



Plant Power for the People:

Agriculture as Just Transition in Appalachia

SOC350-402: Topics In Sociology: Climate Change and Just Transition, Dr. Shaunna Scott
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INTRODUCTION

Agriculture, deforestation, and land usage contribute to one-third of global greenhouse gas emissions. One of the best things we can do in using our capital to fight against climate change is support local sustainable agriculture.

In promoting a just transition for Appalachia, we must support the growth of alternative agricultural initiatives. This will lead to sustainable jobs, local access to increased resources, socioeconomic growth, and provide an ecological benefit to an area experiencing critical need for these changes.

In this way we can change the “resource curse” into a dirty blessing.

JUST TRANSITION

Just Transition requires solutions ensuring the well-being of workers and communities; addressing racial, economic and gender injustice; protecting health, environment and climate; and creating meaningful jobs as well as a thriving and sustainable economy.

INDIGENOUS CROPS

•Blackberries

Pros

- Demand often exceeds supply.
- Well adapted to the region’s climate.

Cons

- Irrigation is required for commercial production.

• Corn

Pros

- Grows 50% faster than regular farming, only takes two weeks to fully grow.
- Whiskey must be 51% corn to be called Bourbon.

Cons

- Needs a lot of space, can grow up to 7 feet tall.
- Needs 8-12 hours of sunlight daily.
- Barley, rye and wheat grow better in a northern climate, typically brought in for distilling using local co-ops.

• Ginseng

Pros

- Grows throughout Appalachia.
- Popular in Asian countries, a good source of economic income, grows easily.
- Boost energy, treat diabetes, lower blood sugar and help with high cholesterol.

Cons

- Black market is threatening the industry.

• Heirloom apples

Pros

- Suitable to the Appalachian climate.
- Highly adaptable.
- Appalachia has been home to over 300 species of apples, but production has fallen by 60 percent for the past 40 years. Reintroducing heirloom apples would increase biodiversity, reduce greenhouse gases, and decrease “food miles.”
- Demand is projected to increase 1% per year from 2020-2025.
- Many business opportunities (cider, vinegar, baked goods, etc.)

Cons

- Long term investment is required.

• Hemp

Pros

- Historical relevance to the region: Kentucky was the greatest producer of hemp in the US (¾ market) until after WWII when tobacco became the main cash crop.
- Fiber hemp can be used to create alternatives for other materials such as paper, plastic, concrete, etc.
- Uses ¼ of the land as trees when grown for paper.
- Strongest, most durable natural soft fiber on Earth.
- Flowering hemp can be used to make CBD which can be used as a holistic health treatment for many diseases prevalent in Appalachia.

Cons

- Gold rush mentality in the CBD industry.

•Hops

Pros

- Native to the region and can be grown to promote local breweries.

Cons

- Climate in the area causes more disease pressure.

• Log-grown Mushrooms

Pros

- Twice as much monetary value as competitors grown on artificial substrates.
- Twice as many health-promoting polysaccharides.
- Timber from forest farming is worth five times as much when used to grow mushrooms than the same log would be when sold for firewood.

Cons

- Outdoor mushroom cultivation is periodically labor intensive (hard work) during log cutting and inoculation, and later during fruiting.
- Unless the product can be transferred to the market quickly, refrigerated storage is required.
- Production is seasonal.

• Mulberries

Pros

- Grow wildly and quickly in a wide range of climates in soils.
- Leaves of the mulberry tree are the only food silkworms will eat, so there are multiple purposes for one crop.

Cons

- Trees require frequent pruning.
- Aggressive roots can cause damage to infrastructure.

• Ramps/Wild Leeks

Pros

- Grows throughout the Appalachian mountains.
- Sold online for \$20-40 per pound.
- Used in farm-to-table restaurants and wild leek festivals.
- Potential use as a cancer treating agent.
- Crops and ramps growing in the wild are able to sustain themselves without human assistance, allowing for more productive harvests.

Cons

- Increasing demand has led to the reduction of wild populations.

• Rhubarb

Pros

- Easy to grow.
- Can be planted in the Spring or Fall.

Cons

- Need cool weather to thrive.
- Leaves are poisonous.

• Rye

Pros

- Grow well in the northern climate.
- Used for distilling by local co-ops.
- Sorghum

Cons

- Grows well in KY, many different uses, good for diets in people gluten free, high nutritional value & antioxidants.

• Wheat

Pros

- Grow well in the northern climate.
- Used for distilling by local co-ops.

HEMP

Diseases	Mortality Rates in Appalachia	Mortality Rates in the Nation	Benefits of CBD
Heart Disease	204 per 100,000	175 per 100,000	Anti-inflammatory and antioxidative properties in CBD reduce risk factors like high blood pressure. CBD eliminates stress which in return lowers blood pressure and lowers heart rates.
Cancer	184 per 100,000	168 per 100,000	CBD helps treat side effects of cancer treatment such as: nausea, anxiety, depression, and insomnia. CBD also helps with chronic pain associated with cancer treatments.
COPD	53.5 per 100,000	42 per 100,000	CBD alleviates symptoms of COPD such as: shortness of breath, wheezing, chest tightness, and coughing. CBD helps with inflammation in the respiratory system which calms down the symptoms. CBD has a potent amount of anti-inflammatory properties.
Injury	52.4 per 100,000	39.5 per 100,000	Helps reduce inflammation on the achilles tendon, muscle tendons, minor sprains, and everyday aches. CBD allows for muscle recovery when muscles are sore. CBD can be used to ease the pain of arthritis. CBD has healing properties.
Diabetes	23.8 per 100,000	21.5 per 100,000	CBD has anti-inflammatory properties that reduces insulin resistance and moderates blood sugar.
Stroke	43.8 per 100,000	38.4 per 100,000	CBD can protect stroke patients from brain damage and help recover brain function in stroke patients. CBD can increase cerebral blood flow during stroke to help alleviate the aftermath of the stroke.

HEMP-RELATED BUSINESSES

Several businesses that Appalachian farmers could send their fiber hemp to are:

- **Bulk Hemp Warehouse:** Use hemp to create over 25,000 products.
- **HempWood:** Alternative to oak hardwood, uses ¼ of the land space.
- **Hemp Plastics:** Biodegradable plastic created from hemp and corn bioplastic.

HYDROPONICS

Hydroponics is a method of agriculture that recycles water and doesn't depend on soil fertility, adaptable both after strip mining and in times of climate change. Temperature fluctuations underground aren't as great and sheltered from extreme weather.

Cons

- Expense
- More supervision is required.
- Mistakes and system malfunctions affect plants faster, without soil acting as a buffer.
- Hydroponic gardens are affected by power outages.
- Requires better water.
- Waterborne diseases spread quickly.

Pros

- Water can be reused, so requires 20x less water
- Reduces nutrient leaching
- No pesticides.
- 20% less space needed.
- Complete control over nutrient balance.
- Less labor as tilling, cultivating, fumigation and mulching are not required.
- Growing year round
- Crops grow faster.
- Proven technology with high yields.
- Harvesting is easier.

ORGANIZATIONAL STRUCTURES TO DEMOCRATIZE THE ECONOMY

- **Common Future:** A network of leaders in Oakland, California rebuilding the economy to include everyone.
- **Community Foundations:** A tax-exempt charitable organization dedicated to the improvement of a given society
- **Sovereign Wealth Funds:** A savings pool built up by surpluses in government budgets
- **Investing Locally:** Investing in ourselves, including crowd funding, angel investors, and local banks as well as small business development and community supported enterprises
- **Land Trusts:** An organization taking ownership or stewardship over property such as the Land Trust Alliance
- **Cooperative Businesses:** A business owned and controlled by the people who use its products, supplies or services
 - “Cooperatives were useful for promoting the interests of the less powerful members of society. Farmers, producers, workers, and consumers found that they could accomplish more collectively than they could individually.”
- **Employee Owned Businesses:** A term for any arrangement in which a company's employees own shares in the company's stock. This broad concept can take many forms in practice, ranging from simple grants of shares to highly structured plans.
- **Community-Supported Agriculture:** A system in which farms are supported by subscribers within the community who pay in advance for produce and other agricultural products
- **Community Gardens:** People in a community come together to grow food on shared, community, public or donated land.

NOTE: See Handouts for Sources & More Info