

Article

Land Fragmentation and Heirs Property: Current Issues and Policy Responses

Kurt Smith *  and Frederick Cabbage * 

Department of Forestry and Environmental Resources, North Carolina State University, Raleigh, NC 27695, USA

* Correspondence: kwsmith@ncsu.edu (K.S.); cabbage@ncsu.edu (F.C.); Tel.: +1-919-513-2573 (K.S.); +1-919-513-2511 (F.C.)

Abstract: Land fragmentation continues to be a challenge throughout the world, the United States, and particularly in the rapidly growing Southeast, as well as every state with a metropolitan area that abuts rural lands. With a United States population expected to grow to more than 500 million by 2060, it will present exceptional challenges for planners and policy makers to preserve important agricultural lands for farms and forests to provide both food and fiber, as well as to provide a host of ecosystem services and enhance the quality of life for our growing population. These issues of fragmentation are extremely substantial for African American, other minority, and limited-income landowners in the U.S. South, who often lack wills and have lands that are broken up into small parcels, or have divided ownership rights in one parcel, when passed on to heirs. Existing efforts can be expanded to provide tools and incentives for the owners of heirs property and other working lands to preserve them, and state and municipal planners will need to promote development plans and practices thoughtfully and strategically in order to prevent the projected loss of nearly 18 million acres of working lands by the year 2040.

Keywords: land fragmentation; heirs property; socially disadvantaged landowners; legal instruments; state laws; federal programs; landowner outreach



Citation: Smith, K.; Cabbage, F. Land Fragmentation and Heirs Property: Current Issues and Policy Responses. *Land* **2024**, *13*, 459. <https://doi.org/10.3390/land13040459>

Academic Editor: Dingde Xu

Received: 4 February 2024

Revised: 29 March 2024

Accepted: 2 April 2024

Published: 5 April 2024



Copyright: © 2024 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

1. Introduction

Land fragmentation continues to be a global issue, with more than 60% of the world's population expected to be living in areas classified as urban by 2030 [1]. This continual population growth presents challenges for rural and agricultural lands worldwide, causing pressure for development and land fragmentation [2]. It also degrades natural and semi-natural habitats in formerly connected ecosystems in areas that continue to urbanize into existing rural areas in Europe and other areas around the world [3].

The purpose of this study is to identify some of the main drivers of land fragmentation in the United States, especially for heirs property. This includes the historical context, policy instruments for remediation, and other improvements in the legal architecture and planning efforts within the 50 states. It will also serve to suggest areas for further remediation, advocacy, and some areas for further research in the policy arena relating to land fragmentation for heirs property in the United States.

In the United States, land use pressures have continued to expand into formerly wild and rural areas, leading to a decline in productive agricultural land and forest cover, which is expected to continue [4]. These issues of land fragmentation and of land tenure loss are extremely acute for African American landowners in the U.S. South. This compound issue has been linked to land loss through intestate inheritance for Black landowners, who often are forced to subdivide property among multiple owners without wills, which are intensified by problems of gentrification as well [5].

The connection of general land fragmentation and land loss by African American and other socially disadvantaged landowners in the United States has become a pressing issue

that has received considerable attention by policy makers, disadvantaged communities, researchers, public officials, nongovernment organizations (NGOs), and of course African American and other minority communities. African American landowners have experienced a land loss of about 90% between 1910 and 1990 [6]. This has occurred in parallel with the continuing decrease in rural farm and forest land as the United States population has increased and urban and exurban land areas have expanded.

This issue of systemic land loss in the U.S. and drastic land loss by African American and other disadvantaged landowners is a crucial policy problem that bears more investigation and analysis of possible policy responses to stem these losses and protect more rural land for agriculture and forest production, wildlife and biodiversity, water quality and quantity, other ecosystem services, and amenity values. For African American owners, land loss can be attributed to financial pressures, racial discrimination, bias in government programs, ownership and inheritance issues, and social factors.

2. Materials and Methods

As appropriate for this Special Issue on Socio-Ecological Transformations, this review employs social science research and analysis methods and scholarship to examine land fragmentation and heirs property issues. Specifically, we use a policy process model for our research approach and application in this paper to examine the extent of these factors for African American landowners in the U.S. South in the context of land fragmentation and loss in general. Drawing from Anderson [7] and Cubbage et al. [8], the policy process includes:

- (1) Identification of problems, issues, and agendas;
- (2) Formulation of acceptable courses of action to resolve issues;
- (3) Adopting improved policies to solve problems and issues;
- (4) Implementing those new policies;
- (5) Evaluating and improving their success.

Using that policy process cycle, we examine the causes of systemic land fragmentation and of land loss for African Americans, along with possible solutions. Note that our review here follows this policy process method in its coverage and headings, which are adapted to specifically suit the issue and possible responses to fragmentation and heirs property. This policy process cycle provides a framework to analyze many issues and infers that one can identify issues, consider alternatives, select and implement a new policy, and evaluate its success. Of course, in reality, the issues are very complex and multi-dimensional, as are the plethora of alternatives that can be used to improve the status quo and the process of successfully implementing them. Indeed, entire books cover public policymaking and policy processes, covering the complex interactions within this prototypical policy process paradigm. Public policymaking books also cover a variety of approaches to study public policy, such as political systems theory, group theory, elite theory, and institutionalism [7].

The policy process theory above infers that there are individual issues that have one best solution. In practice, diverse problems and history interact simultaneously to create major systemic social and political issues, which may be amenable to solution, or may be intractable. In practice, then, one must deal with complex problems and slowly aim to separate and improve various components of those problems at the same time. This complexity in policy analysis and the policy cycle occurs with the issue of land fragmentation and heirs property as well. These two intertwined issues are caused by a mix of economic, social, cultural, and ecological components. So, one must examine many related problems and issues and develop many complementary responses and solutions in order to improve the current unsatisfactory status quo.

We will analyze these factors as they relate to land fragmentation and heirs property in this paper. In particular, we examine the issues of “heirs property”—where Black or other landowners may die without a will (intestate), causing land to have unclear multiple ownerships or be subdivided into small ownerships; owners may be forced to make a sale

to resolve ownership problems, or illicit deals may occur whereby some owners are literally disenfranchised of their land.

This paper examines the policy issues of racial bias in federal farm programs, discrimination lawsuits that have mandated reform, and implementation problems achieving those mandates. It also reviews the issues of and possible responses to improving heirs property problems, Native American heirs problems, land fragmentation drivers, legal land protection instruments, and education and outreach possible to help redress these issues.

The methods for this paper rely on research and the legal, government, and popular literature that discuss land fragmentation, government laws and programs, institutional racism, heirs property, and possible solutions and reforms. We draw from the scientific and government literature for much of the background and findings about land fragmentation, government programs, and legal scholarship. We use summaries of court decisions and internet references regarding current outcomes of efforts to deal with federal programs, as well as references of laws and applications for heirs property policy alternatives and responses. We synthesize this literature and practices to provide insights about a variety of courses of action and policies to improve the ongoing problems of fragmentation and the dire issues of land loss for African American and other socially disadvantaged landowners and communities.

3. Policy Issues: Land Fragmentation, Discrimination, and Heirs Property

3.1. Land Fragmentation

Land fragmentation is prevalent globally as society continues its shift from large rural populations toward both urban and exurban living. Technology and genetics have helped produce yields in agriculture that are unmatched in history and enable us to do much more with less labor and land, up to a point. In North Carolina, for example, only 1.8% of the population is still involved in agriculture, freeing up some 80% of the workforce to pursue other things and migrate from rural areas [9]. While technology might appear to offer more rural land for development, the risks of climate change and much worse weather impacts on farming, loss of soil productivity with intensive agriculture, burgeoning global food needs, and harm to rural social systems augur for considering the precautionary principle [10] to avoid loss of productive farm and forest land.

Scientific and social advances have prompted the workforce to move into new service sectors such as technology, health, and financial sectors, rather than rural agriculture, grazing, and forestry. However, while the modern U.S. workforce is migrating to urban areas and counties, there is a new desire for families to live farther away from their place of work, causing urban sprawl around both major and medium-size urban areas and select rural towns. The U.S. Census Bureau now reports an all-time high average commute to work of 30 min (one way) [11]. For gasoline vehicles, for every tank of gas that we purchase for those commutes to work, we fuel the highway trust fund that builds more roads and enables workers to live further from work and into land once used for farming, ranching, and forestry. Over the last 50 years, the United States has lost 20% of prime agricultural land (farm and forest) largely because of a well-funded highway system that has added some 50,000 miles to the interstate system and continues to grow, providing pathways to new development scattered across the landscape [12]. Electric vehicles (EVs) promise to reduce this impact somewhat, but they too are taxed directly to build and maintain highways. EVs remain a small share of total vehicle sales in the United States, and urban sprawl may continue regardless.

3.2. Minority Landowner Discrimination

These issues of population pressure, movement to urban and exurban areas, and land fragmentation are exacerbated by historical racism in the Jim Crow era in the South and associated discrimination in land tenure. Discrimination and racism are the largest and most divisive issues in U.S. history, so it is virtually impossible to summarize them in

a paragraph, but some explanation is constructive to illuminate related heirs property problems. A succinct explanation of Jim Crow laws states that [13]:

“Jim Crow laws were a collection of state and local statutes that legalized racial segregation. Named after a Black minstrel show character, the laws—which existed for about 100 years, from the post-Civil War era (1865) until 1968—were meant to marginalize African Americans by denying them the right to vote, hold jobs, get an education or other opportunities. Those who attempted to defy Jim Crow laws often faced arrest, fines, jail sentences, violence and death.”

The Jim Crow era in the South treated the Black and White races differently by segregating them in every way possible, from restaurants and stores to schools and housing. Along with this went separate and disparate access to legal help, agricultural cost share programs and expertise, price support programs, and a host of things which contributed to the burden of and the eventual loss of African American land in the South [5,14]. This legacy had innumerable adverse effects for African American landowners, and indeed the effects are more enduring, including complete loss of their land, and are perhaps harder to redress than “less” difficult sports, social, or employment discrimination.

Per the current U.S. Department of Agriculture (USDA) definition, socially disadvantaged landowners are those landowners whose members have been subjected to racial or ethnic prejudice because of their identity as members of a group without regard to their individual qualities [15]. Land tenure and institutional problems with these socially disadvantaged populations “. . .include African American, Native American, Hispanic/Latine, Alaskan Natives, Asians, Hispanics, and Pacific Islanders” [16].

Many of these African American and other landowners obtained their often less desirable lands as areas left over from the settlers or after wars and faced pervasive socioeconomic challenges. Many of the African American farmlands now consist of heirs property, where their larger tracts are either divided into many smaller parcels as they are passed through generations or may have one single property devolve into having many heirs as owners. Native American common lands also face pressure for development, fossil fuel or mineral extraction, recreational development, or division into individual ownership [17–19].

Bias in federal farm support programs in the Department of Agriculture has contributed to these problems, with the Department of Agriculture settling major lawsuits demonstrating racial bias in farm program outcomes, loss of civil rights, and institutional discrimination in their allocation of funds for African American landowners in two successive lawsuits of *Pigford v. USDA* [20–22]. Similar discrimination and a settlement against American Indian farmers and ranchers were also decided in the *Keepseagle v. Vilsack* lawsuit in 2011, and for Latine farmers in *Garcia v. Vilsack* in 2009. Exact estimates of USDA damages paid to settle these lawsuits are uncertain, but USDA provided at least \$3.2 billion in payments and other relief to ethnic minority farmers to settle these lawsuits [23,24]. Complaints from African American farmers documented that they were denied assistance and loans and forced to wait longer for approvals. In some cases, this led to Black farmers losing their land. The allegations were borne out through investigations and ultimately settlements in court in the two successive *Pigford I* and *II* lawsuits.

In fact, the USDA average loan amount for African American farmers was around \$24,000, compared to White farmers who averaged \$88,000. Average cost share programs showed a similar disparity, with African Americans getting an average of \$4000 versus \$9500 for all other farmers. The settlement of these cases totaled \$1.25 billion. Initially, only a small amount of the settlement money was made available in the 2008 farm bill, and the final amount was made available in 2010; claims funded by various federal appropriations continue to be made and awarded as of 2024 [23]. The recent Farm Bill of 2018 sets aside a portion of funding for its Socially Disadvantaged Farmers and Ranchers Program to provide funding for loans, insurance, conservation cost share programs, and ongoing research into the issue [24].

3.3. Land Fragmentation Drivers

Today's workforce is markedly different from 50 years ago. Yesterday's workforce was relatively willing to relocate anywhere to get a better job and to realize improved income. Today, many do their work from home two or three days a week, and they care passionately about their sense of place. In short, the best and brightest of our workforce will no longer be satisfied to live anywhere without regard to quality of life. For regional economic interests to compete, they must also support the protection and development of a thoughtful green infrastructure.

Familiar and vital counterbalances to rapid development such as parks, greenways, protected riparian corridors, improving biodiversity, fostering agricultural and nature-based tourism sites, protecting cultural areas, and ensuring reasonably clean air and water must exist for communities to prosper and succeed. These attributes create spaces that people want to live in. In many contexts, it is the small farm and forest landholder who has remained and held out in the face of ever-growing pressure to develop and sell their land that provides the support system for these communities to retain some green infrastructure. It should be noted that it is now viewed as normative and essential practice to provide parks, open space, and tree cover as part of economic development and planning [25]. Planners and policy makers must support and protect the remaining inventory of these resources for communities and regional development to succeed.

There are at least three important drivers that will continue to lead to land that will become fragmented in the United States: (1) through the general growth of the population; (2) through continued pressure from development of rural lands into more financially valuable "higher and better use (HBU) lands" to provide infrastructure, housing, and commercial services on previously held farm and forest areas; and (3) through an absence or lack of estate and succession planning for the transfer of intergenerational assets.

Land loss through development will be an issue for the near future, with the U.S. population expected to rise to over 417 million people by the year 2060 [26]. Some states will be severely impacted by the pressure of urbanization converting farm and forest land into impervious surfaces and other uses that limit or eliminate agricultural land. Land conversion will preferentially include some of the most productive rural lands, which already have good terrain, slope, and soil conditions; reasonable drainage; and some existing roads and infrastructure. These biophysical factors make them easiest to develop and best for more intensive land uses as well [27]. In addition, the financial returns for such HBU lands drive conversion to more profitable land uses. This pressure can be offset by either finding more opportunities to generate income on rural land or through local state and federal policies that provide incentives or reduce taxes on rural land.

A recent American Farmland Trust model based on 15 years of historical data projected that about eighteen million acres of working rural lands would be lost, fragmented, or otherwise compromised by 2040. According to the report, some of the hardest-hit states will be Texas, California, and North Carolina, as well as the Southeast and any rural areas adjacent to major metropolitan areas throughout the United States. These findings suggest that policy makers at every level of government should work to mitigate some of those impacts [28,29].

The recent report "Farms under Threat, The State of the States" identified Texas as the most threatened state for future rural land loss and North Carolina as the second most threatened state. Some of the causes cited in the report were weak land use policies that allow for HBU development of prime agricultural lands and poorly planned real estate development. While tools exist to perform smart special planning for entire regions, most development approvals remain at the local level, which often do not work in harmony with respect to where and how development occurs. Governance for land use planning and zoning is held primarily at the local level. There are efforts at regional planning that have been effective but are voluntary, with ultimate authority towards development taking place at the local/municipal level. There were several states adding as much or more

in population increase to Texas and North Carolina without losing as much land due to stronger land use land policy and protections [28].

It is noteworthy that 40% of the nation's farm and forest land is owned by individuals aged 65 and older, and more than 370 million acres will change ownership by 2040 through succession executed by wills and probate [30]. This creates a great deal of vulnerability to accelerating land fragmentation throughout the United States and represents one of the largest transfers of intergenerational wealth in history. Land tenure and ownership for African American heirs property and Native American property has been at greatest risk during intergenerational transfers.

3.4. Heirs Property

Heirs property is a land ownership classification that often occurs when one dies intestate (without a will), or in some cases with a will passing on an undivided interest to heirs, which has created a vulnerable class of landowners in the United States. While many different forms of succession throughout the world have discriminatory practices regarding succession of property, like limiting it to male heirs, the historical legacy of heirs property is seated in pervasive racism and discrimination in local government administration and federal government farm support programs and practices in the United States. It is a unique phenomenon with substantial social justice implications for both African American and Native American populations historically and for all landowners going forward.

Each of our 50 states in the U.S. has a differing but similar formula on how to resolve heirs property or land transfer without a will immediately after death, depending on number and types of marriages, number of children, and other life situations. The problem becomes large and unwieldy when real estate is not transferred immediately after death and continues on "clouded" for many generations. In the absence of written deeds and recorded titles, these properties would simply be handed down informally for many generations. Similarly, the legal ownership of these properties can go unresolved for generations, at which point the courts will look at lineal descentance provided through birth and death documents which provided a link to the original title holder [5,31].

Often, these properties have not gone to probate to be resolved, and so the interest of heirs remains undivided. In other words, every heir owns all the property, often without knowing it. If this is allowed to go on for even a few generations, it can produce hundreds of individuals with an undivided interest in a property [31].

Many of these African American heirs property landholdings are among the most unstable class of owners. Heirs property is land owned in common and held as an undivided legal interest. All the heirs have a legal right to all the property, but in many cases, do not have a marketable title to the property since estate issues remain unresolved and dynamic. Without a marketable title, property cannot be borrowed on or sold, and no single heir can decide on the dispossession or use of the property, except through sale and partitioning the land, with each heir receiving a cash settlement for their interest [30].

Our English common law system has a developed way to transfer land ownership, through written and notarized documentation and more. However, none of this is forced by any requirement unless the living heir pursues a change of title or remediates the problem of co-tenancy. Titles and transfer of property rights must be done in writing and recorded. This principle dates to the earliest of English common law and is known as the statute of frauds doctrine [31]. These lands are often passed down without a will or trust to direct or even a deed to prove ownership. This informal passing of property to heirs falls outside of the legal system unless clarification or resolution is sought and initiated through the courts. If the taxes are paid on the property, the clouded title, sometimes referred to as tangled title, may persist for many generations or never be resolved [5]. An issue arises for any of the heirs or anyone who holds an undivided interest, and the state can be prevailed upon to make choices on behalf of all the heirs. Legally, this situation often arises as the result of an untimely or premature death or lack of forethought about the property upon death. It can also occur when a landowner lacks the financial resources to plan with an experienced

attorney. It should be noted that within minority communities, and more specifically in the African American communities, the problem is exacerbated by a culture of mistrust due to a legal system which did not afford them equitable access or legal protections [32].

As noted, since 1910, African Americans have lost 90% of their land in the U.S. South, in part through the heirs property phenomenon, as well as tax forfeit sales, predatory partition actions, or even violent theft [33]. One need only imagine the challenges of interfacing with a legal system made up entirely of White lawyers, which enslaved African Americans as property up until 160 years ago and suppressed them with Jim Crow laws until about 60 years ago. With limited opportunities for legal services, especially ones the African American community could trust, the transfer of real property occurred informally by word of mouth and action (who lived and worked the property) for transition from one generation to the next. This allowed for partition actions to be taken and land to be sold and divided up, for those who understood the law.

Tax foreclosures occurred for some African American farmers who lacked much of the assistance available to White landowners, with their properties sold for non-payment of taxes. In other cases, land was stolen through outright fraud, like producing competing titles which deeded land to someone else. White farmers were given tax benefits, loans from banks, and other price supports from the government for their crops, which made them profitable, able to improve their land, and pay the requisite taxes [34]. These practices in the Reconstruction era in the South after the Civil War, along with outright patterns of intimidating Black farmers and the existence of a culture of violence against them, contributed to the significant loss of African American farmland in the United States [5,14].

In addition, pervasive federal government program discrimination, especially in the Department of Agriculture farm assistance programs, has been proven in two massive class action court decisions noted above [20–22]. Some states have sought to find remedy for the heirs property phenomenon by passing the Unified Partitioning of Heirs Property Act (UPHPA), as described subsequently. The UPHPA provides significant protections for heirs property owners. It has passed in 23 states at the time of this writing [35].

Estimating the precise amount of heirs property and thus the scope of the problem is an ongoing problem in the U.S. The United States does not have a single national land registry or record keeping system. Instead, various local communities, including cities, townships, counties, parishes, or states keep the basic land title and registration information or aggregate that information, sometimes at a state level. While there are a number of remarkable web-based tools available to assist in both planning and assessment, none of these web-based or GIS systems can accurately estimate the amount of heirs property. It is in fact a challenging exercise, as each county within each state uses differing nomenclatures to describe heirs property, and they are the predominant database keepers of titles and definitions of ownership. In short, in the United States this could translate into 3000 counties, or more investigations to make a determination of heirs property, which would require nomenclature investigation and classification challenges, and the inventory would remain dynamic with new heirs properties being created each year in some cases. Individual counties express heirs property as estate of heirs, percent share of interest followed by names, or one name followed by et al., and a host of other possible terms. As such, no precise or hard estimate of heirs property exists [5,14], and it remains largely an estimation exercise. Our cadastral system of digitizing county records has made the process easier but remains localized, tedious, and sometimes unprecise. With diligent efforts and funding, estimates are becoming clearer, however. It is likely that 41 percent of Black-owned property in the southeastern United States is classified as heirs property, valued at over \$6 billion [5,6].

To illustrate the broader issue, White households are twice as likely as Black households to receive an inheritance. In 2013: “The conditional mean inheritance of white families was \$236,000, compared to \$83,000 for black families and \$86,000 for Hispanic families.” [36], p. 15. Intergenerational asset transfer represents a significant part of the net worth of families in the United States [37]. This lack of accumulated wealth in the African

American Community, as well as Latine households, is due in part to disparities and unequal treatment in both law and practice since 1910 for African American landowners, with similar discrimination for Latines, as noted above.

3.5. Native American Property

The unfortunate history of Native Americans differs greatly from African Americans, but some structural commonalities exist when entering the English common law system of succession. At the turn of the 19th century, following the subjugation of western tribes through force, allotments were given to Native Americans in the western United States who viewed land as communal property and lacked experience with English common law. While original communal property was most well-known, individual Native American ownership was introduced through these land distribution efforts, which also subjected them subsequently to heirs property issues [38,39].

The purported hope of many early U.S. policy makers was to extend private land ownership concepts to the Native Americans in order to integrate their populations into the English common law system and practice of land ownership and succession [40]. The Dawes Severalty Act of 1887 represented an initial effort by the U.S. Congress to align traditional Native American land governance into a structure based on individual ownership [38,39]. The act authorized Native American reservations to be divided into discrete units for tribal members, typically 160 acres for each family head, 80 acres for each single adult, and 40 acres for each child [17]. These divided allotments were held by the government for 25 years to allow Native Americans time to integrate into the new system of ownership and to prevent opportunists from outside the Native American community from appropriating the property. It was not until 1910 that Native Americans were legally allowed to use wills and to sell their property. Subsequently, a great deal of heirs property was created in the Native American community.

These mandated allotments were not implemented on all reservations and were ended in 1934. What quickly followed was a loss of 90 million acres of Native American land [40,41]. Many of the same problems that plagued African Americans in the South similarly also harmed Native Americans. These included the lack of credit access, no government technical assistance, and inability to receive federal financial incentives to make land improvements [40]. Under several recent programs, the U.S. Government is trying to reverse the system by purchasing these fractionalized tracts and giving them back to the tribes [41]. As noted, Native Americans also experienced discrimination, which led to a legal settlement by the U.S. Department of Agriculture after the *Keepseagle v. Vilsack* lawsuit in 2011 [23]. Like the *Pigsford* cases, a legal agreement did not ensure appropriation and distribution of the requisite funds, so restitution of past discrimination outcomes is still unreliable. These practices and heirs property issues also contributed to land ownership loss and fragmentation. Native American farm, ranch, and forest lands are scattered throughout the United States, so the adverse impacts of discrimination in farm programs is severe for this class of owners and needs redressing as well.

4. Policy and Program Alternatives

Per the policy process model, formulating and adopting acceptable courses of action and improved policies are the next steps to resolve issues, which we merge in the discussion in this section. These alternatives could broadly include (1) improvement of or creation of new federal laws, programs, and funding; (2) development of new or improved state and local land protection instruments; and (3) landowner outreach and succession planning. As noted, all of these approaches surely would be needed to improve the fundamental issues of land fragmentation and African American, Native American, or Latine land loss. Similarly, integration and cooperation among these approaches, institutions, professionals, and landowners will be required for success.

4.1. Federal Laws, Programs, and Funding

Considerable efforts to eliminate discrimination in federal Farm Bill programs have occurred in the last 15 years. African American and other minority landowners faced long-standing discrimination in federal programs. The Pigford, Keepseagle, and Garcia lawsuits mandated reform of USDA programs, but despite these decisions, success in the discrimination settlement programs was modest. Substantial payments of \$4 billion to offset up to 120% of qualifying Farm Service Agency loans and federal financial assistance to minority landowners were authorized and appropriated in Section 1005 of the American Rescue Plan Act of 2021 (ARP). The extra 20% was designated to pay for taxes on the loan rebates as well. Several lawsuits challenged giving the funds solely for socially disadvantaged farmers, including the complex *Miller v. Vilsack* (2021) lawsuit in Texas [16].

Per the Civil Rights Litigation Clearinghouse [16], the plaintiff challenged Sections of the ARP that “. . . provided loan forgiveness to farmers and ranchers during the COVID-19 pandemic only if they qualified as a ‘socially disadvantaged farmer or rancher.’” The USDA defined “socially disadvantaged” to include only farmers or ranchers from one or more of the following ethnic groups: “African Americans, American Indians, Alaskan Natives, Asians, Hispanics, and Pacific Islanders” . . . who “have been subjected to racial or ethnic prejudice because of their identity.” The plaintiff alleged that the USDA’s definition failed to “. . . include white ethnic groups that have unquestionably suffered ethnic prejudice” and asked for a stay on implementation of the ARP. After a bewildering plethora of motions, appeals, amicus briefs, amended complaints, court decisions, and remands at various levels, the relevant section (1005) of the ARP was repealed, temporarily negating USDA authority to provide special support to only minority socially disadvantaged farmers.

However, in a successful congressional policy response to the *Miller v. Vilsack* and other “reverse discrimination” lawsuits, the 2022 Inflation Reduction Act (IRA) authorized two new farm programs for socially disadvantaged landowners, regardless of ethnicity. First, any farmers, forest owners, and ranchers who faced discrimination before 2021 were eligible to apply for appropriated funds of \$2.2 billion for financial assistance for management practices; second, \$3.1 billion was authorized for payments to financially distressed farmers for loans or loan modifications [16]. These provisions have sidestepped the prior reverse bias challenges, and by 2024, USDA was seeking final request from farmers for financial assistance funds from the \$2.2 billion of appropriated funding [42,43].

So, in the case of federal programs, there have been considerable efforts to improve programs in the Farm Bill, as well as actual policy change and implementation. These efforts were forced by successful lawsuits against discrimination brought by African American, Native American, and Latine landowners. Critics and socially disadvantaged landowners remain doubtful about the success of these programs at distributing an equitable amount of funds [44,45], but the stated policy intentions of USDA and Congressional actions and budget appropriations have taken the first major step of considering policy and program alternatives and providing funding and agency support for those programs, despite considerable political and legal opposition from traditional ethnically White farm owners and interest groups.

4.2. Land Protection Instruments

Heirs property is among the most vulnerable forms of land ownership in the United States. As one example, if an unscrupulous person can secure the interest in the property from one of the heirs, or if one of the heirs simply wants out, they can force the sale and fragmentation of the entire property through a process known as partitioning. While 23 states have passed the Uniformed Partitioning of Heirs Property Act (UPHPA), which makes this adverse sale process more difficult and landowners less vulnerable, more states have not yet passed it (Table 1). The UPHPA provides some relief for landowners who are also heirs property owners by making it more difficult to partition and sell property in the case of a dispute or an unscrupulous developer that has bought out an interest from one of the heirs [33]. The UPHPA developed by the Uniform Law Commission represents

a significant reform considering the collective interests of all 50 states to produce model legislation to address the problem that can be adopted by state legislatures on a bipartisan basis. It should be noted that the legal designation of heirs property is much more serious and prolific in the U.S. South, as was segregation and the consequences of segregation, as well as other discriminatory practices. As an example, both Georgia and Kentucky have 21,000 to 22,000 heirs parcels, as compared to Kansas or Maine which have roughly between 2000 and 3000 heirs parcels [46]. The adoption or lack of adoption of UPHPA varies greatly from state to state due to the influences relating to the number of African American, Native American, or Latine landowners; the real estate industry; non-profits engaged in advocacy; political control; and how much general education on the matter exists, as opposed to any pattern or threat of fragmentation unique in each state.

Table 1. U.S. States that Have Enacted or Not Enacted the Uniformed Partitioning of Heirs Property Act (UPHPA) Elements, 2024.

States with UPHPA	States without UPHPA	UPHPA under Consideration
Alabama	Alaska	Arizona
Arkansas	Colorado	Kansas
California	Delaware	Massachusetts
Connecticut	Idaho	Michigan
Washington DC	Indiana	New Jersey
Florida	Kentucky	North Carolina
Georgia	Louisiana	
Hawaii	Maine	
Illinois	Minnesota	
Iowa	Nebraska	
Maryland	New Hampshire	
Mississippi	North Dakota	
Missouri	Ohio	
Montana	Oklahoma	
Nevada	Oregon	
New Mexico	Pennsylvania	
New York	Puerto Rico	
South Carolina	Rhode Island	
Texas	South Dakota	
US Virgin Islands	Tennessee	
Utah	Vermont	
Virginia	West Virginia	
Washington	Wisconsin	
	Wyoming	

The Uniform Law Commission [35] describes the UPHPA reasons and components succinctly as quoted below:

“The Uniform Partition of Heirs Property Act (UPHPA) helps preserve family wealth passed to the next generation in the form of real property. If a landowner dies intestate, the real estate passes to the landowner’s heirs as tenants-in-common under state law. Tenants-in-common are vulnerable because any individual tenant can force a partition. Too often, real estate speculators acquire

a small share of heirs property in order to file a partition action and force a sale. Using this tactic, an investor can acquire the entire parcel for a price well below its fair market value and deplete a family's inherited wealth in the process. UPHPA provides a series of simple due process protections: notice, appraisal, right of first refusal, and if the other co-tenants choose not to exercise their right and a sale is required, a commercially reasonable sale supervised by the court to ensure all parties receive their fair share of the proceeds".

The model UPHPA helps protect Heirs Property by requiring the following specific protections when a co-tenant files for a partition order [35]:

- "1. The co-tenant requesting the partition must give notice to all of the other co-tenants.
2. The court must order an independent appraisal to determine the property's fair market value as a single parcel. If any co-tenant objects to the appraised value, the court must hold a hearing to consider other evidence.
3. Any co-tenant (except the co-tenant(s) requesting partition-by-sale) may buy the interest of the co-tenant seeking partition for a proportional share of the court-determined fair market value. The co-tenants have 45 days to exercise their right of first refusal, and if exercised, another 60 days in which to arrange for financing. If more than one co-tenant elects to buy the shares of the co-tenant(s) seeking partition, the court will pro-rate the sellers shares among the buyers according to their existing fractional ownership percentages.
4. If no co-tenant elects to purchase shares from the co-tenant(s) seeking partition, the court must order a partition-in-kind, unless the court determines that partition-in-kind will result in great prejudice to the co-tenants as a group. UPHPA specifies the factors a court must consider when determining whether partition-in-kind is appropriate.
5. If partition-in-kind is inappropriate and the court orders a partition-by-sale, the property must be offered for sale on the open market at a price no lower than the court-determined value for a reasonable period of time and in a commercially reasonable manner. If an open market sale is unsuccessful or the court determines that a sale by sealed bids or by auction would be more economically advantageous for the co-tenants as a group, the court may order a sale by one of those methods".

Additional frameworks have been suggested and created such as community land trusts (CLT), which are non-profits who take over fragmented parcels and place them under restrictions that require things like affordable housing, maintaining the community composition, and maintaining a standard of aesthetics. These efforts in creating community-based agreements (CBA) are achieved through the community land trusts [16]. Passage of the UPHPA remains the most important firewall in the prevention of land fragmentation of heirs property through partitioning. More leading states will add new and other innovative strategies like creating CBAs and CLTs in the future. Another similar concept has been proposed to engage local and municipal governments to create Land Assemblage Districts (LADs) to create similar benefits and protections for landowners from being overrun through partitioning and development. To date, this concept has not received widespread use [5].

The acceptance and impacts of these new solutions have not been studied to date, and indeed they are so new that no implementation research is available. Further research on the tenets of these local solutions, provision of information, adoption levels, and outcomes is needed before conclusions about their merits can be made. To achieve more success in reducing heirs property problems, further advocacy for heirs property research, solutions, and outreach will need to be pursued by landowners, social NGOs, councils of county or state governments, state legislators and staff, social and policy scientists, and others.

4.3. Landowner Outreach and Succession Planning

Heirs property issues apply to African American landowners, mostly in the South, and Native American landowners, more often in the North and West. The problem of heirs property appears to be very persistent and ongoing despite many recent efforts to provide information and extension efforts for landowners about the problem, and it cuts across all demographic lines. For example, a recent post-meeting questionnaire following several North Carolina workshops on succession planning ($n = 94$) revealed that 58.5% of landowners had no knowledge of the practice of partitioning. Another question revealed that 40.4% of landowners had no succession plan, will, or trust. When coupled with the reality that many states have not passed the Unified Partitioning Heirs Property Act, this reflects serious and ongoing vulnerabilities of fragmentation and land loss. As this preliminary poll suggests, new heirs property creation continues each time property passes intestate, or with a will that passes on divided interest or shares of real property. This process will continue to erode valuable and irreplaceable farm and forest rural lands, as well as the patrimony of minority and sometimes White landowners.

The need for and the role of succession planning continues to be a point of emphasis among professionals concerned with land fragmentation. Recent efforts to provide landowners with tools to begin planning for succession of their working lands have had some success. Innovative succession planning programs like “Ties to the Land” in Oregon [47] and “NextGEN” in Virginia [48] engage landowners and their families to begin conversations and take steps to make a successional plan for their land by involving several generations of family members at the same time. Succession planning is a sensitive and uncomfortable topic for most. Few people like to speculate about their legacy and farm or forest status after they are gone. Conversations with family, lawyers, and accountants about the disposition of an estate built up after a lifetime of work can be stressful and hard at best and can keep a landowner in limbo and potentially lead to passing on property intestate.

Tax considerations often will encourage landowners and their families to begin to think about the intergenerational transfer of land and property. Until recently, estate taxes represented a significant burden to the successor. However, federal estate taxes now exempt individual (or combined) estate taxation on amounts of less than \$13.61 million (\$27.22 million), thus eliminating federal tax liability for most rural heir landowners [49]. This asset hurdle can be exceeded with high land values in more valuable rapidly expanding areas or by absentee farm owners with substantial nonfarm wealth at death. In most states, estate tax burdens for successors have decreased considerably as well. But federal and state income and estate tax laws change frequently, prompting some landowners and their families to make successional planning. Going through succession planning helps joint family owners gain clarity about who is a good fit to continue the legacy of their working lands. The succession planning process will increase the likelihood that land will be passed on as a whole with an undivided interest and a legal architecture developed to prevent land from being fragmented through family disputes and legal remediation among heirs.

5. Program Implementation

Program implementation is the fourth component of the policy process model used here. In order to help prevent rural land fragmentation, concerted efforts must be implemented across a spectrum of education and outreach, unbiased financial and loan incentives for farmers, planning, and new laws or provisions at the federal, state, and local levels. The success of these efforts depends on individual values and land ethics, landowner incentives, new legal policy instruments, strong legal representation and advocacy for socially disadvantaged landowners, proactive government, nongovernment administrative implementation, and substantially increased education for possibly affected landowners. We return here to discuss implementation for landowner education, legal instruments, and technical responses. The implementation of federal farm programs was discussed above since it was intertwined closely with program alternatives and adoption due to several key federal farm program lawsuits and new laws.

5.1. Landowner Values and Education

In this ever-expanding built urban and exurban landscape, landowners can be unaware and surprised about their large property values and ownership implications. A landowner may face enormous pressure among choices of selling out, protecting a longstanding family property, and struggling on how to maintain profitability on the land in a transformed developing community. Working landowners are motivated to maintain ownership in a mix of three primary ways. First is an attachment to family. In many cases, property ownership goes back many generations, and every improvement, every effort, and every member that ever worked the land can be felt and understood by the owner. The connection is palpable and emotional. Nobody wants to give that connection away; it has become a part of their identity. Even if ownership does not go back generations, it represents something real, emotional, and important to the landholder.

Second, for many landowners, a strong motivation exists to steward the land and to take care of it in sound sustainable ways, such as using conservation or best management practices (often with the benefit of important government-provided cost share funds), or managing for wildlife, soil and water uses, recreation, or amenity values. This stewardship perspective can be almost spiritual in the best cases and a heartfelt but foregone land ethic in unfortunate cases.

Third, landowners are motivated by the necessity to make the land profitable, pay taxes, and cover their management costs. Without sufficient income and reasonable profits, the push to sell becomes inevitable regardless of personal attachment or good intentions. Many absentee owners subsidize farm and forest land ownership costs with off-farm income. In fact, most farmers in the U.S.—even those who live on the farm, of all races—earn a substantial share of their annual income from off-farm sources. Eighty-eight percent of U.S. farms are classified as small family farms; these farms rely on off-farm resources for the majority of their income. Only large farms, about 12%, received most of their household income from farming [50]. However, no one can operate a business at a loss in perpetuity, and new and younger owners who inherit farm and forest may be less able to offset farm expenses from their lower incomes, or are much less attached to the land, creating far more pressure to sell or liquidate those assets.

Understanding and aligning with landowner motivations provides a critical path for working within the land conservation community to provide resources to inform landowners, government officials, bureaucrats, and citizens on the need for conservation. Education is needed for subjects such as funding of targeted land preservation through fee simple purchase, purchase of conservation easements, the creation of agricultural and cultural districts, new cost share programs, support for agricultural and nature-based tourism, or creating new markets like “farm to table” programs. The provision of resources for the creation of wills and trusts, cogent succession planning for forest and farm landowners, and resolving heirs property issues are critical for mitigating land fragmentation of working lands.

5.2. Legal Instruments and Technical Responses

Federal programs are crucial but difficult and only cover part of the portfolio needed for reducing fragmentation and preserving heirs property. The Unified Partition of Heirs Property act (UPHP) has been passed by 23 states, but more enactments would be helpful. The limited use and adoption of tools like land assembly districts (LADs) by municipal governments, conservation land trusts (CLTs) using community-based agreements (CBAs) to help ameliorate the problems of fragmenting minority lands, and/or creating heirs property continue to be a real and vexing problem. Efforts of state and non-government organizations to resolve discrimination and program bias also must receive conscientious efforts to build environmentally and socially just government institutions and programs.

Unlike many ventures, in land retention efforts within developing areas, there is only one chance to preserve these working lands and open spaces to fit into the development scheme. Once the land is developed, very rarely will it be returned to farms and forests.

Development in states, regions, and communities left unchecked creates spaces that lose their character, connectivity, a certain quality of life, and a landscape that makes life kinder and more enjoyable. In its place instead are new cookie cutter developments, congested feeder roads leading to the interstates, stormwater runoff issues, and a host of other problems left in the wake of uncoordinated and at times thoughtless development. It also eventually serves as a clear threat to food and fiber resources close to home to support a growing population. Crop productivity increases are hard to continue indefinitely, and possible adverse effects of fertilizers and chemicals and diminished soil health can occur.

While much of agriculture is concerned with preserving larger tracts of land for future resource needs, landowners in extraterritorial jurisdictions (ETJs) and long-range urban service areas (LRUSA) in large and mid-sized communities will continue to be approached and offered compensation to sell their land for developments as growth continues to push urban boundaries farther into once rural areas. One can also look at transportation improvement plans (TIPs) to determine where growth is headed next, and planners can and should use it as a guideline to identify critical areas for future land retention efforts.

Sophisticated GIS capabilities and a national web soil survey in the U.S. can identify our best remaining agricultural soils. This can help map priority agriculture and forest lands at the state and local level and can be used as a strategy to guide development into less suitable soils and away from our most productive areas. The Natural Resource Conservation Service has provided soil survey information dating back from 1899, with soil maps and data on more than 95% of our nation's counties on an internet platform [51].

Planners can reduce land fragmentation through careful and thoughtful planning and improve biodiversity of our landscapes [52]. Both flora and fauna have suffered from fragmented land in rural and urban interfaces [53,54]. Many state and local governments have passed buffer rules along perennial streams, which aid in protecting water quality for humans and aquatic species and ameliorating the impacts of fragmentation for wildlife. These riparian corridors help serve as interstate highways for the migration and safe passage of wildlife. Likewise, open space preservation and cooperation efforts and tree canopy ordinances help some states and local municipalities. Strengthening these both through more ordinances, funding, and long- and short-term planning could have significant positive impacts for decades. This mix of renewed private ownership and land retention, assisted by government and nongovernment organizations, will be crucial for disadvantaged landowners and community character, quality of life, and ecosystem services in the future.

6. Discussion and Conclusions

This study identified and examined major drivers of land fragmentation, e.g., [4,5,17,26–29], and policy and programs, e.g., [5,16,21,33], designed to ameliorate the negative impacts of fragmentation and heirs property. Our review is limited in that it is a broad appraisal, primarily in the United States, and is speaking to a diverse and tiered system of governance, operating in varying business climates, differing historical pasts, and other cultural differences between states and regions.

Furthermore, this review does not close the loop of the policy process model and address policy evaluation of the alternatives identified and implemented to date. This is largely because the research, in the field of heirs property at least, is new, and the new policy alternatives—other than federal farm bill provisions and a few state programs—have barely begun implementation, let alone evaluation. As some of the new proposed policies discussed here take effect, new research or reviews can examine and evaluate their impacts. That line of research could examine if new policies and programs are doing what they are intended to do (e.g., quantify the policy statements, funding, personnel, and legal instruments adopted) and if their implementation and outcomes are effective in addressing the overall problems associated with land fragmentation and heirs property (e.g., distribute more funds and achieve less total land loss, especially for African American, Native American, or Latine landowners).

As this paper indicates, there is a vast amount of research, outreach, program development, and implementation work that needs to be performed to ameliorate land fragmentation and redress heirs property problems; and the time to pursue these efforts and protect the scarce remaining African American land and redress heirs problems is indeed very short as development pressures increase and generational property changes occur. This research suggests further work should be performed to separate out and study the roles of environmental justice [16,18,19,32], economic drivers [5,23,24,35], and governance [5,15,31,33,35,47,48] as they relate to the future division of private land ownership in the United States; and to continue to develop, improve, and evaluate policies to resolve these issues in more effective ways.

Issues that drive fragmentation are unique and surely more pernicious for African American, Native American, Latine, or other landowners who have been socially disadvantaged or racially discriminated against. The mix of population pressures, urban and exurban expansion, discrimination, lack of knowledge, and intergenerational land tenure problems have made both fragmentation itself and adverse social outcomes much worse for African American landowners, families, and communities. These problems have destroyed the patrimony of most African American farm and forests owners over the last century.

However, concerted policy responses have been made in recent years, and further efforts to redress issues and prevent further land loss and fragmentation are underway. These have included mandated correction of discriminatory program implementation by the USDA financial assistance and loan programs; development and promotion of land loss prevention laws such as the Unified Partition of Heirs Property act (UPHP); and outreach and education for minority landowners. These institutional efforts and other means to improve income generation for all rural landowners, and especially limited-income small owners, will be necessary to help prevent future fragmentation of rural lands and loss of their productive and ecosystem benefits.

Author Contributions: K.S. wrote the first draft of this paper, including identifying, collecting, and synthesizing the brunt of the literature on land fragmentation and heirs property and policy responses. F.C. drew from political science literature and developed the policy process theory and framework used for the review and collected and synthesized most of literature on federal farm programs and lawsuits. In numerous versions, K.S. and F.C. shared in searching for literature and deriving principles about interactions of race, land, ecosystems, and public programs to reduce African American and Native American land loss. Each made many iterative suggestions, added new references for all sections of the manuscript, made edits of the other's ideas and written material, and synthesized their cooperative efforts for the final manuscript for submission. F.C. imported the final document file into the Land template format and organized the references cited per the guidelines. There was no dedicated funding other than professional time, nor employees or staff for administration. All authors have read and agreed to the published version of the manuscript.

Funding: This research received no external funding, other than the personnel time and funds for the co-authors, as provided by NC State University.

Data Availability Statement: The original contributions presented in the study are included in the article, further inquiries can be directed to the first corresponding author.

Conflicts of Interest: The authors declare no conflicts of interest. NC State University had no explicit role in the design of the study; in the collection, analyses, or interpretation of the research and practical literature; in the writing of the manuscript; or in the decision to publish the results.

References

1. Narducci, J.; Quintas-Soriano, C.; Castro, A.; Som-Castellano, R.; Brandt, J.S. Implications of urban growth and farmland loss for ecosystem services in the western United States. *Land Use Policy* **2019**, *86*, 1–11. [[CrossRef](#)]
2. Hartvigsen, M. Land reform and land fragmentation in Central and Eastern Europe. *Land Use Policy* **2014**, *36*, 330–341. [[CrossRef](#)]
3. Pili, S.; Serra, P.; Salvati, L. Landscape and the city: Agro-forest systems, land fragmentation and the ecological network in Rome, Italy. *Urban For. Urban Green.* **2019**, *41*, 230–237. [[CrossRef](#)]

4. Drummond, M.A.; Loveland, T.R. Land-use Pressure and a transition to Forest-cover Loss in the United States. *BioScience* **2010**, *60*, 286–298. Available online: <https://academic.oup.com/bioscience/article/60/4/286/226146> (accessed on 22 November 2023). [CrossRef]
5. White, E.R. The Anticommons intersection of heirs property and gentrification. *Vanderbilt Law Rev.* **2023**, *76*, 1561. Available online: <https://cdn.vanderbilt.edu/vu-wordpress-0/wp-content/uploads/sites/278/2023/10/06175518/The-Anticommons-Intersection-of-Heirs-Property-and-Gentrification.pdf> (accessed on 12 January 2024).
6. Francis, D.V.; Chelwa, G.; Hamilton, D.; Mitchell, T.W.; Rosenberg, N.A.; Stucki, B.W. The contemporary relevance of black land loss. *Am. Bar Assoc. Wealth Disparities Civ. Rights* **2023**, *48*, 2.
7. Anderson, J.E. *Public Policymaking*, 8th ed.; Cengage Learning: Stamford, CT, USA, 2015; 369p.
8. Cubbage, F.; O’Laughlin, J.; Peterson, N. *Natural Resource Policy*; Waveland Press: Long Gove, IL, USA, 2017; 505p.
9. Cooperative Extension Service. Cooperative Extension Serving People: A Brief History. 2005. Available online: <https://www.ces.ncsu.edu/cooperative-extension-serving-people-a-brief-history/> (accessed on 18 December 2023).
10. Sunstein, C.R. *Laws of Fear: Beyond the Precautionary Principle*; Cambridge University Press: Cambridge, UK, 2005. [CrossRef]
11. U.S. Census Bureau. Census Bureau Estimates Show Average One-Way Travel Time to Work Rises to All-Time High. Press Release Number CB21-TPS.29. 2021. Available online: <https://www.census.gov/newsroom/press-releases/2021/one-way-travel-time-to-work-rises.html#:~:text=March%2018,%202021-,Census%20Bureau%20Estimates%25> (accessed on 30 November 2023).
12. Mothorpe, C.; Hanson, A.; Schnier, K. The impact of interstate highways on land use conversion. *Ann. Reg. Sci.* **2013**, *51*, 833–870. [CrossRef]
13. History. Jim Crow Laws. 2024. Available online: <https://www.history.com/topics/early-20th-century-us/jim-crow-laws> (accessed on 19 March 2024).
14. Gaither, C.J.; Zarnoch, S.J. Zarnoch. Unearthing ‘dead capital’: Heirs’ property prediction in two U.S. southern counties. *Land Use Policy* **2017**, *67*, 367–377. [CrossRef]
15. USDA. Limited Resource Farmer and Rancher Website. Available online: https://lrftool.sc.egov.usda.gov/SDFP_Definition.aspx#:~:text=This%20term%20means%20a%20farmer,regard%20to%20their%20individual%20qualiti (accessed on 14 March 2024).
16. Civil Rights Litigation Clearinghouse. Case: Miller v. Vilsack. 4:21-cv-00595. U.S. District Court for the Northern District of Texas. 2022. Available online: <https://clearinghouse.net/case/18120/> (accessed on 26 January 2024).
17. Shoemaker, J.A. Like snow in the springtime: Allotment, fractionation, and the Indian land tenure problem. *Wis. Law Rev.* **2003**, *4*, 729–788. Available online: <https://ssrn.com/abstract=2430811> (accessed on 8 January 2024).
18. Huntsinger, L.; Diekman, L. The virtual reservation: Land distribution, natural resource access, and equity on the Yurok Forest. *Nat. Resour. J.* **2010**, *50*, 341–369. Available online: <https://digitalrepository.unm.edu/nrj/vol50/iss2/5/> (accessed on 2 January 2024).
19. Lyons, C. *Native American Sovereignty*; CQ Researcher; CQ Press: Washington, DC, USA, 2017.
20. Woods, S.D.; Ragar, C.R. Grass tops democracy: Institutional discrimination in the civil rights violations of black farmers. *J. Pan-Afr. Stud.* **2012**, *5*, 6. Available online: https://www.researchgate.net/publication/269275451_Grass_Tops_Democracy_Institutional_Discrimination_in_the_Civil_Rights_Violations_of_Black_Farmers (accessed on 12 January 2024).
21. Casey, A.R. Racial Equity in U.S. Farming: Background in Brief. Congressional Research Service Report R46969. 2021. Available online: <https://crsreports.congress.gov/product/pdf/R/R46969> (accessed on 25 January 2024).
22. Congressional Research Service. The Pigford Cases: USDA Settlement of Discrimination Suits by Black Farmers. 25 August 2005–29 May 2013. 2023. Available online: <https://www.everycrsreport.com/reports/RS20430.html> (accessed on 7 January 2024).
23. National Sustainable Agriculture Coalition. US Reaches \$760 Million Settlement with Native American Farmers. *NSAC Blog*. 2015. Available online: <https://sustainableagriculture.net/blog/keepseagle/#:~:text=On%20Tuesday,%20October%2019,%20the,Vilsack> (accessed on 7 January 2024).
24. United States Department of Agriculture. Socially Disadvantaged, Beginning, Limited Resource, and Female Farmers and Ranchers. Economic Research Service. 2023. Available online: <https://www.ers.usda.gov/topics/farm-economy/socially-disadvantaged-beginning-limited-resource-and-female-farmers-and-ranchers/> (accessed on 15 January 2024).
25. National Recreation and Park Association. Promoting Parks and Recreation’s Role in Economic Development. 2014, pp. 1–32. Available online: <https://www.nrpa.org/siteassets/nrpa-economic-development-report.pdf> (accessed on 14 December 2023).
26. Colby, S.L.; Ortman, J.M. *Projections of the Size and Composition of the U.S. Population: 2014 to 2060*; Current Population Reports, 2014, 25-1143; U.S. Census Bureau: Washington, DC, USA, 2014. Available online: <https://www.census.gov/content/dam/Census/library/publications/2015/demo/p25-1143.pdf> (accessed on 15 January 2024).
27. Hunter, M.; Sorensen, A.; Nogeire-McRae, T.; Beck, S.; Shutts, S.; Murphy, R. *Farms under Threat 2040: Choosing an Abundant Future*; American Farmland Trust: Washington, DC, USA, 2022. Available online: <https://farmland.org/project/farms-under-threat/#:~:text=Farms%20Under%20Threat%202040:%20Choosing%20an%20Abundant%20Future&text=The%20report%20shows%20that%20development,and%20improve%20people’s%20daily%20lives> (accessed on 30 October 2023).
28. Freedgood, J.; Hunter, M.; Dempsey, J.; Sorensen, A. *Farms under Threat: The State of the States*; American Farmland Trust: Washington, DC, USA, 2020. Available online: https://s30428.pcdn.co/wp-content/uploads/sites/2/2020/09/AFT_FUT_StateoftheStates_rev.pdf (accessed on 12 October 2023).
29. Xie, Y.; Hunter, M.; Sorensen, A.; Nogeire-McRae, T.; Murphy, R.; Suraci, J.P.; Lischka, S.; Lark, T.J. U.S. Farmland under threat of urbanization: Future development scenarios to 2040. *Land* **2023**, *12*, 574. [CrossRef]

30. Mitchell, T.W.; Powers, E.L. *Heirs Property and the Uniform Partition of Heirs Property Act: Challenges, Solutions, and Historic Reform*; American Bar Association: Chicago, IL, USA, 2022.
31. Cornell Law School, Legal Information Institute, Statute of Frauds. Available online: https://www.law.cornell.edu/wex/statute_of_frauds (accessed on 14 March 2024).
32. Mitchell, T.W. From reconstruction to deconstruction: Undermining black land ownership, political independence, and community through partition sales of tenancies in common. *Northwestern Univ. Law Rev.* **2001**, *95*, 505–580.
33. Bailey, C.; Thomson, R. Heirs property, critical race theory, and reparations. *Rural Sociol.* **2022**, *87*, 1219–1243. [CrossRef]
34. Russell, K.; Hossfield, L.; Rico Mendez, G. Not a new pattern: Black farmers perspectives on barriers to participating in federal farm programs. *J. Agric. Food Syst. Community Dev.* **2021**, *10*, 4. [CrossRef]
35. Uniform Law Commission. Partition of Heirs Property Act. 2023. Available online: <https://www.uniformlaws.org/home11/18/2023> (accessed on 18 November 2023).
36. Thompson, J.P.; Suarez, G.A. *Exploring the Racial Wealth Gap Using the Survey of Consumer Finances*; Finance and Economics Discussion Series 2015-076; Board of Governors of the Federal Reserve System: Washington, DC, USA, 2015. Available online: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2665627 (accessed on 25 March 2024). [CrossRef]
37. Feiveson, L.; Sabelhaus, J. *Life Cycle Patterns of Saving and Wealth Accumulation*; Finance and Economics Discussion Series 2019-010; Board of Governors of the Federal Reserve System: Washington, DC, USA, 2019. [CrossRef]
38. Bobroff, K.H. Retelling allotment: Indian property rights and the myth of common ownership. *Vanderbilt Law Rev.* **2001**, *54*, 1559–1623. Available online: <https://scholarship.law.vanderbilt.edu/vlr/vol54/iss4/2/> (accessed on 4 January 2024).
39. Debo, A. *And Still the Waters Run: The Betrayal of the Five Civilized Tribes*; Princeton University Press: Princeton, NJ, USA, 1940; 472p.
40. Williams, E.J. Too little land, too many heirs: The Indian heirship land problem. *Wash. Law Rev.* **1971**, *46*, 709–744. Available online: <https://digitalcommons.law.uw.edu/wlr/vol46/iss4/4/> (accessed on 12 January 2024).
41. U.S. Department of the Interior. Status Report: Land Buy-Back Program for Tribal Nations. 2014; 92p. Available online: <https://www.doi.gov/sites/doi.gov/files/migrated/news/upload/Buy-BackProgramStatusReport-11-20-14-v4.pdf> (accessed on 4 January 2024).
42. Rappeport, A. Climate and tax bill rewrites embattled black farmer relief program. *New York Times*, 12 August 2022. Available online: <https://www.nytimes.com/2022/08/12/business/economy/inflation-reduction-act-black-farmers.html> (accessed on 26 January 2024).
43. USDA. USDA Reminds Producers of Upcoming Discrimination Financial Assistance Program Deadline. Press Release No. 001.24. 2024. Available online: <https://www.usda.gov/media/press-releases/2024/01/08/usda-reminds-producers-upcoming-discrimination-financial-assistance> (accessed on 26 January 2024).
44. Reid, D.A. African Americans and Land Loss in Texas: Government Duplicity and Discrimination Based on Race and Class. *Agric. Hist.* **2003**, *77*, 258–292. Available online: <http://www.jstor.org/stable/3744836> (accessed on 20 December 2023). [CrossRef]
45. Hinson, W.R.; Robinson, E. “We Didn’t get nothing”: The plight of black farmers. *J. Afr. Am. Stud.* **2008**, *12*, 283–302. Available online: <http://www.jstor.org/stable/41819175> (accessed on 12 December 2023). [CrossRef]
46. Gilbert, J.; Wood, S.D.; Sharp, G. Who Owns the Land? Agricultural Land Ownership by Race/Ethnicity. *Rural Am.* **2002**, *17*, 4. Available online: <https://ageconsearch.umn.edu/record/289693/?ln=en> (accessed on 18 December 2023).
47. Peterson, A.; Cushing, T. *Ties to the Land: Succession Planning for Rural Landowners*; PNW 763; Pacific Northwest Publishing: Eugene, OR, USA, 2022. Available online: <https://extension.oregonstate.edu/sites/default/files/documents/pnw763.pdf> (accessed on 15 January 2024).
48. Virginia Department of Forestry. NextGEN. 2024. Available online: <https://dof.virginia.gov/forest-management-health/forestland-conservation/generation-next/> (accessed on 15 January 2024).
49. Internal Revenue Service. Estate Tax. 2024. Available online: <https://www.irs.gov/businesses/small-businesses-self-employed/estate-tax> (accessed on 15 January 2024).
50. United States Department of Agriculture. Farming and Farm Income. Economic Research Service. 2023. Available online: <https://www.ers.usda.gov/data-products/ag-and-food-statistics-charting-the-essentials/farming-and-farm-income/#:~:text=The%20households%20operating%20these%20farms,of%20that%20came%20from%20farming> (accessed on 15 January 2024).
51. Natural Resource Conservation Service, U.S. Department of Agriculture. Fact Sheet: Accessing and Downloading Historical Soil Surveys from Internet Archive. 2023. Available online: <https://www.nrcs.usda.gov/sites/default/files/2023-05/Access%20Historical%20Soil%20Surveys%20from%20Internet%20Archive.pdf> (accessed on 18 November 2023).
52. Simkin, R.; Seto, K.C.; McDonald, R.I.; Jetz, W. Biodiversity impacts and conservation implications of urban land expansion projected to 2050. *Proc. Natl. Acad. Sci. USA* **2022**, *119*, e2117297119. [CrossRef] [PubMed]

-
53. Fahrig, L. Effects of habitat fragmentation on biodiversity. *Annu. Rev. Ecol. Evol. Syst.* **2003**, *34*, 487–515. [[CrossRef](#)]
 54. Di Giulio, M.; Holderegger, R.; Tobias, S. Effects of habitat and landscape fragmentation on humans and biodiversity in densely populated landscapes. *J. Environ. Manag.* **2009**, *10*, 2959–2968. Available online: <https://www.sciencedirect.com/science/article/pii/S0301479709001583> (accessed on 18 November 2023). [[CrossRef](#)] [[PubMed](#)]

Disclaimer/Publisher’s Note: The statements, opinions and data contained in all publications are solely those of the individual author(s) and contributor(s) and not of MDPI and/or the editor(s). MDPI and/or the editor(s) disclaim responsibility for any injury to people or property resulting from any ideas, methods, instructions or products referred to in the content.