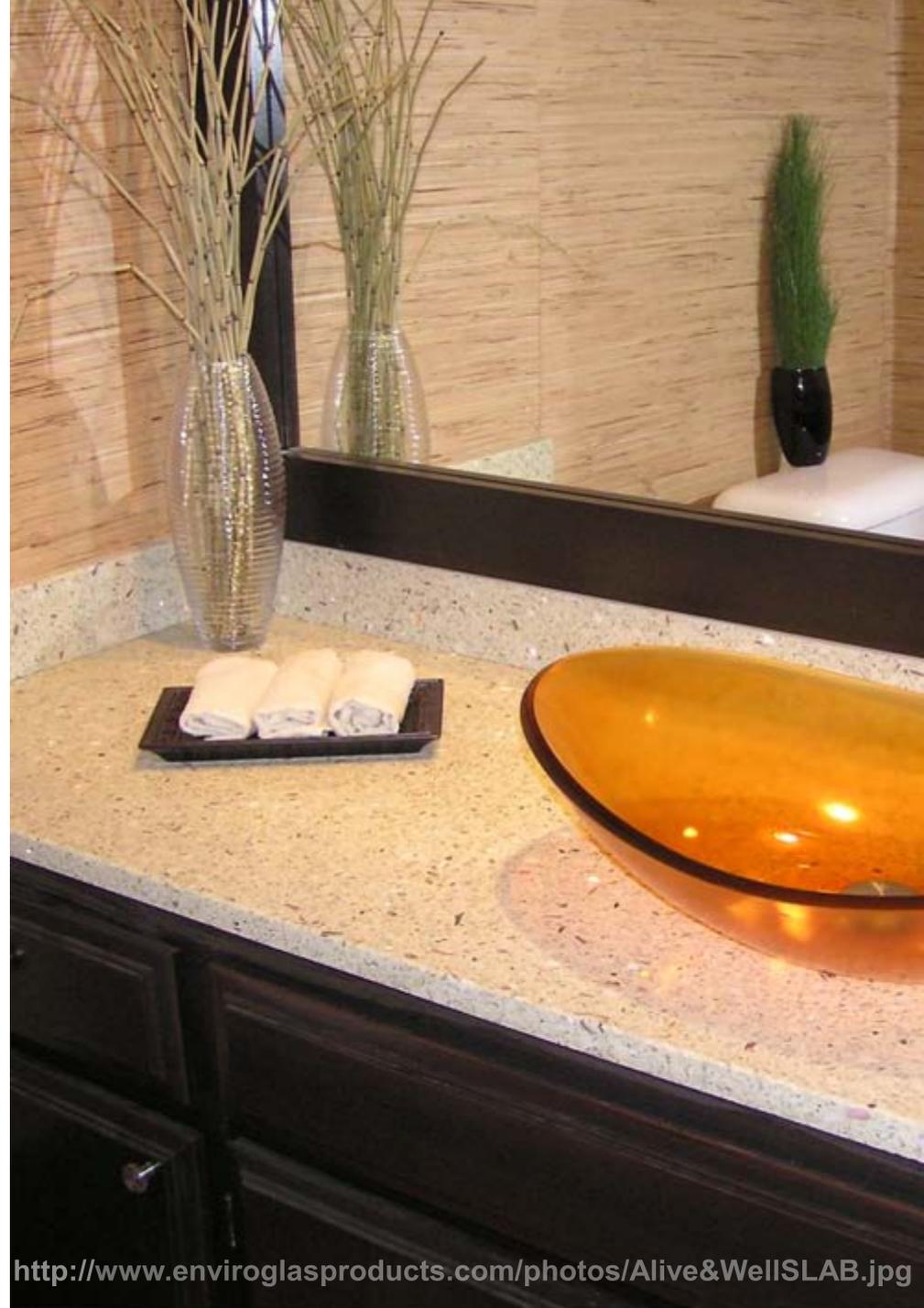
- Range from \$2000 to \$10000
- Include necessary shop tools, such as sanders, grinders, saws
- Concrete or resin available at retail prices
- Recycled element prices vary – as little as \$2.16 per ton



## EnviroGLAS

Plano, Texas

- 100% recycled glass countertops and floors
- Market: Primarily Texas, but ships nationally
- Inputs: Post-consumer and industrial glass, epoxy, glass-crushing machine
- Diverts over 1 million pounds of glass annually from landfills
- Spun off of City of Plano's recycling program



# Considerations

- Cannot compete on price alone – We need to add value to the product
- Household goods market suffers in recessions – but the right product can weather the storm
- Are green products here for the long run?



# Sustainable Living Training & Education.



## Sustainability

- Enhancing connections to the environment and others' ability to live sustainably
- Creating additional revenue generating opportunities for skilled and talented individuals local to Floyd



## A Match for Floyd's Assets

### **Skills:**

- Farming
- Craftspeople
- Homesteading skills
- Alternative energy/ retrofitting

### **Resources:**

- Farms & farmland
- Jacksonville Center for the Arts
- Existing tourism infrastructure
- Potential university & community college partners (vocational programming)

## Sustainable Living Education and Training Programs

- Potential programming focus areas
  - Sustainable/ organic agriculture
  - Alternative energy options
  - Natural/ green building & design
  - Homesteading skills(many programs offer a combination)
- Workshops range from ½ day to 2 weeks
- Tuition & Fees:
  - ½ day ~ \$25-50
  - Full day ~ \$60-100
  - Multi-day ~ \$100/ day
- Paid instructors tend to be contracted
  - ~\$20-75/ hour or set fee per student
- Majority operate as 501(c)(3)





- Biodynamic farm and agricultural education program
- Operates CSA & education programs
- On-farm workshops focused on small-scale food production & processing – extends into green building, energy & water tech, etc.
  - targeted to children, families & adult groups
- Year-long farmer training programs part of national network
  - mentoring farmers and business planning
- 501(c)(3) org ~\$600K operating budget (2007)

# Considerations

- Uniqueness of program offerings & level of instruction
- Target audience
  - avocational v. vocational
- *Miller's Way Farm Life Visitor Center and Trail* proposal - Rocky Knob project



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Sustainable Living Education



Wood Pellets



Dairy Processing



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