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
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

Asset Analysis & Mapping

Prelim. Market Analysis

Primary Criteria Evaluation Filter
e.g. SustainFloyd priorities

Sector selection & industry research

Feasibility Evaluation Filter
e.g. Market potential

Sustainable business opportunities
Sectors and Linkages

- Tourism
- Food
- Alternative Energy
- Building & Construction
- Agriculture
- Arts & Culture
- Environment & Natural Resources Management
- Training & Education
- Biomass Energy
- Interior Furnishings
- Food Processing

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**

**USA Pellet Production**

Wood Pellet Association of Canada, 2006
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)

http://www.flickr.com/photos/susieblackmon/3411350369/
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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