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A Study of the Social, Cultural, and Environmental Influences on Appalachian Agriculture

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A STUDY OF THE SOCIAL, CULTURAL, AND ENVIRONMENTAL INFLUENCES ON
APPALACHIAN AGRICULTURE

By

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ABSTRACT

Appalachia, despite its rich history and abundant biological and cultural diversity, is commonly associated with a generalized notion of ignorance, resistance to progress, and "backwardness." This study aims to shed light on the socioeconomic, cultural, and environmental influences which have shaped the present food systems of Appalachia through a review of relevant literature. This history provides the necessary context to strategize a region-specific, socioeconomically and environmentally sustainable food system moving forward.

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INTRODUCTION

The portrayal of Appalachia in popular culture often revolves around the stereotypical “hillbilly” – poor, uneducated, and unwilling to participate in society. This reductive, fictionalized depiction of the region is ubiquitous. Throughout my childhood and adolescence, my family and their stories were the only positive representation of Appalachia that I can recall. My ancestors were Scots-Irish, settling in Appalachia over two hundred years ago, and my family has been rooted to the mountains ever since.

I was raised in the piedmont, close enough to see the Blue Ridge Mountains on the drive to school, and even there the contempt for Appalachians was pervasive. Nevertheless, I always felt a sense of pride in my family history, and I became particularly interested after my aunt presented her genealogical research at a family reunion my senior year of high school. Since then, I have loved to hear from my grandmother and her siblings about their upbringing in World War II era Appalachian Tennessee. Their mother was a schoolteacher who attended William and Mary College in the 1910s, and their father was a special officer of the N and W railroad who cultivated a shared garden plot with their neighbors; both were descended from hog and peanut farmers in Appalachian Virginia. Their stories paint a picture of ingenuity and cooperation that is too often absent from other accounts. The recent release of the film *Hillbilly Elogy*, based on a J.D. Vance’s popular memoir, renewed my motivation in dispelling the misconceptions about Appalachia and its people.

Examining the history of Appalachia uncovers the details which have been neglected by the popular narrative, providing a more sympathetic story for the people who have struggled through its exploitation. In *Ramp Hollow*, Steven Stoll warns that “we will fail to ask the right questions if we are deceived into thinking that some people have no history, that their poverty is inherent, its causes self-evident,” (p. 31). In reviewing this history, we see a pattern of dispossession which repeatedly stripped Appalachians of resources and agency, from the onset of colonization to the present.

The evolution of agriculture in Appalachia serves as a focal point in investigating the relationships between land, labor, and poverty. The development of Indigenous agricultural systems demonstrates the ability to satisfy the needs of growing populations without privatizing production or surpassing environmental limitations. The significance of communal land is consistent throughout the transitions brought on by colonization, commodification, and

industrialization. Access to land is essential for autonomy and social power; accordingly, dispossession of land is central to the processes which produced poverty and environmental destruction. Understanding these influences on the present state of Appalachia provides the context necessary to conceptualize and enact strategies to alleviate environmental, economic, and social distress.

AGRICULTURE

The agricultural history of Appalachia is similar to that of many parts of America. Its origins lie in the knowledge and practices of Indigenous peoples, transformed over time by the influence of European colonization. Indigenous practices developed hand in hand with the native plant species, with society and environment each shaping the other. This thorough ancestral knowledge of the landscape culminated in a long-lasting, sustainable dynamic of extraction and abstention, thrown out of balance by the commercialization of natural resources with the arrival of European colonists. To fully understand the processes which have produced the present food systems in Appalachia, it is necessary to understand the natural foundations of Indigenous agriculture, as well as the economic and cultural demands which prompted the shift away from these practices.

Indigenous Agriculture

Prior to contact with Europeans, the indigenous populations of Appalachia had formed complex and varied systems of food production over several thousand years. As archaeological and archaeobotanical technology has improved, more data has been collected which provides insight to the plants and domesticated cultivars grown in each region and era, as well as the practices implemented in transforming forested land for agricultural use. Around 5000 B.C., Indigenous populations began to establish deep shell and midden mound settlements within floodplains. Seasonal flooding and receding of floodwaters made these floodplain locations ideal for reoccurring settlement, and this cyclical human habitation provided ample soil disturbance to allow for colonization of certain floodplain species. Over time, the Indigenous groups which routinely occupied these locations differentiated between those plant species which were desirable and undesirable. Those species which were deemed useful, including marshelder, goosefoot, sunflower, and a species of *Cucurbita* - a gourd, were allowed to grow while the undesirable plants were discouraged or removed. Later, the desirable plants, or “quasi-cultigens”

as termed by Smith (1985), were deliberately planted in small plots within the settlements. This deliberate planting and replanting produced the selective pressures which began the process of domestication (Smith, 1985).

These selective pressures represent the competition between neighboring plants to reproduce. In marshelder and sunflower, enlarged seed size allowed for more rapid growth; for goosefoot, a reduction in seed coat thickness allowed for accelerated germination. These characteristics increased the likelihood that any individual plant would contribute to the next generation, and so on, until the advantageous characteristics were distinct enough to differentiate the domesticated and wild type plants. It is important to note that these changes resulted from biological adaptation to the planting of seed plots, and not through deliberate human selection. Archaeobotanical samples of marshelder, goosefoot, and sunflower indicate that true domestic cultivars appeared between 2000 and 1000 BC. Though classified as domesticates, archaeobotanical and anthropological evidence suggest that these species were not selected or cultivated with significant rigor until around 500 BC, when they became more important as food sources (Smith, 1985).

As populations increased, the need for consistent and reliable food sources prompted the intensification of domestic cultivation. Settlement patterns shifted to accommodate the habitation, food production, and food storage needs of the population. Archaeobotanical and anthropological data show an increase in land clearing activities, both by hand and by fire, and agricultural activities. During this time, up to around AD 200, food production systems emphasized increasing the planting area and harvest yields of nutritionally dense foods, including marshelder and sunflower, both high in fat content, and goosefoot, which is rich in carbohydrates. Planting, harvesting, and processing crop plants would have been a cooperative effort, using tools such as chert hoes and mortars for various jobs (Smith, 1985).

During the period between AD 250 and AD 1150, organized food production systems continued to expand, evidenced by improvements in tools used for production and processing, expansion of storage spaces, and continued selection of cultigens in archaeobotanical assemblages. The most important cultigen introduced to eastern North America during this period was maize, a plant native to the tropics which slowly gained importance in diet as selective cultivation processes enhanced nutritional value and yield. Tobacco, another tropical species, was also introduced to the area during this time. By AD 800, maize-dominated field

agriculture was widespread throughout river valleys, and by AD 1100, bean cultivars introduced to the region completed the maize-beans-squash triad now commonly associated with Indigenous agriculture. As these non-native cultigens adapted to the climates and growing conditions of the east, they continued to gain importance in diet, as evidenced by their expansive cultivation in outfields. Though these non-native species came to represent a substantial portion of the Indigenous people's diet, native cultivars – including marshelder, goosefoot, sunflower, and *Cucurbita* – remained significant as supplemental food sources grown in the infield. While technological and practical innovations continued, this general trend of crop emphasis persisted until the point of European colonization (Smith, 1985).

One of the most significant observations from early colonists was the Indigenous practice of “slash-and-burn” agriculture (Stoll, 2006). Though many colonists saw this practice as crude and primitive, archaeobotanical and anthropological data demonstrate the benefit of intentional fires to clear lands for field cultivation and encourage growth and productivity of fire-tolerant species (Delcourt et al., 1998). Due to a lack of written records, the introduction of deliberate fire-setting is uncertain, but it seems likely that Indigenous populations would have first observed the benefits of fire for fruit and nut yields of certain tree species brought on by wildfires. This likely precipitated the use of prescriptive burning for the purpose of forest maintenance. As we have learned through recent improvements in chemical analysis, burned plant materials can also improve soil quality, a conclusion that would have likely been drawn from the thriving pioneer species which emerge following forest fires. The combined soil-enriching and land-clearing benefits of prescriptive fire are recognized even today, dispelling the colonial misconception of this practice (Blethen, 2004).

When Europeans first visited the Appalachian region in the mid-1500s, Indigenous populations subsisted through the combination of maize-bean-squash-dominant, native-supplemental agriculture and hunting and gathering of wild species. This held true two centuries later, when Europeans began to settle Appalachia at a more significant rate. As the coastal and lowland regions of the first colonies became more densely populated, newer arrivals headed west to the mountains. Though English immigrants constituted some of the Appalachian colonists, Scotch-Irish immigrants represented the most substantial proportion of early settlers. The European's practice of slavery also brought African people to Appalachia, though the practice

was less common in the area due to the growing conditions and relative lack of wealth of European settlers compared to the earlier lowland settlers (Blethen, 2004).

Transition to Livestock Agriculture

The cultural landscape of Appalachia during this time produced a unique agricultural system. European and African settlers adopted many Indigenous practices of cultivation and hunting; likewise, they brought with them knowledge, technology, and species from their homelands which they shared with the Indigenous populations. European guns and Indigenous hunting techniques and knowledge of the land were traded, forming the method which became common among all groups regardless of race. Europeans introduced wheat, oats, rye, and peas to the region, and adopted the Indigenous cultivars of squash, beans, and corn (Blethen, 2004). Europeans also learned from the Indigenous their practice of “slash-and-burn,” or swidden (Stoll, 2017). Most significantly, Europeans brought with them the practice of livestock herding. Many of the Scotch-Irish immigrants had practiced livestock herding in the Old World, and brought cattle, hogs, and sheep with them to the mountains. The livestock were allowed to range freely and were driven to pasture in the summers and fed corn in the winters or to fatten them before being driven to markets. Farmers left the majority of their land forested well into the nineteenth century, taking advantage of the resources for animal fodder, game, nuts, fruits, and medicinal plants including ginseng (Blethen, 2004; Salstrom, 1994a).

Livestock were the most important market commodity produced in antebellum Appalachia, though corn, tobacco, and other crops were traded as well. The livestock raised in central and southern Appalachia were driven into the lowland regions of the South, however, the market demand exceeded Appalachia’s production by the mid-nineteenth century (Salstrom, 1994a). Around this time, agriculture in the region shifted away from markets back to subsistence. After the Civil War, industrialization and waning finances pushed many farmers into work outside of the farm. Stoll emphasizes the impact of Reconstruction era legislation on both Black farmers and poor white farmers. Beginning in the deep south, and soon spreading throughout the region, counties enacted policies of enclosure, “requiring that domesticated animals be fenced from grazing in the open woods,” (Stoll, 2017, p. 187). Many poor farmers of the backcountry, Black and white, depended on forest resources as a major source of fodder for their livestock, generally only supplementing with corn or other crops when necessary. These policies were primarily driven by race; those in power were resolved to maintain the structure of

slavery, adjusting to federal law by coercing freedmen into tenancy or wage labor. In many cases they succeeded, benefitting doubly from the additional labor of poor whites (Stoll, 2017). This act of enclosure demonstrates the importance of communal land in preserving the autonomy of the lower class and, inversely, the capitalist interest in revoking it. Those who could afford it maintained their farm for family use, using outside work as the primary income; others lost or abandoned their lands and moved to mine towns or other urban centers (Salstrom, 1994a).

Effects of Industrialization

From the beginning of industrialization into the first decades of the twentieth century, Appalachian agriculture revolved primarily around family farming. The Great Depression left many workers of industrialized Appalachia unemployed, and farming intensified out of necessity during this period. In the years leading into the Depression, torrential rains followed by severe drought damaged soils in much of the region, resulting in poor yields and leaving many smallholders hungry. The economic recession caused market values for commodity crops to plummet; farmers struggling to stay afloat intensified their production, driving prices even lower. The 1933 Agricultural Adjustment Act, a policy of the New Deal, aimed to boost market values by limiting production of key commodities, including corn and hogs. Subsidies were offered to farmers who chose to participate in reducing their production, however these subsidies were determined with market production as the main concern. For farmers that produced primarily for home consumption, the cost of replacing lost production outweighed the benefit of participating in the allotment (Salstrom, 1994b).

In 1936, the Supreme Court ruled that the original Agricultural Adjustment Act was unconstitutional. This prompted a transition in legislation of the “second New Deal” away from surplus regulation, focusing instead on regional and local efforts to improve the quality of the land. In Appalachia, soil depletion and erosion were the key factors impeding agriculture. The Tennessee Valley Authority determined that nitrate fertilizers, used for row crops, should be replaced by phosphate fertilizers to encourage the growth of grasses and legumes. These crops replaced more soil intensive row crops and provided pasture and feed to support the livestock industry. The idea spread throughout Appalachia, initiating a shift towards hay and livestock which intensified in the decades following. Though the new policies were an improvement for Appalachian agriculture as a whole, many small farmers and unemployed laborers in the region continued to struggle. Larger farms had an advantage over smaller farms; they had more

resources to successfully adjust to acreage allotments and received more subsidies, allowing large operations to buy out disadvantaged neighbors (Salstrom, 1994b). Thus, the pattern of dispossessing local smallholders continued.

As farmers and residents throughout Appalachia sold off or abandoned their property, consolidation of land under industrial agriculture and extraction corporations progressed. Many Appalachians – at least 700,000 – left the region throughout the 1940s in search of employment. Those remaining were driven deeper into poverty, and very little government intervention took place until the establishment of the Appalachian Regional Commission in 1965. Even then, the emphasis on industrial extraction and agriculture did little to improve the circumstances of the working class. The ARC's initial report on the region presented the widespread poverty and ecological destruction at face value, neglecting consideration of the processes which produced these conditions. Their solution was to invest in large-scale development, including highway construction and commercial forestry operations, among others. The ARC's judgement was echoed by the “get big or get out” agricultural policies of Nixon's presidency. The result was intensified consolidation of land, with a 1981 study reporting that 75 percent of the 20-million-acre survey area was under the ownership of absentee individuals and corporations (Stoll, 2017). This is not to say that all smallholders were pushed out, however, small farm operators increasingly depended on off-farm work as their primary income. The most successful farm operators in the region are those that specialized in particular commodities, such as livestock, tobacco, and Christmas trees. Additionally, there has been an increasing trend in farms offering recreational or other service activities, such as fee fishing or leasing to hunting clubs. Due to the ecological factors of the region, Colyer (2001) argues that Appalachia “will continue to depend on animal agriculture, with specialty crops, recreational enterprises, and other tourist/service related activities growing in importance as sources of additional income,” (p. 9).

Appalachia had a long history of supporting populations with ecologically and socially sustainable cultivation and extraction, from the millennia preceding European colonization into the early years of America's nationhood. Beginning in the period of Reconstruction and industrialization, government policies and corporate influences steadily transformed the agricultural system of Appalachia. The smallholder farms and communal resource access which had once supported the whole of the region were replaced with corporate industrial systems designed to maximize profits over equity or quality of life. Appalachians whose predecessors

survived the ecological and economic collapse of the region were forced to adapt to a system devoted to market production and punished for their inability to do so.

ECONOMY

The valuable natural resources and fruitful lands of Appalachia attracted European interest from the earliest expeditions forward. As the lowland regions of the British colonies filled with settlers through the eighteenth century, newcomers pushed further westward into the mountain territories of the Cherokee and other Indigenous nations. This appropriation of Indigenous lands by European settlers constituted the first of what would be many acts of dispossession in Appalachia. The Scots-Irish in particular settled the Appalachians heavily, many arriving in Philadelphia and migrating west, then southward along the Appalachian ridge. They brought with them the settlement pattern of Ulster, made up of “*clachans*, clusters of a few farm households usually related by kin, and dispersed single-family farms,” (Blethen, 2004, p. 25) This pattern accommodated both their infield-outfield system of crop planting and their practice of free-ranging livestock, including cattle, sheep, and hogs. Blethen argues that this arrangement in tandem with the geography of the region contributed to the delay in urban development.

Europeans also introduced slavery to Appalachia, though to a lesser extent when compared to the lowland areas of the colonies. This established a “triracial society” with all the challenges one might expect at the convergence of three distinct cultures under the influence of a European-imposed racial hierarchy. Even still, the proximity of these ethnic groups promoted the intercultural exchange characteristic of the Appalachian frontier. For instance, the Indigenous populations had no history of livestock husbandry, but they later adopted the practice from Scots-Irish settlers. Another such example is that of game hunting. Indigenous peoples shared their hunting techniques and knowledge of the land, and European guns provided increased efficiency of the hunt (Blethen, 2004).

Extraction

Hogs were particularly important for the Appalachian economy, as the region became a significant supplier for eastern markets. Two of the most important extractive products of the antebellum period were salt and timber. Salt was used for meat packing in the region, while timber was desired both domestically and abroad for a number of uses (Blethen, 2004). Surplus crops, furs, wild ginseng harvests, and other forest products were also traded to merchants in

exchange for imported fabric, tools, and other goods, before being sold in regional and global markets. Ginseng, which is native to the Appalachians, was in high demand from international markets, particularly China (Salstrom, 1994a). This early and significant interaction with regional and global markets contradicts the idea of an economically isolated region.

After the Revolutionary War, new states began granting and selling Appalachian lands which had been banned from settlement under British rule, an act of both defiance of the recently ousted government and necessity of accumulating funds and rewarding veterans. Over three-quarters of Appalachian land was claimed by 1800, much of it by absentee owners. Some owners sold lands to settlers at a profit, while others rented lands to tenants or farmed the land themselves. The terms of most tenancy arrangements precluded the tenant from accumulating enough wealth to buy the lands they tended (Blethen, 2004). Due to distance and perceived lack of value of the land, many absentee owners never visited or developed their holdings. It was common for settlers of the region to build homes and cultivate fields on lands owned by someone else, in many cases without the knowledge of the owner nor the settler. This “squatter” settlement complicated claims, as settlers could dispute ownership of lands that they inhabited and improved for an adequate period of time (Stoll, 2017). These “squatter” settlers regularly bought, sold, or rented these lands to tenants within the local market, until or unless ownership was reclaimed by absentee owners. Nevertheless, the earliest landowning families passed down disproportionately large tracts of land to their descendants, concentrating land ownership such that five families owned 41% of Harlan County, Kentucky’s assessed acreage in 1860, reaping the profits of their own production as well as that of their tenants (Pudup, 1990). This distribution of land ownership and concentration of wealth in demonstrates the beginnings of social stratification and dispossession in Appalachia.

In the latter half of the nineteenth century, the agricultural economy of Appalachia was steadily replaced by resource extraction. Though farmers in the mountains grew the same crops as their lowland counterparts, the geographical characteristics of the land required more effort for less productivity (Pudup, 1990). Settlers depended heavily on the forest goods, and the abundant hardwoods which had long been used for local construction became a vital export as demand for construction materials and furniture veneer increased in both domestic and foreign markets. Timber extraction also provided fuel in the form of charcoal for salt brine boilers and iron furnaces, until technological developments facilitated the use of coal. As the salt industry

declined, the coal and iron industries further expanded to fill the economic void. More significantly, industrialization and the increased transportation capacity provided by railways produced a huge demand for the bituminous coal found in vast quantities in the Appalachians (Lewis, 1999). Lumber and coal companies eagerly descended on the region, buying up property from absentee owners and manipulating smaller owners into selling for prices far below their value (Stoll, 2017). The enhancement of manufacturing technology and expansion of access to valuable natural resources brought about by industrialization triggered intensive absentee investment into these industries, expanding corporate ownership of the land and further dispossessing locals of the means of production.

Exploitation

The rapidly growing demand for Appalachia's natural resources required an enormous labor force to carry out each step of extraction and manufacture. The coal industry offered relatively high wages for miners, attracting both newly arrived immigrants and locals searching for employment. Due to the relative lack of development in central Appalachia, coal companies built support infrastructure around the mining facilities to accommodate the influx of miners and their families. The extent of this development varied, with some operations building only the simplest housing, and others expanding into towns complete with churches, stores, and police forces. In any case, these unincorporated towns were fully enclosed and privatized; all profit made from production, rent, and even the general store went to the company (Lewis, 1999). Companies avoided paying livable wages to workers in a number of ways, keeping them dependent on the services provided by their employer. Arguably the most insidious of these strategies was the use of company-issued "scrip" in place of federal currency to pay wages. Rent and other expenses were deducted from wages, and the remaining scrip was used to buy food and other products from company stores. For families, these reduced payouts were often inadequate, and food and other costs were "charged against future labor, with interest." Through this deprivation or through explicit compulsion, companies coerced workers and their families into planting gardens – off the clock, of course. This effectively placed all members of the family under company employment, necessitating additional unpaid labor to supplement the already discounted wage payouts (Stoll, 2017). Companies maintained control of the labor force by ensuring that access to necessities was dependent on the continued compliance and labor of workers.

Rising poverty and the decimation of natural resources in Appalachia put residents at a disadvantage which only worsened during the early decades of the twentieth century. Workers unionized under the United Mine Workers of America, and strikes became a common occurrence as companies demanded increased labor without an increase in wages. Companies leveraged their control of the food supply and access to land in an attempt to force workers back into the mines. However, a number of miners and allied locals established stands of corn and beans within the hollows and “folds of the mountains,” and hunted hogs, squirrels, and other wild animals to compensate for the loss of livestock retained by the companies. This allowed workers to strike for weeks or months on end, exemplifying the political and economic power inherent in control of land and access to its products – precisely those assets which companies had expropriated from laborers (Stoll, 2017). Sadly, this lone advantage was lost to a series of natural and economic disasters. The spring of 1927 saw record-breaking rainfall, eroding the topsoil and clay – made vulnerable by the near-total stripping of forests by the lumber industry – and severe droughts beginning in 1930 further depleted the capacity to grow food (Salstrom, 1994b). This environmental destruction combined with the economic impact of the Great Depression left many Appalachians impoverished and hungry.

Neglect

The effects of industrialization on Appalachia – dispossession of land, decimation of the ecological base, socioeconomic marginalization of industrial laborers – left the region particularly vulnerable to the environmental and economic hardship of the 1930s. The New Deal of 1933 prioritized the recovery of commodity markets at the nation-wide level, employing a general strategy of production limitation, or allotment, in hopes of increasing market value. The Agricultural Adjustment Act set limits on the production of a number of commodities. Those which most significantly affected Appalachia were corn and hogs. Unlike the other commodities, the corn and hog allotments could not be adopted individually, meaning that farmers had to reduce production of both hogs and corn to be eligible for compensatory payments. These payments were based on the market values prior to the AA Act; since hogs and corn were produced primarily for subsistence in Appalachia, the true value of the lost production would be the market price after the AA Act, rendering the compensatory payments inadequate. As participation in the corn-hog program was voluntary, most Appalachian family farmers opted not to enroll (Salstrom, 1994b). Small mountains farms did not produce market commodities at a

level high enough to receive any substantial benefit from the AA Act, and many farmers who did participate were disadvantaged for doing so.

The acreage limits set by the AA Act and the later revision to the New Deal, termed the “second New Deal,” stimulated the development of chemical fertilizers to increase yields. The second New Deal also brought about a shift in emphasis, away from markets and to the land itself. Soil erosion and depletion was widespread throughout Appalachia, and agronomists who studied the region determined that reforestation would be beneficial for both problems. Planting trees provided direct protection against erosion by binding soils between their roots, and trees which produced fruits, nuts, and seeds attracted animals which would fertilize the depleted soils. Additionally, the Tennessee Valley Authority began distributing phosphate fertilizer to encourage the growth of grasses and legumes, which would restore soils that row crops had depleted (Salstrom, 1994b). These efforts, tailored to the region, proved much more beneficial than the allotment programs. Nonetheless, many of the economic problems remained unsolved.

Though industrial work resumed after World War II, increased mechanization of the coal industry displaced much of the labor force. At least 700,000 people left Appalachia during the 1940s, and poverty in the region persisted for decades with no meaningful aid from the government. The Appalachian Regional Commission, formed in 1965, took a top-down approach to mitigating poverty. The idea was that “highway construction, commercial forestry, hydroelectric dams, and incentives for cattle ranchers would be good for everyone who lived in the mountains,” (Stoll, 2017, p. 260). Unsurprisingly, this strategy was not particularly successful. Between 1960 and 2000, the poverty rate fell only 4.2 percent, and the unemployment rate remained relatively stagnant after 1970. Though the ARC did increase the number of jobs, industry profits were collected by absentee investors, providing no material benefit to workers and leaving the region ravaged once again by extractive industry (Stoll, 2017).

Since the mid-nineteenth century, the economy and culture of Appalachia has been shaped by the exploitation of labor and natural resources by absentee shareholders. The common portrayal of Appalachia as inherently adverse to progress disregards the evidence provided by history. The people of Appalachia were continually stripped of their autonomy and compelled to destroy the lands they inhabited to survive under the American capitalist regime. These impacts cannot be reversed by promoting the very industries which contrived them.

FOOD SYSTEMS AND SUSTAINABILITY

Appalachia as we know it today is often reduced to the widespread poverty and food insecurity produced by nearly two centuries of persistent exploitation and dispossession. The Appalachian Regional Commission attempted to improve conditions by encouraging industrial development and producing new employment opportunities. However, decades after the establishment of the ARC, poverty rates decreased only slightly (Stoll, 2017). Food insecurity remains a significant issue in the region, and the environmental damage caused by industrial extraction continues to harm the health and livelihood of Appalachians (Chapman & Perkins, 2020; Stoll, 2017). In order to support the current population of Appalachia and prepare for expanding populations and urbanization of the region in the future, it is crucial to devise a food system that will be sustainable for both the land and society. Beyond consideration of the present issues precluding a socially and environmentally sustainable system, looking to the successful strategies of the past will provide insight into possible solutions.

Environmental Awareness

Indigenous populations in Appalachia are one such example of success, with the earliest inhabitants arriving around 8000 BC and subsisting primarily through hunting and gathering until approximately 800 AD, when agriculture became dominant (Gragson & Bolstad, 2006). Though the avoidance of significant environmental damage might be explained by lower population sizes and lack of industrial technology, Smith (2009) argues that the specific predation strategies of Indigenous societies was a significant factor in the conservation of essential prey species. In particular, Smith contends that the reproductive capacity and inaccessibility of breeding populations of white-tailed deer, fish, and migratory waterfowl contributed to the resilience of these species despite persistent hunting. By primarily relying on prey species that reproduced quickly and abundantly, Indigenous societies successfully sustained their members through exponential population growth without driving important food sources to extinction.

Additionally, the Indigenous practice of prescribed burning helped to maintain the diversity and productivity of Appalachian forests. Burning the underbrush of the forests encouraged the growth and success of fire-resistant tree species and served to clear and fertilize land for cultivation. The practice also attracted prey species, including white-tailed deer, which rely on the shrubs and bushes which emerge in the aftermath of a fire (Hayashida, 2005; Smith,

2009). Lake et al. (2017) emphasize the importance of traditional knowledge, passed down through generations of Indigenous groups, in forming a deeper understanding of the ecological and social consequences of fire. Cooperation between western planners and Indigenous groups with traditional knowledge of the ecosystem will encourage the development of management systems which addresses both the social and environmental concerns for the future.

While prescriptive fire and conscientious game hunting have the potential to provide environmentally sustainable food sources, it is clear that these initiatives are insufficient to support modern populations. Furthermore, analysis of land use changes and urban development trends suggest that the growth of urban centers in southern Appalachia will intensify in the coming years. Conversion of forested land to accommodate urban sprawl will exacerbate the deterioration of biological diversity, water quality, and air quality which already present issues in the region. The increasing immigration of affluent northerners attracted by the relative isolation and mountain scenery – the gentrification of the region – has in recent years spurred the reforestation of previously agricultural lands for recreational use, and this trend is predicted to continue (Gragson & Bolstad, 2006). These deforestation and reforestation processes, alongside rapidly growing populations, will carry on the tradition of dispossession and suppression of agricultural activity in Appalachia unless changes in policy and social emphasis on conservation interfere with the present trajectory.

Accessibility

In addition to environmental concerns, conceptualization of sustainable food systems must also consider social responsibility and economic resilience (Pierce-Quinonez, 2012). Many have suggested that intensification of local food systems will address each of these factors. This idea relies on the assumptions that local food systems will reduce emissions from transportation, increase access to healthy foods, and encourage local economic growth. Mariola (2008) argues that the environmental sustainability of local food systems is debatable when considering fossil fuel emissions. Though the foods grown and sold in local markets will travel a much shorter distance from farms to households, the small scale of production and distribution means that each unit of food will have a higher carbon footprint than those transported on a much larger scale. This effect may be reduced with partnerships between local producers and regional distributors, and these partnerships would also promote the economic resilience of local food systems (Mariola, 2008; Marsden, 2000). In a more radical approach, Mariola suggests moving

away from market systems altogether in favor of urban and community gardens. Increasing the number of people producing their own food would significantly reduce the polluting effects of food transportation. On the other hand, there may be greater opportunity for local producers to incorporate sustainable farming practices, including the elimination of chemical fertilizers and implementation of conservation tillage. This tillage technique helps to mitigate soil erosion by limiting exposure of topsoil to wind and rain (Best, 1998). Considerations of environmental sustainability must consider the range of processes involved in food production, from seed to table.

With regard to food security, increasing local production seems like a logical advance. However, in practice many local food systems cater to the demands of relatively affluent consumers, prioritizing the economic viability of local production over accessibility (Chapman & Perkins, 2020). In order to compete with industrial producers, local food producers often emphasize the quality of their products and charge higher prices than supermarket chains (Marsden, 2000). Though carving out a niche in the market is important in achieving economic sustainability, this means that local foods are frequently even less accessible to those struggling with food insecurity. Furthermore, Bletzacker et al. (2009) emphasize the relationship between food insecurity and lack of reliable transportation. Even if local foods are priced comparably to supermarket foods, travelling to farms or farmers markets to buy them may not be feasible. In any case, food insecurity in America is not the result of limited supply but is rather the product of neoliberal policies gutting social welfare programs in favor of reducing corporate and personal taxes. While local food systems may be beneficial in some ways, they cannot replace government assistance in terms of food insecurity and may serve to divert pressure from the government to reinforce social welfare (Perkins, 2012). Though local food systems have the potential to improve the quality of food in the region, the only adequate solution for systemic food insecurity is to expand government assistance.

Transitioning to a more sustainable food system will require a multidimensional approach, balancing considerations of environmental, economic, and social factors. Application of traditional agricultural and resource management techniques will be useful for reducing dependence on mechanical and chemical agricultural implements. For instance, farmers that previously plowed and treated fields with chemical fertilizers may find that prescribed burning could replace the need for both. Encouraging cooperation in community farms or cultivation of

home gardens will help to reduce environmental impacts and provide economic benefit. Local food systems have the potential to benefit local economies and mitigate environmental destruction. In Appalachia, the establishment of communal gardens and, more importantly, the expansion of social welfare programs will be essential first steps in alleviating the disadvantages caused by continual exploitation.

CONCLUSION

The repeated dispossession of land, exploitation of labor and natural resources, and neglect of displaced and disadvantaged people has produced the Appalachia of today – a region devastated by economic and environmental collapse. Restoring communal access to land and agency of local residents in environmental management will aid in improving environmental and social conditions. However, it is most essential to reject the fictionalized perception of Appalachia which allows corporations and the government to pass the burden of suffering onto those affected by their negligence.

A “culture of poverty” as depicted by Vance, among others, does not exist. The people of Appalachia inherited the circumstances shaped by its history. In building a better future, Appalachians should receive aid regardless of a potential return on investment. Stoll states that “the brutality of enclosure will only cease when we cease to regard people and landscapes as instruments of wealth,” (p. 288). We must shift the perception of Appalachia away from either a source of profit through industrial extraction or a sink of funds through government aid. The wellbeing of Appalachia and its people should not depend on profitability.

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