

Foreign Ownership and Leasehold of Agricultural Land in New York

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Executive Summary

Foreign Ownership and Leasehold of Agricultural Land in New York aims to not only contextualize the issue of foreign ownership of U.S. agricultural land by reviewing the background and history of state and federal legislation and discussing the recent trend of restrictions on “adversary” countries, but also by providing quantifications and visualizations of the current situation of foreign ownership of U.S. agricultural land, with a specific focus on New York.

We emphasize three main overlooked questions in the current policy debate: (1) What is the role of long-term leasing in shaping foreign interests of U.S. agricultural land? (2) To what extent has the recent growth in foreign interest in U.S. agricultural land been driven by renewable solar or wind energy investments? (3) Which countries are the major foreign owners of U.S. agricultural land, and are those countries so-called “adversaries” of the United States?

Based on a database of over 40,000 Agricultural Foreign Investment Disclosure Act (AFIDA) foreign transactions from 1970 to 2021 obtained from a Freedom of Information Act (FOIA) request, we specifically focus on how long-term leasing and the wind/solar energy development sector play significant roles in the recent trend of foreign interests in U.S. agricultural land.

Enacted by Congress in 1978, AFIDA is a federal law that requires foreign entities (individuals, businesses, and governments) to report transactions involving agricultural land to USDA’s Farm Service Agency. Thus, AFIDA requires a foreign entity that acquires, holds, transfers, or disposes

of an interest in U.S. agricultural land to disclose certain information concerning such transactions, investments, and acquisitions. The AFIDA database provides the disclosed information about foreign entities holding U.S. agricultural land, including the name of the foreign entity, nationality, location, date of acquisition, type of interest, acquisition methods, land use (crop, pasture, forest, and other agriculture), parcel acreage, and more.

It is worth noting that AFIDA requires reporting of ownership and partial ownership in U.S. agricultural land by a foreign investor as well as leaseholds of 10 years or more. In other words, foreign investments in U.S. land covered by AFIDA includes both foreign ownership and leasing. Current AFIDA regulations exempt foreign investors from the reporting requirement if their lease of agricultural land is for less than 10 years, but pending congressional legislation seeks to reduce that threshold to 5 years (Brown, 2022).

There are five main results that stand out from our analysis of AFIDA data:

- (1) In New York, as of December 31, 2021, 434 foreign entities held 1,670 parcels or 768,727 acres of agricultural land. These holdings constitute 3.44% of all privately held agricultural land and 2.54% of total land area in New York.
- (2) Long-term leasing is a crucial driver behind the increasing foreign interest in U.S. agricultural land over the past two decades. In New York, foreign-leased agricultural land increased from 108,100 acres to 362,788 acres—a substantial 235.6% increase from 2000 to 2021.

- (3) A noteworthy trend is the substantial investment by foreign entities in renewable energy, such as wind and solar energy development, rather than agricultural production. This is particularly evident for entities under long-term leaseholds—92.65% of foreign U.S. agricultural landholders invested in wind or solar energy in New York, and, nationally, 81.91% did so.

- (4) "Adversary" countries collectively account for only about 1% of all foreign-owned U.S. agricultural land as of 2021 and represent a mere 0.06179% in New York. No Chinese entities hold agricultural land in New York.

- (5) Canada stands out as the largest and historically most significant buyer of U.S. agricultural land: among the 434 foreign entities, 243 Canadian entities acquired 251,534 acres, constituting 32.72% of foreign-held U.S. agricultural land in New York. The top 5 foreign investors of agricultural land in New York are Canada, Cayman Islands, Denmark, UK, and Germany, collectively holding 74.41% of all foreign-owned U.S. agricultural land.

I. Introduction

Agricultural land is the most valuable asset to any country in the world. The vast agricultural land of the United States plays a vital role in producing a wide variety of food products that feed not only the U.S. population but also contribute greatly to the global food supply through substantial exports. From a macro perspective, the U.S. economy benefits greatly from these exports as it helps generate revenue, promote trade, and strengthen international relations. Taking a narrower angle, agricultural land sustains rural communities by creating employment opportunities and bolstering local economies.

Foreign ownership of U.S. agricultural land has long been a concern among rural communities (Deaton and Lawley, 2022). While there is no outright ban on foreign land ownership at the federal level, the Agricultural Foreign Investment Disclosure Act (AFIDA) of 1978 requires foreign investors who acquire, transfer, or hold an interest in U.S. agricultural land, including leasehold interests of 10 years or more, to report such holdings and transactions to the Secretary of Agriculture on Form FSA-153. Rausser and Schmitz (1980) indicate that the major concern toward foreign investment in U.S. agricultural land, as of the time of their writing, primarily came from the indirect effect on entry cost to potential farmers, increasing absentee ownership, and the disruption of the traditional union between farm ownership and operation and economic well-being of rural communities. Lutrell (1979) argues that the opposition toward foreign investment in U.S. land is the result of emotional factors rather than economic considerations, and limiting foreign investment is not beneficial to the nation's stock of wealth and its wellbeing. There has also been an ongoing debate about whether increasing farmland prices should be

attributed to foreign purchases of U.S. farmland, but there is no common agreement toward the potential effect as few studies directly address the issue.

Early legislation was introduced in the 1970s and 1980s to restrict foreign ownership of U.S. land in general; and, by 1984, 30 states implemented some type of restrictive law (Schian, 1984). In the context of agricultural land specifically, a more recent report states that around 24 states¹ have some kind of foreign ownership law to limit or forbid nonresident aliens, foreign business entities, or foreign governments from acquiring or owning private agricultural land (National Agricultural Law Center 2023a), with each state taking its own approach to restrictions. With the restrictions, foreign ownership has historically been a very small portion of farmland in the United States (Nickerson et al., 2012), although there continue to be concerns regarding the issue. According to a USDA annual report, revised on July 12, 2023, foreign entities held around 40 million acres of agricultural land in the United States as of December 31, 2021, which is 3.1% of all privately held agricultural land and 1.8% of all land within the United States. (USDA-FSA 2021).

Recently, public concerns toward this issue have been escalating due to increasing foreign-held interests of U.S farmland during the past two decades and growing attention from public media and politicians toward “adversary countries.” Despite the rising apprehensions toward this issue, the structure of foreign land ownership in the United States, especially in a more current context, has not been extensively studied in the literature and is mostly absent from the heated social

¹ The 24 states are Alabama, Arkansas, Florida, Idaho, Indiana, Iowa, Kansas, Kentucky, Louisiana, Minnesota, Mississippi, Missouri, Montana, Nebraska, North Dakota, Ohio, Oklahoma, Pennsylvania, South Carolina, South Dakota, Tennessee, Utah, Virginia, and Wisconsin.

discussion. This article aims to provide more quantifications of the current situation of foreign land ownership in the United States, with a specific focus on New York, by answering three main overlooked questions in the current policy debate: (1) What is the role of long-term leasing in shaping foreign interests of U.S. agricultural land? (2) To what extent has the recent growth in foreign interest in U.S. agricultural land been driven by renewable solar or wind energy investments? (3) Which countries are the major foreign owners of U.S. agricultural land, and are they so-called “adversaries” of the United States? Based on a database with over 40,000 Agricultural AFIDA foreign transactions from 1970 to 2021 obtained from a Freedom of Information Act (FOIA) request, we specifically focus on how long-term leasing and the wind/solar energy development sector play significant roles in the recent trend of foreign interests in U.S. agricultural land. It is worth noting that under rising public pressure, USDA has start to make available the AFIDA database with a two-year lag, and government agencies are soliciting inputs and strategies to improve the data collection process especially to “enhance efforts to collect, track, and share key information could better identify national security risks” (GAO 2024).

There are five main results that stand out from the analysis of the AFIDA data: (1) In New York, as of December 31, 2021, 434 foreign entities hold 1,670 parcels or 768,727 acres of agricultural land. These holdings constitute 3.44% of all privately held agricultural land and 2.54% of total land area in New York; (2) Long-term leasing is a crucial driver behind the increasing foreign interest in U.S. agricultural land over the past two decades. In New York, foreign-leased agricultural land increased from 108,100 acres to 362,788 acres—a substantial 235.6% increase from 2000 to 2021; (3) A noteworthy trend is the substantial investment by foreign entities in

renewable energy, such as wind and solar energy development, rather than agricultural production. This is particularly evident for entities under long-term leaseholds—92.65% of foreign U.S. agricultural landholders invested in wind or solar energy in New York, and, nationally, 81.91% did so; (4) "Adversary" countries collectively account for only about 1% of all foreign-owned U.S. agricultural land as of 2021 and represent a mere 0.06179% in New York. No Chinese entities hold agricultural land in New York; and (5) Canada stands out as the largest and historically most significant buyer of U.S. agricultural land: among the 434 foreign entities, 243 Canadian entities acquired 251,534 acres, constituting 32.72% of foreign-held U.S. agricultural land in New York. These aspects are missing from the public narratives of politicians but are undoubtably valuable insights that can unravel the current structure of foreign land ownership in the United States and inform policy makers about the future of foreign land acquisition.

The remaining sections are structured as follows: In section II, we briefly summarize the background of recent federal and state legislation. In section III, we introduce and describe the structure of the AFIDA data and briefly review our method for visualizing the results. In section IV, we reflect on the main results by interpreting the visualizations. In section V, we expand our exploration to a broader landscape, discussing the significance and potential for future studies concerning how location, land use, and foreign ownership of agricultural and food processing facilities, such as CAFOs, could impact national security. In section VI, we conclude our findings and discuss the implications for future policies.

II. Background on Federal and State Legislations on Foreign Land Ownership

Over the past two years, numerous states have proposed legislation aimed at limiting foreign ownership. These proposed bills exhibit a range of intricacies and differentiate between individuals and corporations. In parallel, at the federal level, several proposed measures seek to exert control, prohibit, impose restrictions, or heighten oversight of foreign investments within the U.S. agricultural sector. The University of Arkansas National Agricultural Law Center splits the proposed measures of the 117th Congress (2021–2022) into four categories, some of which overlap (National Agricultural Law Center 2023). The proposed bills either: (1) restrict or prohibit foreign ownership/investment in U.S. real estate for either all foreign countries or a subset of countries; (2) amend AFIDA to require the Secretary of Agriculture to make land purchase reports publicly available or tighten reporting requirements by requiring foreign entities reporting leases 5 years or more as opposed to 10-year-or-more leases; (3) prevent foreign participation in U.S. government farm programs or access to credit or financial services offered by the Farm Credit System; or (4) add the Secretary of Agriculture to the Committee on Foreign Investments in the United States (CFIUS).

Seventeen states have some kind of restrictions on foreign ownership of land; however, each state's restrictions vary based on the definition of agriculture or farming, restrict certain kinds of foreign owners, or allow foreign owners to only purchase up to a certain amount of agricultural land. Several states, such as Iowa, already had restrictions on corporate land ownership which affects both foreign and U.S. companies (National Agricultural Law Center 2023b). From 2021 through 2022, twelve states (Alabama, Arizona, Arkansas, California, Indiana, Iowa, Mississippi, Missouri, Oklahoma, South Carolina, Tennessee, and Texas) have proposed legislation that seeks to restrict certain foreign investments in real property and agricultural land located within the

boundaries of their state. In 2023, the momentum has persisted, with the majority of states either already having or planning to propose similar legislation (National Agricultural Law Center 2023a). Based on the recent flurry of activity, it is reasonable to expect federal and state governments will propose and enact even more measures in the near future.

Notably, in April 2023, Arkansas implemented legislation that imposes restrictions on specific foreign investments in land within the state. Precisely, the law introduced two distinct prohibitions: the first barring a prohibited foreign party (PFP) from acquiring agricultural land, and the second prohibiting any acquisition of real property within the state by a "prohibited foreign-party-controlled business" (National Agricultural Law Center 2023d). On October 17, 2023, Arkansas' attorney general ordered a subsidiary of Syngenta Seeds, a company ultimately owned by a Chinese state-owned entity, to divest its ownership interest in about 160 acres of agricultural land due to the restriction prescribed under the newly enacted foreign ownership law. As a result, Arkansas becomes the first in the nation to enforce a state law banning certain foreign entities from owning agricultural land (National Agricultural Law Center 2023d; "Arkansas Orders Chinese Company's Subsidiary to Divest Itself of Agricultural Land", 2023).

In addition to general legislation affecting foreign land ownership, the recent strategic classification of "adversary countries" holds significant implications within the realm of foreign land ownership in the United States. As of June 2023, the U.S. Department of Commerce (DOC) has officially designated China, Russia, Cuba, Venezuela, Iran, and North Korea as "foreign adversaries" (National Agricultural Law Center 2023a). Notably, as of March 2023, fourteen states have proactively enacted some kind of legislative measures aimed at barring entities affiliated with these "adversary" countries from purchasing agricultural land in the United States

(Tesfaye, 2023). For example, Iowa has banned the Chinese government as well as any persons or entities from China from acquiring any real properties located in the state. Similarly, In April 2023, New York State Assemblyman Angelo Santabarbara proposed a ban on foreign adversaries and nations deemed hostile by the U.S. Secretary of Commerce, barring countries such as China from acquiring agricultural land in New York (Reisman, 2023; Williams, 2023). Concurrently, several other states are proposing for similar prohibitory measures. This trend appears to be driven by the escalating tension between Washington and Beijing, as well as a confluence of other international events, which result in increasing concerns about national security. The deteriorating U.S.-China relationship, in particular, has amplified debates surrounding Chinese holdings of U.S. agricultural land and concerns about national security of the U.S. food supply chain.

III. Data and Methods

Enacted by Congress in 1978, the AFIDA is a federal law that requires foreign entities (individuals, businesses, and governments) to report transactions involving agricultural land to the USDA Farm Service Agency. Thus, a foreign entity who acquires, holds, transfers, or disposes of an interest in agricultural land within located within the United States is required to disclose certain information concerning such transactions, investments, and acquisitions. The AFIDA database provides the disclosed information about the foreign entities who hold U.S. agricultural land, which includes the name of the foreign entity, nationality, location, date of acquisition, type of interest, acquisition methods, land use (crop, pasture, forest, and other agriculture), parcel acreage, and more. Specific details about the information included can be found in the Farm Service Agency form (FSA-153).

Here we provide specific details about what variables we used in this research and the methods utilized for analysis. Specifically, our study incorporates several key variables. For acreage, “Number of Acres” denotes total acres acquired by a foreign entity, whereas “Crop”, “Pasture”, “Forest”, and “Other Agriculture” further separate the total acreage by general land usage. For location, we used “State” for categorizing each foreign entity into one of the ten USDA Agricultural Production Regions described in Cooter et al. (2012). Additionally, for a more granular geospatial analysis, “County” and “FIPS” serve as vital tools, enabling the creation of multiple county-level maps to augment the spatial dimension of our research. We also used “Country” to classify all foreign entities into three overarching categories: “US Allies”, “Adversaries”, and “Neutral”. For ownership structure, “acquisition method” signifies the recorded status at the time of land purchase, whereas “type of interest” encapsulates the current ownership status. This enables us to distinguish foreign entities with either whole ownership or long-term leases, with specific emphasis on the latter.

In addition to the variables mentioned above, “Owner Name” shows the precise name of the foreign entities, and we applied keyword inclusion with Boolean conditions to search and classify entities with ties to energy or natural resource sectors. The categorization yields seven distinct categories: “forestry”, “solar energy”, “wind energy”, “metal”, “natural resources”, “other energy”, and “not energy”. Specifically, entities featuring keywords such as “timber”, “wood”, or “forest” are categorized as “forestry”; those with “solar” are designated as “solar energy”; entities containing “wind” are categorized as “wind energy”; those featuring items like “copper”, “metal”, or “mineral” fall under “metal”; entities referencing “resource” or “natural

resource” are classified as “natural resource”; those incorporating “energy” are categorized as “other energy”; while entities not conforming to any of these keyword criteria are group under “not energy”. This categorization schema is instrumental in the creation of Figure 5.

IV. Results

Current Situation

The most recently available AFIDA data (AFIDA 2021) indicates that foreign entities held around 40 million acres of U.S. agricultural land nationwide as of 2021. This accounts for 3.1% of all privately held agricultural land and nearly 1.8% of the total land in the U.S. Specifically, in the context of New York, 434 foreign entities acquired 1670 parcels of agricultural land. This is equivalent to 768,727 acres of agricultural land, constituting 3.44%² of all privately held agricultural land and 2.54% of total land area in the state of New York (FSA-USDA 2021). The percentage of foreign held agricultural land over all privately held agricultural land in all states and how they change from 2020 to 2021 can be found in Appendix Figure 1.

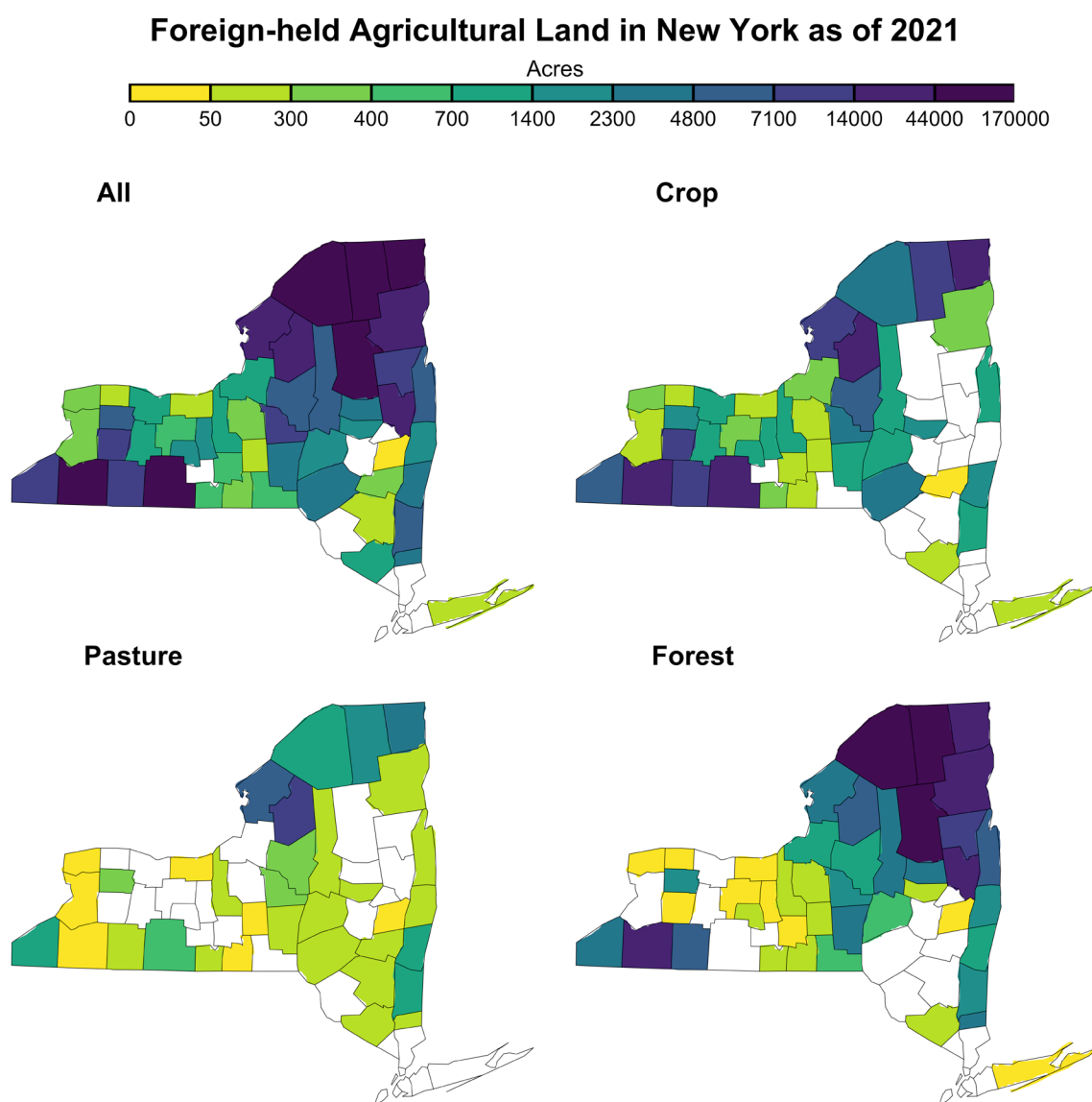
However, a very recent report (FSA-USDA 2022), published on December 20, 2023, provides additional insights for the year 2022. It reveals a notable increase in foreign interests in U.S. farmland within a single year, both at the national and state levels. Nationally, foreign holdings of U.S. farmland increased from around 40 million acres to 43.4 million acres, reflecting an 8.5% increase. In the case of New York, the acreage surged from 768,727 to 959,351 acres within 2022,

² In the AFIDA data, we observed the inclusion of non-agricultural land in the statistics. While the acreage of these non-agricultural land parcels is relatively small compared to other categories, it's important to note this inclusion. If we exclude the non-agricultural land, the total for New York in 2021 would be 755,963 acres instead of 768,727. Moving forward, we will continue to incorporate non-agricultural land into our analysis, as it aligns with the information presented in annual AFIDA reports. The 3.44% was calculated using 768,727 acres.

representing approximately a 24.8% increase. As a comparison, from 2020 to 2021, the acreage of farmland acquired by foreign entities increased by 19,200 acres, rising from 749,527 to 768,727 acres. For the purpose of this report, most of the analyses and visualizations are based on the AFIDA data prior to 2022 (through Dec 31, 2021). Future analyses can be conducted for the year 2022 or if newer AFIDA data becomes available. This ensures the continuous examination and exploration of trends in foreign ownership of U.S. farmland, allowing for an updated and comprehensive understanding of the evolving landscape in subsequent years.

Figure 1 visualizes the acreage of foreign-held farmland in New York at the county level, categorized by its current land use as of the year 2021. The visual representation underscores some noteworthy spatial patterns: (1) foreign-held forest land is heavily concentrated in the Adirondacks and Central New York; (2) foreign-held cropland exhibits a relatively dispersed distribution compared to forest land, with a heightened presence in the Adirondacks, Central New York, and the Southern Tier; (3) foreign interests in pastureland are substantially lower compared to the previous two categories. A map visualization for the entire United States is also provided in the Appendix (see Appendix Figure 2).

Figure 1: Foreign-Held Agricultural Land in New York as of 2021

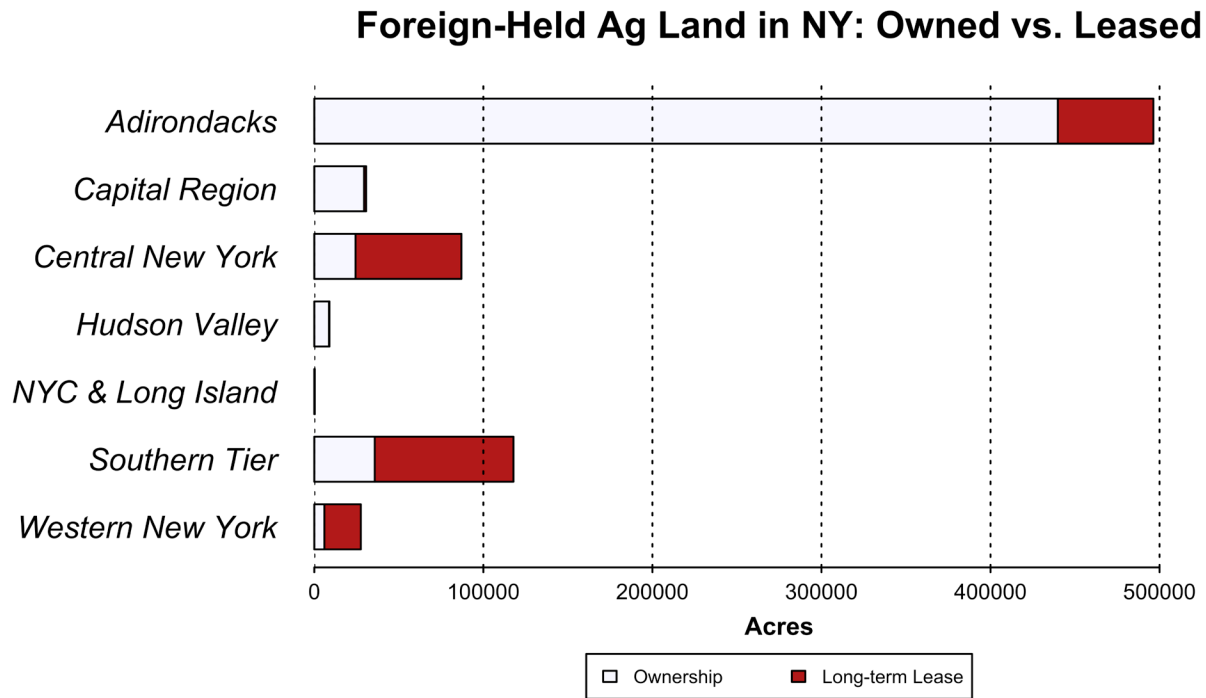


Source: AFIDA Database; Created by Wendong Zhang and Fangyao Wang (Cornell)

Long-Term Lease vs. Ownership

An important aspect of foreign land acquisition pertains to the type of ownership structure employed. Figure 2 delineates the acreage of foreign interests in agricultural land in New York across seven major regions³ categorizing the ownership type into two main structures: outright ownership and long-term lease.

Figure 2: Foreign-Held Ag Land in NY: Owned vs. Leased, as of 2021



³ Seven Regions in New York State

Adirondacks: St. Lawrence, Franklin, Clinton, Essex, Herkimer, Fulton, Hamilton, Warren

Capital Region: Montgomery, Schenectady, Schoharie, Albany, Greene, Columbia, Rensselaer, Saratoga, Washington

Central New York: Jefferson, Oswego, Lewis, Oneida, Onondaga, Madison, Cortland, Chenango, Broome, Otsego, Delaware

Hudson Valley: Sullivan, Ulster, Dutchess, Orange, Putnam, Rockland, Westchester

NYC & Long Island: New York, Kings, Richmond, Bronx, Queens, Nassau, Suffolk

Southern Tier: Chautauqua, Cattaraugus, Allegany, Steuben, Chemung, Tioga

Western New York: Cayuga, Tompkins, Schuyler, Seneca, Yates, Ontario, Wayne, Monroe, Livingston, Orleans, Genesee, Wyoming, Niagara, Erie

Table 1: Foreign Interests in New York Agricultural Land: Overview

Foreign Interests in New York Agricultural Land: Overview

New York State Regions	Ownership				Long-term Lease			
	All	Crop	Pasture	Forest	All	Crop	Pasture	Forest
Adirondacks	439841	6266	5044	415883	56540	51450	1408	2456
Capital Region	29450	3290	1790	23442	1237	1237	0	0
Central New York	24373	5956	2887	11193	62661	38477	13611	5626
Hudson Valley	8681	897	934	4317	312	140	99	61
NYC & Long Island	279	232	0	47	20	0	0	0
Southern Tier	35758	1085	1396	30597	82046	79724	101	1726
Western New York	5986	2899	525	323	21543	18426	4	2185
Total	544368	20625	12576	485803	224359	189454	15224	12055

Note:

Unit: Acres (rounded to integer)

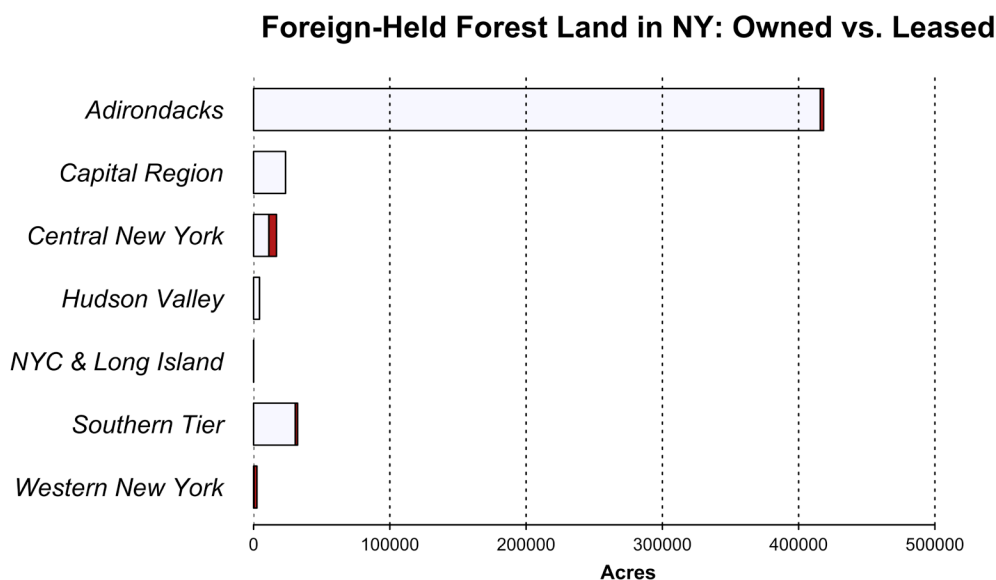
Data Source: Agricultural Foreign Investment Disclosure Act (AFIDA), 2021

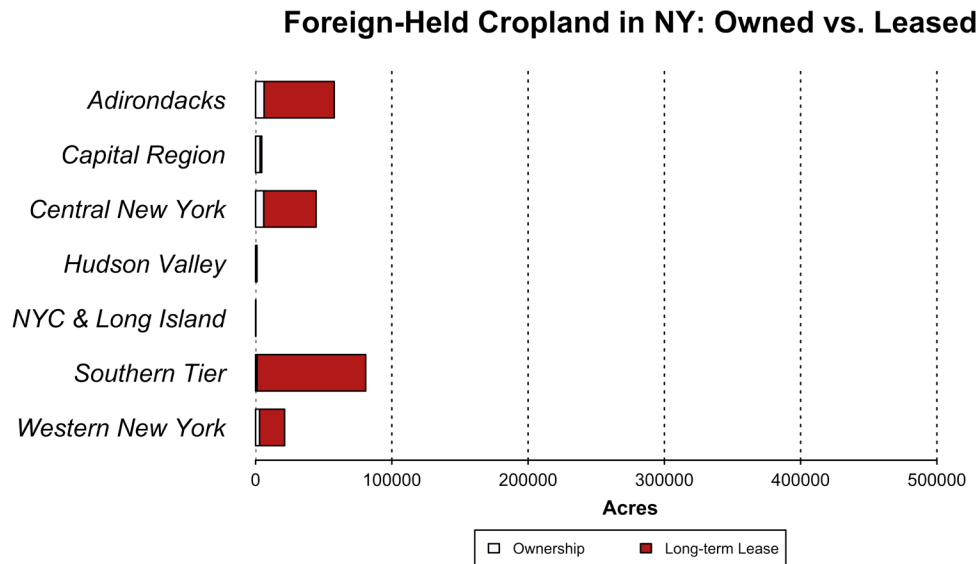


Table 1 further categorizes by both ownership structure and land usage type, providing a more detailed breakdown of foreign holdings in different agricultural contexts within the state. In the 768,727 acres of agricultural land acquired by foreign entities, forest land accounts for 64.76%, and cropland constitutes approximately 27.33%.

When examining farmland fully owned by foreign investors, 89.24% comprises forest land, with a predominant concentration in the Adirondacks region. In contrast, for farmland held on long-term leases, 84.44% consists of crop land. This distinctive ownership structure becomes more apparent through two bar plots (Figure 3) illustrating the breakdown of agricultural land owned or leased by foreign entities. The first plot highlights the distribution of forest land, while the second plot focuses on crop land. These visual representations provide a clear snapshot of the contrasting patterns in land use based on ownership types.

Figure 3: Foreign-Held Cropland & Forest Land in NY: Owned vs. Leased, as of 2021





Furthermore, Taylor et al. (2023) and Zhang et al. (2024) highlights a salient trend: the majority of the recent agricultural land acquisition by foreign entities leans heavily towards long-term leases rather than whole ownership. The AFIDA requires respondents to specify one of six ownership structures for the land they have acquired: (1) whole ownership; (2) partial ownership; (3) life estate; (4) trust beneficiary; (5) purchase contract; (6) other (as per FSA-153). Category 6 mainly consists of long-term leases of 10-years or longer. We label the data from category 6 as “leased”, juxtaposed with the amalgamation of the other five categories, collectively termed “owned”.

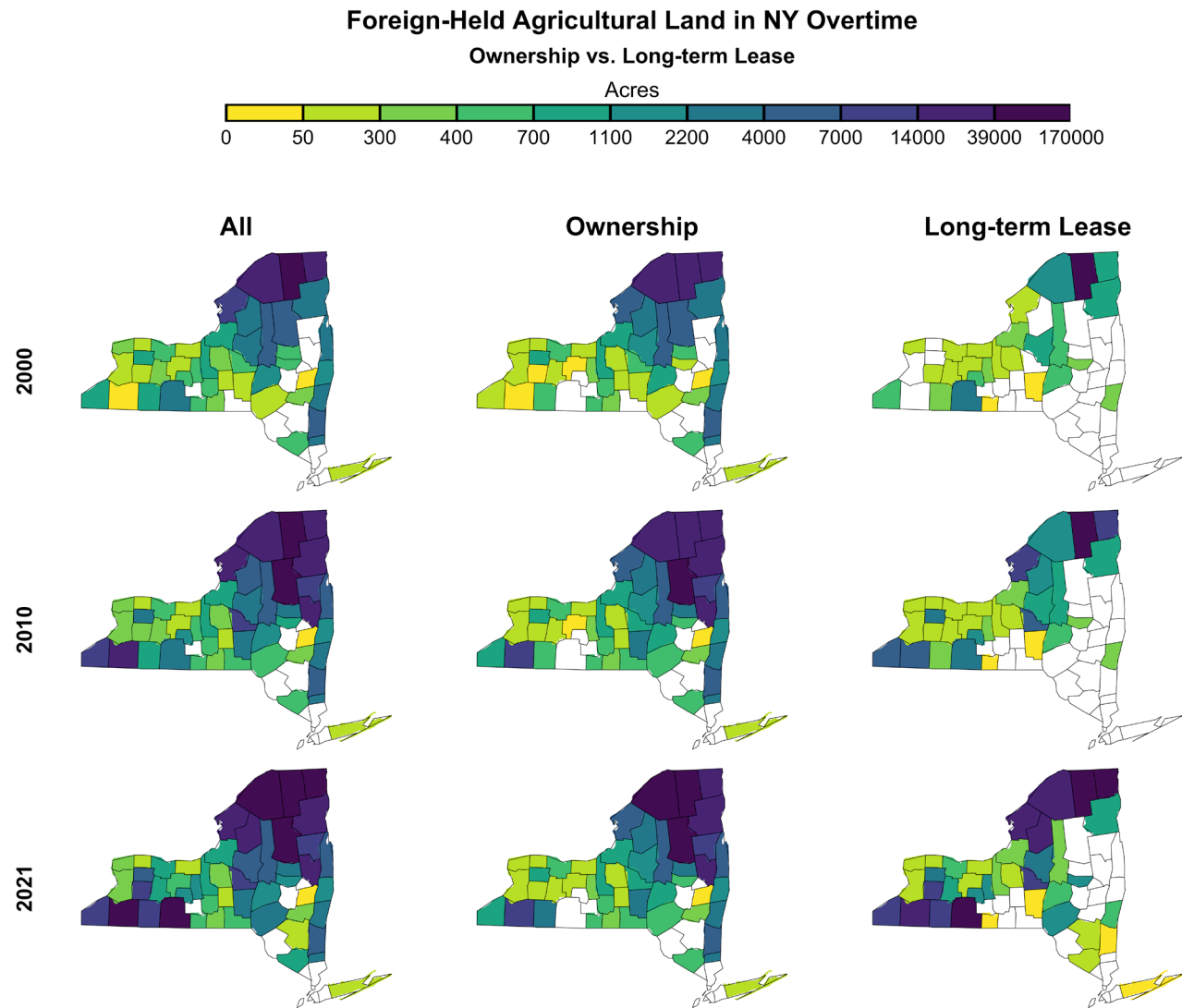
Figure 4 unveils a compelling representation of this distinction through three-by-three maps, where each row corresponds to a specific year (2000, 2010, and 2021), and each column stands for a category of ownership type (all data, owned, or leased). We can observe the noticeable increase of foreign-held farmland by long-term lease from 2000 to 2021, as shown in the third column. This graphical depiction provides further empirical evidence affirming that leasing has

emerged as the primary catalyst propelling the growing foreign interests in U.S. farmland from in the last few decades. This pattern is not only pronounced for the state of New York, but also for the whole country, which is shown in Appendix Figure 3.

Similar findings can be inferred from Figure 5, illustrating a significant increase in the percentage of agricultural land held on long-term lease over the past 20 years. This trend is particularly pronounced in certain counties from the Southern Tier, Central New York, and the Hudson Valley regions.

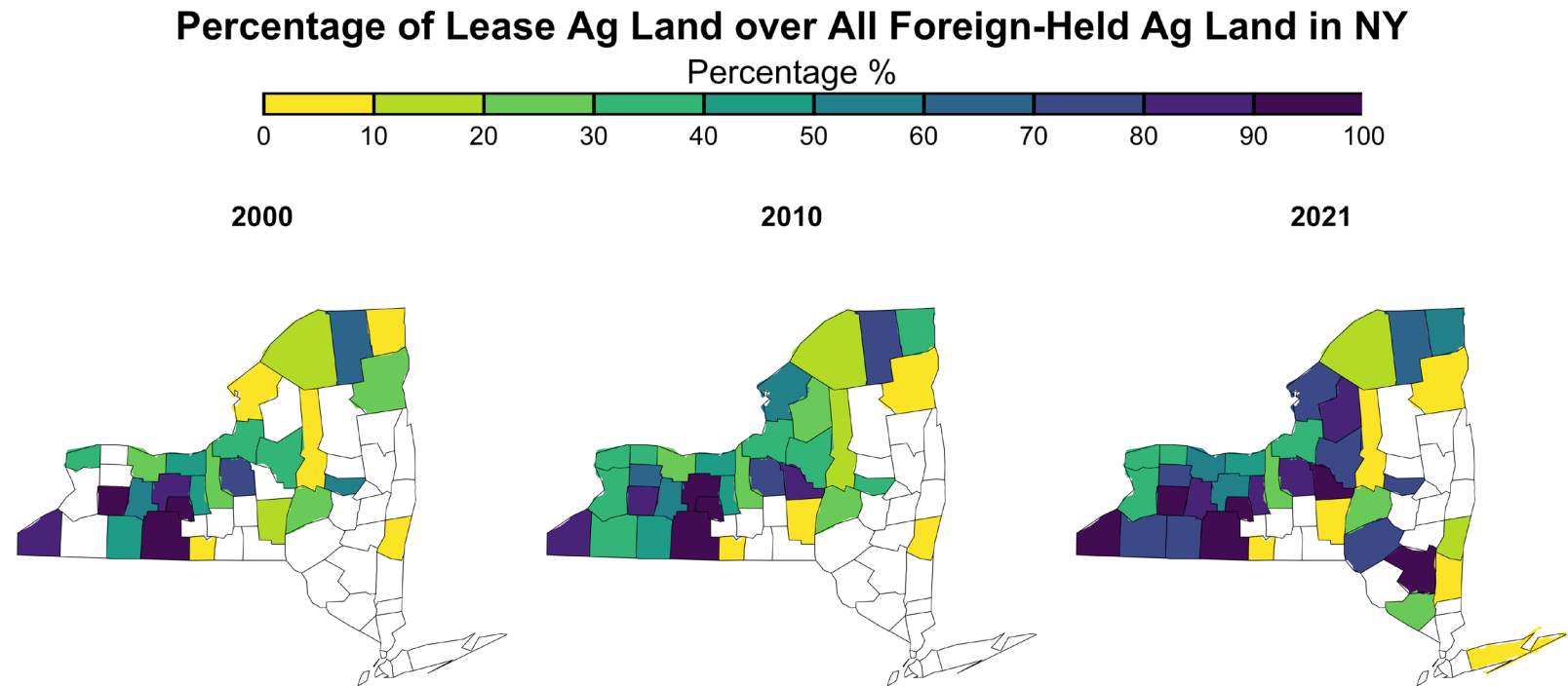
We also calculated the percentage of privately held cropland by all foreign owners as of the year 2021, using both the AFIDA data and the National Agricultural Statistics Service (NASS, 2017). Figure 6 encapsulates these percentages, providing insights into the extent of foreign entity presence in each county. Notably, the percentage for long-term leases (third column) has witnessed a significant increase from 2000 to 2020, while the maps for full ownership (second column) have remained relatively unchanged. This observation further affirms that long-term leases have emerged as the primary driver of foreign land acquisitions in recent decades. A map visualization for the entire United States is provided in the Appendix (see Appendix Figure 4).

Figure 4: Foreign-Held Agricultural Land in NY: Ownership vs. Long-term Lease, 2000-2021



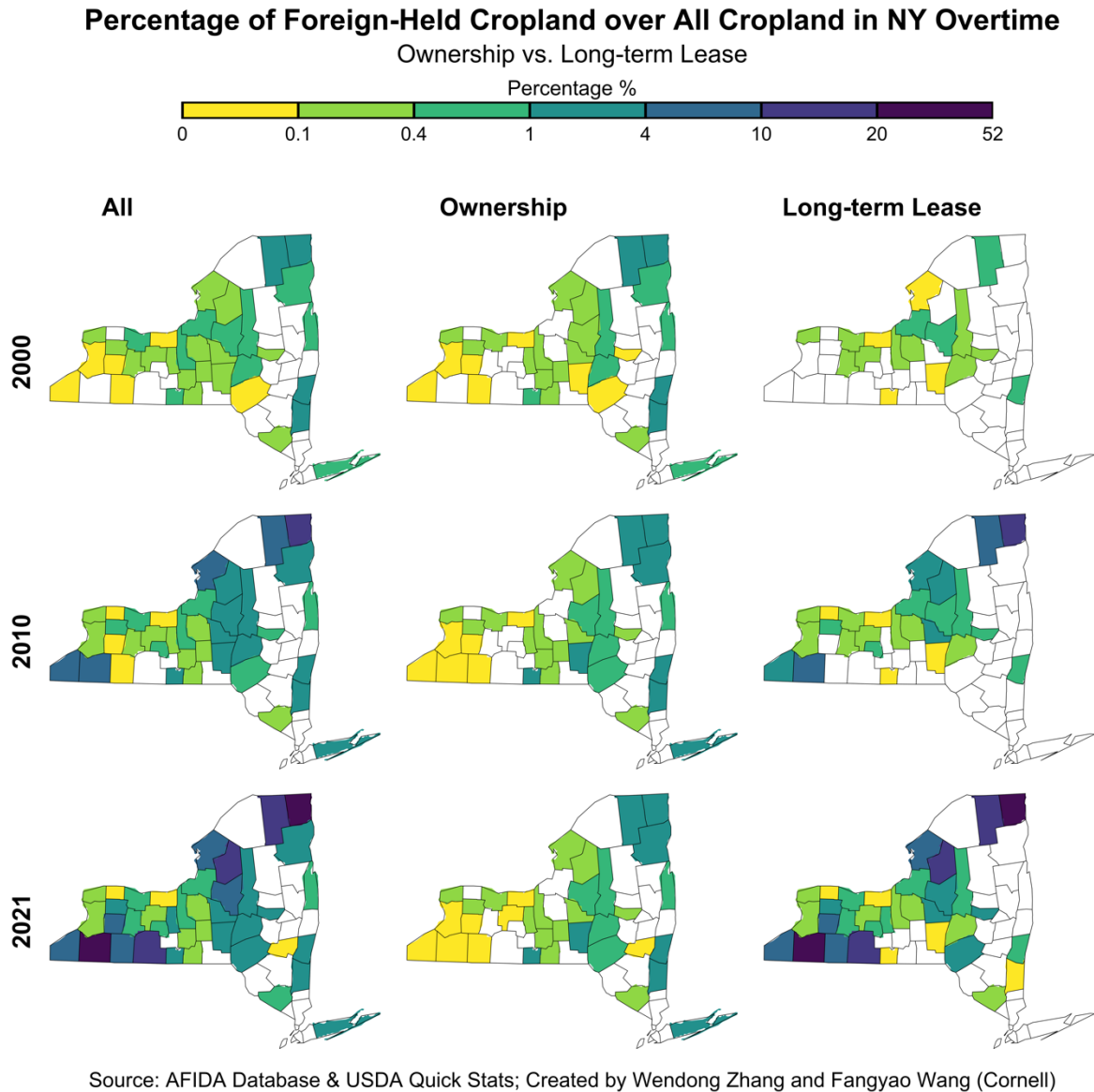
Source: AFIDA Database; Created by Wendong Zhang and Fangyao Wang (Cornell)

Figure 5: Percentage of Lease Ag Land over All Foreign-Held Ag Land in NY, 2000-2021



Source: AFIDA Database; Created by Wendong Zhang and Fangyao Wang (Cornell)

Figure 6: Percentage of Foreign-Held Cropland over All Cropland in NY 2000-2021

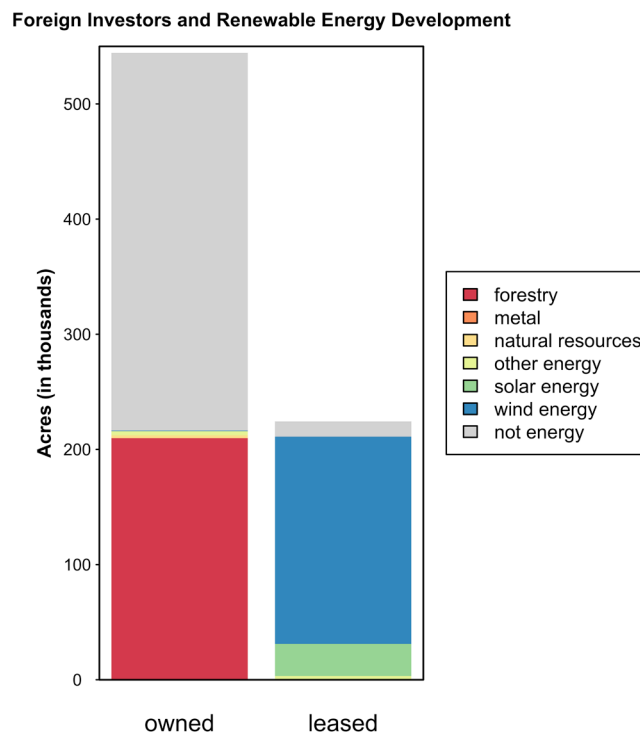


Renewable Energy Development

According to Taylor et al. (2023) and Zhang et al. (2024), the impetus behind the acquisition of U.S. land in recent years predominantly centers on renewable energy production. By scrutinizing the names of the foreign entities, we gleaned valuable insights into the intended purpose of their land usage. Our categorization process classified these entities into 7 categories by the inclusion

of specific keywords: (1) forestry; (2) metal; (3) natural resources; (4) other energy; (5) solar energy; (6) wind energy; (7) not energy. As depicted in Figure 7, most of the land leased by foreign entities are used for wind and solar energy development, constituting a substantial 92.65% share, whereas the land held in whole ownership focuses more on wood and timber production and other non-energy-related activities.

Figure 7: Foreign Investors and Renewable Energy Development, as of 2021



Note: wind energy means “wind” is included in the name of foreign investor.

When we combine the revelation that a significant proportion of recently acquired land by foreign entities is held under long-term leases, coupled with the significant presence of wind and solar energy development within the leased category, a compelling narrative emerges. It strongly

suggests that the recent foreign investment landscape in U.S. farmland is primarily geared towards renewable energy development, rather than agricultural or food production.

U.S. Allies vs “Adversary” Countries

Canada, Cayman Islands, Denmark, UK, and Germany emerge as the top five investors in New York, collectively holding an impressive 74.41% of all foreign-owned farmland. Canada stands out as the largest owner of foreign-held U.S. agricultural land, owning 251,534 acres or 32.72% of the total foreign-held farmland. In contrast, among the “adversary” countries, China owns no agricultural land, and all the “adversary” countries combined hold a mere 0.06179%. That said, the attention to Chinese holdings of U.S. agricultural land is ever-increasing, with the recent example being Chinese billionaire Chen Tianqiao being the second-largest foreign owner of US land (Pendleton 2024). Detailed comparisons between the top 5 U.S. allies and the “adversary” countries and their total acreage held in the seven regions are shown in Table 2.

Table 2: Foreign Interests of Agricultural Land in New York: Allies vs. ‘Adversaries’, as of 2021

Foreign Interests of Agricultural Land in New York: Allies vs. 'Adversaries'										
	US Allies					'Adversaries'				
	Canada	Cayman Islands	Denmark	United Kingdom	Germany	China	Venezuela	Cuba	Iran	Russia
Adirondacks	133383	106175	76135	47958	33754	0	0	0	0	0
Capital Region	1425	0	19167	2108	602	0	0	0	0	0
Central New York	23495	0	0	11987	9494	0	0	0	0	0
Hudson Valley	1	0	91	289	1045	0	120	0	355	0
NYC & Long Island	140	0	0	92	47	0	0	0	0	0
Southern Tier	75943	0	0	2386	6528	0	0	0	0	0
Western New York	17148	0	587	816	1239	0	0	0	0	0
Total	251534	106175	95980	65635	52709	0	120	0	355	0

Note:

Unit: Acres (rounded to integer)

Data Source: Agricultural Foreign Investment Disclosure Act (AFIDA), 2021

¹ The top 5 U.S. allies at national level are Canada, Netherlands, Italy, United Kingdom, and Germany

² The 5 U.S. 'adversaries' were designated by the U.S. Department of Commerce

In Appendix Table A, we present an overview of the top 5 foreign investors in agricultural land in each of the seven regions of New York. The table includes key details such as their company names, acreage purchased or leased, ownership structure, country of origin, and the year of acquisition. Notably, MWF Adirondacks, LLC, a company based in the Cayman Islands, stands out as the largest foreign landowner with 106,175 acres in the Adirondacks region since 2013. This holding represents the most extensive single-company farmland ownership in the state, and single-handedly makes Cayman Islands as the second largest foreign country of agricultural landowner in New York. Canadian investors, traditionally being the biggest group of foreign owners in U.S. farmland, are prominently featured on the list with nine companies. Additionally, multiple foreign investors from Denmark, the United Kingdom, and Germany emerge as major players in New York farmland.

In the AFIDA 2021 data, there are 11 companies missing information on their country of affiliation. Notably, Connor Forest Industries, Inc. owns 17,440 acres of forest land in Allegany and Franklin; Copenhagen Wind Farm, LLC holds 11,285 acres of pastureland in Jefferson and Lewis on a long-term lease; Lyme New York Headwaters holds 3,175 acres of forest land in Cattaraugus on a long-term lease. Information for all the companies missing their country of origin can be found in Appendix Table B.

In Appendix Table C, we showcase the degree of presence for each foreign country in each of the seven regions of New York. The table highlights the top 5 countries contributing to foreign ownership in each region, excluding companies without information on the country of origin. In addition to the previously mentioned top five countries (Canada, Cayman Islands, Denmark, UK,

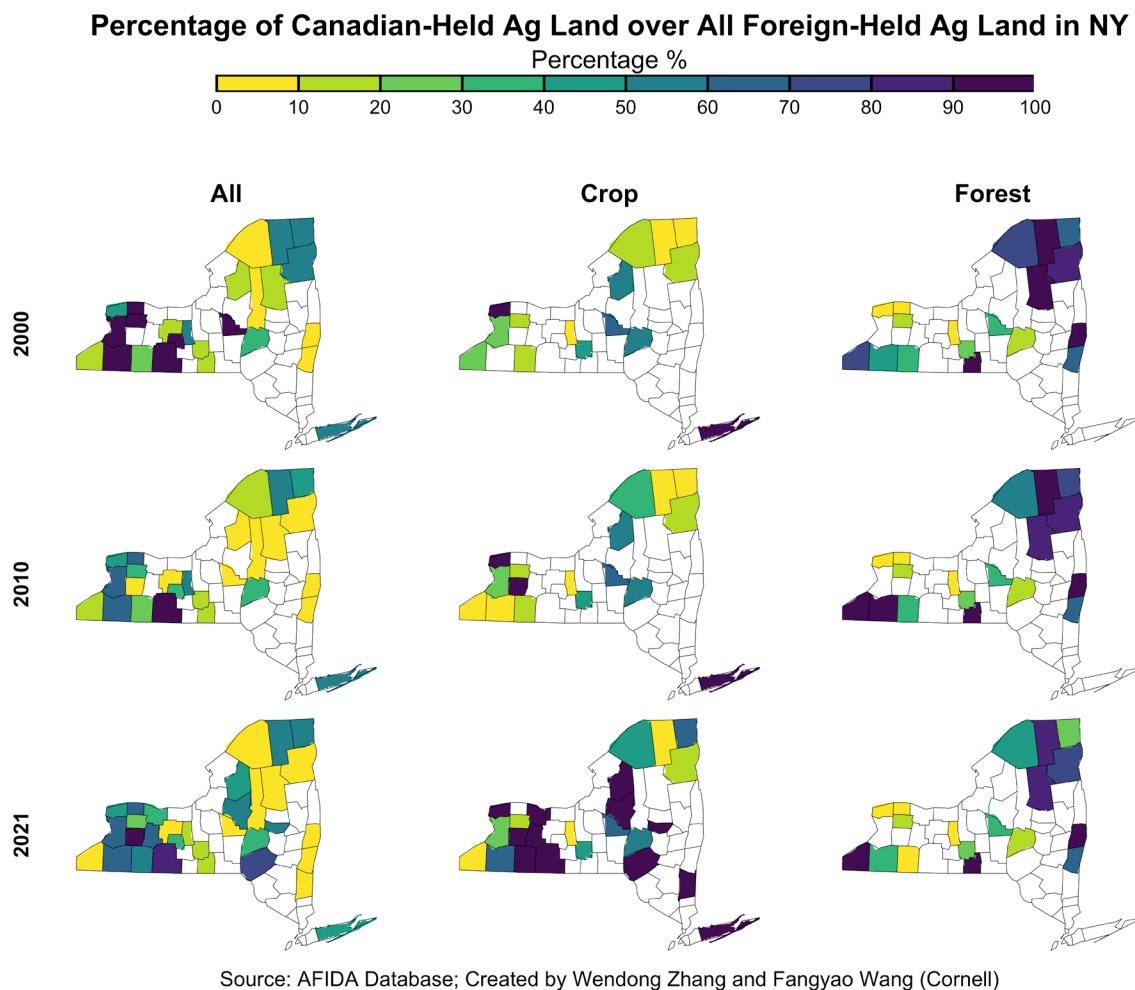
and Germany), notable mentions include Netherlands, Spain, Portugal, Switzerland, Panama, Argentina, Austria, Luxembourg, France, and Saint Vincent and the Grenadines. Importantly, all these countries are either solid U.S. Allies or neutral.

Historically, Canada has consistently held the position as the largest agricultural landowner among all foreign countries, both nationally in the U.S. and specifically within the state of New York. In New York, out of the 1,670 parcels of agricultural land acquired by foreign entities, 1,107 are owned or leased by 243 Canadian entities, totaling 251,534 acres.

Figure 8 provides a clear illustration of this fact, depicting the percentage of Canadian-held agricultural land over all foreign-acquired farmland. Each row corresponds to a specific year (2000, 2010, and 2021), and each column represents a category of ownership type (all data, owned, or leased). The figure reveals that Canada had already made substantial investments in forest land in the Adirondacks region as of the year 2000. Although the percentage decreased in some counties over time due to the entry of new players, such as MWF Adirondacks, LLC from the Cayman Islands, Canada's historical significance in forest land investment is evident.

Examining the trend in cropland, a substantial increase in the percentages over the two decades is observed, particularly in counties from the Southern Tier, Central New York, and Western New York, where shares surpass 90%.

Figure 8: Percentage of Canadian-Held Ag Land over All Foreign-Held Ag Land in NY



V. Discussions

Foreign Ownership of Agricultural and Food Processing Facilities and CAFOs

Beyond concerns toward foreign entities, particularly those from China, acquiring U.S. farmland, there is a growing apprehension regarding foreign ownership extending to agricultural processing facilities and Concentrated Animal Feeding Operations (CAFOs). This broader spectrum of foreign ownership could raise potential threats to the domestic food supply chain and local communities.

In recent years, one of the most noteworthy instances of foreign acquisition in the American food industry was the 2013 purchase of Smithfield Foods by the Chinese company WH Group for \$4.7 billion (Schneider and Dennis, 2013). This transaction resulted in the formation of the world's largest pork producer through the amalgamation of the two entities. Previously known as Shuanghui, WH Group is purported to have received subsidies from the Chinese government. Significantly, this acquisition stands out as the largest Chinese takeover of an American company to date.

Brazilian companies are also important players in the American food system. Notably, JBS, a meatpacker company with affiliations to the Brazilian government, acquired Swift Foods Co. in 2007 (Jelmayer, 2007) and purchased the controlling stake of Pilgrim's Pride in 2009 ("Brazil's JBS Buys Majority Stake in Pilgrim's Pride for \$800M", 2009; Thomas, 2022). Furthermore, Marfrig Global Foods, another Brazilian meatpacker company, has 31% ownership of the National Beef Packing Company. The latter, ranking as the fourth-largest beef processor in the United States, is presently predominantly owned by foreign entities, with 80% foreign ownership (Walljasper, 2019). These acquisitions and foreign-heavy ownership structures have raised alarms among local communities and legislators.

This issue was also brought up during a recent hearing titled "Foreign Ownership in U.S. Agriculture" by the Senate Agricultural Committee, where Senator Cory Booker expressed apprehensions about multiple facets of the food system falling under the control of foreign corporations, encompassing seeds, meat processing, and grocery stores (Rapoza, 2023).

The prevailing concern revolves around the potential risk to U.S. food security, as the increased foreign ownership could pave the way for the introduction of lower-quality food products into American households. For example, USDA temporarily stopped the import of Brazilian beef in 2017 due to public health concerns, sanitary conditions, and animal health issues (Walljasper, 2019; Phillips, 2017).

This paper does not furnish a comprehensive analysis of the existing structure of foreign ownership in agricultural and food processing facilities, including Concentrated Animal Feeding Operations (CAFOs). Nevertheless, it is important to underscore that this facet is of equal significance to that of agricultural land ownership. The lack of studies in this regard opens avenues for future research to delve into this crucial aspect, thereby addressing the complexities associated with foreign ownership in food processing facilities and CAFOs and how that might affect national security.

Location and Land Use

The geographical location and land use purposes of foreign interests in the United States also raise public concerns for national security. Some argue that AFIDA data lacks transparency and accuracy (Tesfaye, 2023; National Agricultural Law Center, 2023c), and others suggest that the specific locations of the foreign-held land and the purpose of the purchases might have more significant impact on national security. However, currently we do not have the information on the specific details of the underlying purposes of these acquisitions and their accurate proximity to critical security facilities, such as government agencies and military bases. Zhang et al. (2024)

provided some preliminary insights into this issue by analyzing the TIGER/Line Shapefile for military installations and Rural-Urban Continuum data in tandem with the AFIDA data, which could serve as a starting point for future studies to delve deeper into issues related to national security, location, and land use purpose.

VI. Conclusions and Policy Implications

This article presents a comprehensive analysis of the landscape of foreign land ownership in both the whole United States and specifically New York state utilizing data from AFIDA. Our investigation reveals that over the past two decades, while foreign interests in U.S. agricultural land have demonstrated a steady increase, a significant portion of the recently acquired farmland by foreign entities is held under long-term leaseholds rather than being held in full ownership. Furthermore, our findings indicate that the primary acquirers of agricultural land are energy development and natural resource entities, as opposed to entities primarily engaged in agricultural or food production. This distinction holds particularly true for those entities holding long-term leases. Specifically, the emergence of wind and solar energy farms represents a notable trend of the recent foreign investment in U.S. agricultural land, and their effect on the U.S. food supply chain is likely limited. Another crucial aspect that has often been overlooked is the distribution of foreign-held farmland among “adversary” countries and U.S. allies. Notably, “adversary” countries hold a mere 1% of all foreign held farmland, with U.S. Allies accounting for a substantial 87% of said holdings. The historical presence of “adversary” countries in the U.S. agricultural land has been minor, and our analysis suggests that this trend is likely to persist in the future given recently more states have enacted or are proposing for prohibiting or limiting these countries from obtaining U.S. farmland.

This study is subject to several limitations that warrant discussion. First, due to the absence of precise information regarding the intended land usage within the AFIDA dataset, we resorted to categorizing foreign entities (energy or natural resource) based on the presence of specific keywords in the entities' names. It is important to acknowledge that this approach may not comprehensively capture the actual land usage intentions of all these entities, which results in some level of uncertainty. Second, concerns have been raised by various stakeholders regarding the accuracy, transparency, and reliability of the AFIDA data. Notably, members of the House of Agricultural Committee (Tesfaye, 2023), US House Republicans (National Agricultural Law Center, 2023c), and other policy makers have expressed reservations about the AFIDA. They argue that the data may suffer from potential underreporting of foreign ownership of agricultural land, raising doubts about its completeness and accuracy. Recently, on December 18, 2023, the Farm Service Agency of the USDA issued a notice in the Federal Register, indicating plans to amend the FSA-153 form to gain more comprehensive insights into foreign interests in agricultural land, especially for the companies in wind turbine and solar panel industries with long-term leasehold. This initiative is likely in response to the current recording lacking specific details, such as the number of wind turbines, solar panels, or photovoltaics established. This absence of information could potentially lead to an overstatement of foreign renewable energy development activities on U.S. agricultural land (Callenbach and Anderson, 2023).

As new data becomes available in the future, prospective research endeavors could extend the scope of this study to encompass the present state of foreign ownership within the broader food supply chain, incorporating areas like concentrated animal feeding operations (CAFOs).

Additionally, there is considerable potential for investigations into the role of location and land

use in this context. For instance, a quantitative exploration of proximity to military installations could be undertaken when relevant data becomes available. Undertaking such studies would not only contribute to the understanding of foreign ownership within the U.S. food supply chain but also provide invaluable insights into policy considerations regarding national security. The outcomes of such research endeavors could offer perspectives for the development of policies safeguarding both economic interests and national security in the context of foreign ownership in critical sectors.

Future research endeavors also hold promise in shedding light on the evolving landscape of foreign ownership of U.S. agricultural land. These future studies may be directed towards conducting rigorous impact evaluations, specifically focusing on the surge in legislative activities that have marked the year 2023. A particular area of interest lies in assessing the effectiveness of these legislative efforts, especially concerning "adversary" countries such as China. Such analyses could offer invaluable insights into the practical implications of the regulatory measures on Chinese entities aspiring to acquire or currently possessing U.S. farmland. Furthermore, it is prudent to consider the potential comparative dimension of these investigations. Such a comparative approach would enable a longitudinal assessment of the impact of legislative actions and policy changes on the structure of foreign ownership within the United States' agricultural sector. These future research trajectories hold the promise of enriching our understanding of the intricate dynamics that underlie foreign land acquisition in the United States, offering a deeper comprehension of the consequences of policy interventions in this domain.

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Appendix

Appendix Table A: Top 5 Foreign Companies in Each New York State Region

Top 5 Foreign Companies in Each New York State Region					
New York State Region	Company Name	Acres	Type of Interest	Country	Acquisition Year
Adirondacks	MWF Adirondacks, LLC	106175	Ownership	Cayman Islands	2013
Adirondacks	Upper Hudson Woodlands ATP, LP	76082	Ownership	Denmark	2009
Adirondacks	DOMTAR INDUSTRIES, INC.	72684	Ownership	Canada	1992
Adirondacks	INVENERGY WIND DEVELOPMENT LLC	31994	Long-term Lease	Cambodia	2016
Adirondacks	JT Granshue Timberland, LLC	18595	Ownership	Austria	2020
Capital Region	Upper Hudson Woodlands ATP, LP	19132	Ownership	Denmark	2009
Capital Region	APALCHE CORP., N.V.	1798	Ownership	Argentina	1979
Capital Region	TACONIC FORESTRY, INC.	1795	Ownership	United Kingdom	1984
Capital Region	ALFAS N V	783	Ownership	Netherlands	1977
Capital Region	Invenergy Solar Development North America, LLC	684	Long-term Lease	Canada	2020
Central New York	INVENERGY WIND DEVELOPMENT LLC	16400	Long-term Lease	Canada	2013
Central New York	Copenhagen Wind Farm, LLC	11285	Long-term Lease	Unknown	2018
Central New York	ST. LAWRENCE WINDPOWER, L.L.C.	8235	Long-term Lease	Spain	2005
Central New York	Geronimo Solar Energy, LLC	6771	Long-term Lease	United Kingdom	2019
Central New York	LUCKY STAR RANCH CORP.	4972	Ownership	Germany	1978
Hudson Valley	STICHTING N.Y. PHILLIPSTOWN FONDS	2426	Ownership	Netherlands	1977
Hudson Valley	T.M.R. HOLDING, LTD.	1319	Ownership	Saint Vincent And The Grenadines	1979

Hudson Valley	EIGHT BELLS ASSOCIATES	1300	Ownership	Switzerland	1976
Hudson Valley	QUAKER HILLS HOLDING CORP.	981	Ownership	Germany	1979
Hudson Valley	PLYMOUTH HILL HOLDING LTD.	681	Ownership	Panama	1980
NYC & Long Island	MARLAKE ASSOCIATES	140	Ownership	Canada	1974
NYC & Long Island	FIXAN PROPERTIES OF NEW YORK	92	Ownership	United Kingdom	1991
NYC & Long Island	METZGER, ILSE	47	Ownership	Germany	1965
NYC & Long Island	East Setauket Solar Project, LLC	20	Long-term Lease	Australia	2020
Southern Tier	INVENERGY WIND DEVELOPMENT LLC	56108	Long-term Lease	Canada	2018
Southern Tier	JT Allegheny Timberland, LLC	8958	Ownership	Austria	2020
Southern Tier	ARKWRIGHT SUMMIT WIND FARM, L.L.C.	6633	Long-term Lease	Portugal	2010
Southern Tier	Baron Winds, LLC	6433	Long-term Lease	Germany	2021
Southern Tier	Big Oak, LLC	5137	Ownership	Luxembourg	2015
Western New York	INVENERGY WIND DEVELOPMENT LLC	9166	Long-term Lease	Canada	2018
Western New York	Invenergy Solar Development North America, LLC	2734	Long-term Lease	Canada	2019
Western New York	Invenergy Solar Project Development, LLC	2262	Long-term Lease	Canada	2019
Western New York	NEW YORK WINDS, L.L.C.	1724	Long-term Lease	Spain	2007
Western New York	Alabama Solar Park LLC	1291	Long-term Lease	Portugal	2021
<i>Note:</i>					
Unit: Acres (rounded to integer)					
Data Source: Agricultural Foreign Investment Disclosure Act (AFIDA), 2021					

Appendix Table B: Foreign Companies Holding NY Agricultural Land Without Country Name

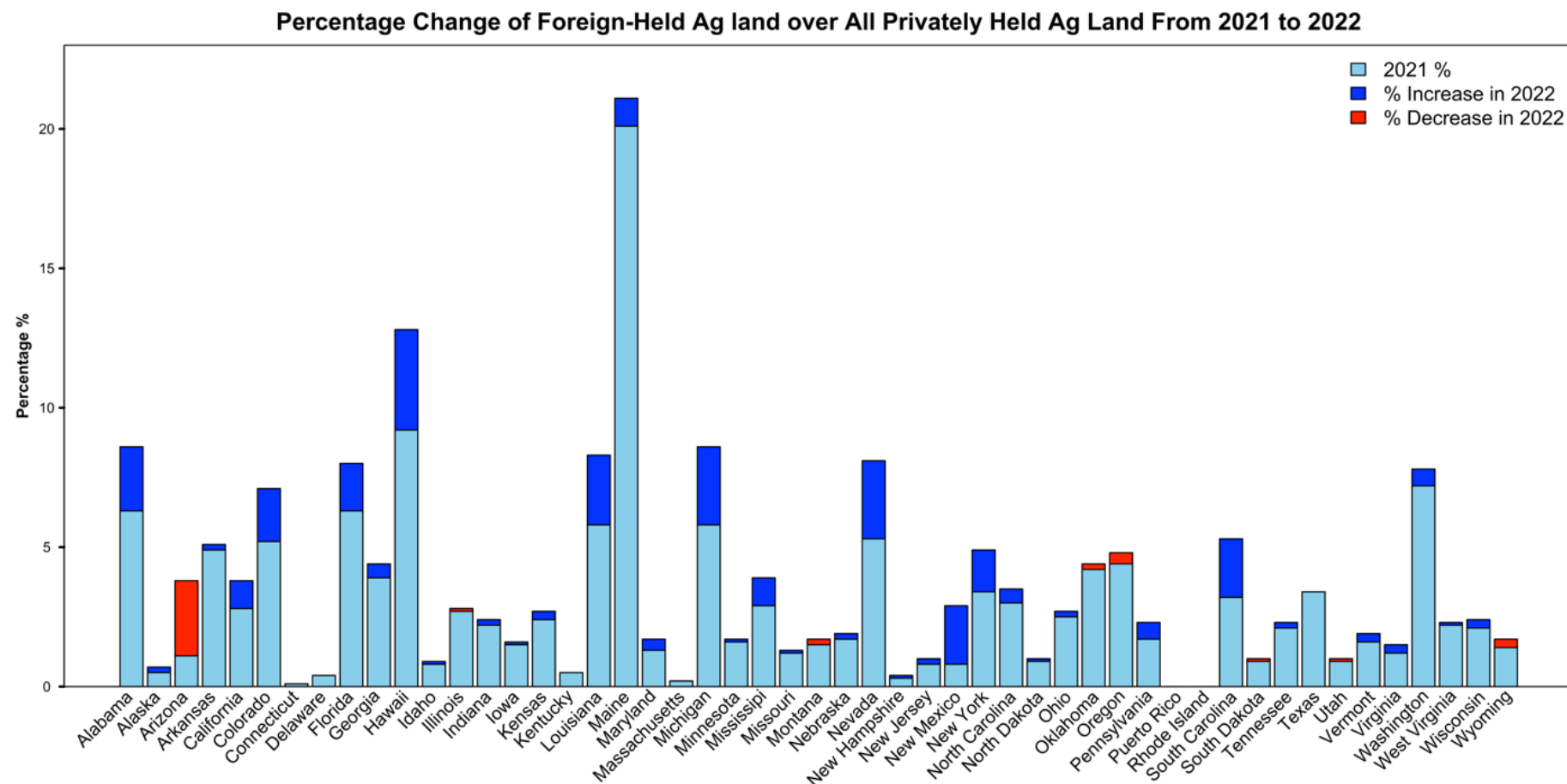
Foreign Companies Holding NY Agricultural Land Without Country Name					
New York State Region	Company Name	Acres	Type of Interest	Country	Acquisition Year
Adirondacks	CONNOR FOREST INDUSTRIES, INC.	17049	Ownership	Unknown	1982
Central New York	Copenhagen Wind Farm, LLC	11285	Long-term Lease	Unknown	2018
Central New York	Essroc Cement Corp.	562	Ownership	Unknown	2016
Central New York	Lehigh Hanson ECC, Inc.	562	Ownership	Unknown	2017
Central New York	VIKTORIA FARMS, INC.	278	Ownership	Unknown	1989
Southern Tier	Lyme New York Headwaters, LLC	3175	Ownership	Unknown	2018
Southern Tier	CONNOR FOREST INDUSTRIES, INC.	391	Ownership	Unknown	1982
Southern Tier	BALSIGER, FRITZ & BRIGITTE	325	Ownership	Unknown	1992
Southern Tier	LYME ALLEGHENY LAND COMPANY, LLC	101	Long-term Lease	Unknown	2017
Western New York	North Seneca Solar Project, LLC	370	Long-term Lease	Unknown	2021
Western New York	Oak Health LLC	158	Ownership	Unknown	2018
Western New York	HANSON AGGREGATES NEW YORK, INC.	16	Ownership	Unknown	2017
<i>Note:</i>					
Unit: Acres (rounded to integer)					
Data Source: Agricultural Foreign Investment Disclosure Act (AFIDA), 2021					

Appendix Table C: Top 5 Foreign Countries within Each New York State Region

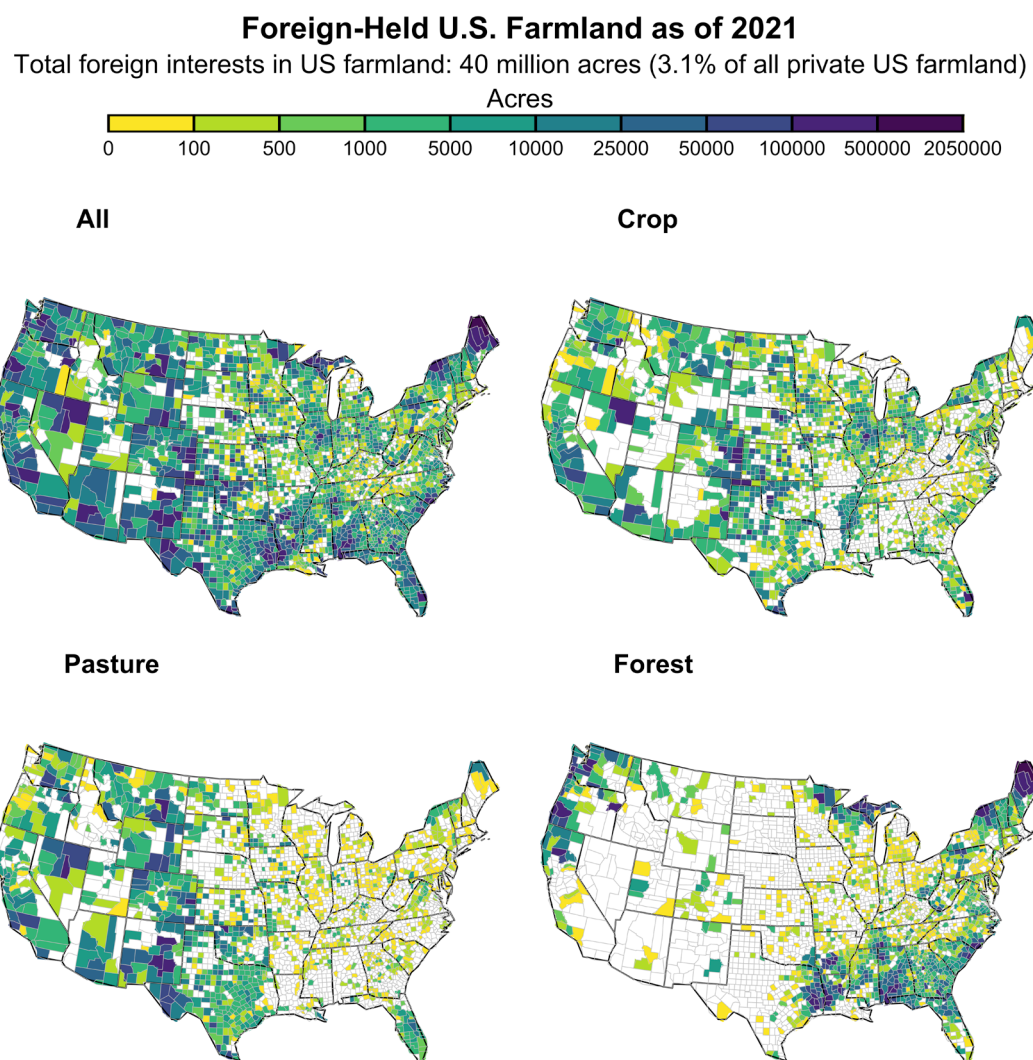
Top 5 Foreign Countries within Each New York State Region					
New York State Region	Country	All	Crop	Forest	Pasture
Adirondacks	Canada	133383	35992	87568	2178
Adirondacks	Cayman Islands	106175	0	106175	0
Adirondacks	Denmark	76135	20	76082	33
Adirondacks	United Kingdom	47958	2500	44967	234
Adirondacks	Germany	33754	511	32493	517
Capital Region	Denmark	19167	25	19132	5
Capital Region	United Kingdom	2108	175	1904	19
Capital Region	Argentina	1798	730	223	840
Capital Region	Switzerland	1480	743	199	221
Capital Region	Canada	1425	1107	207	0
Central New York	Canada	23495	22730	300	442
Central New York	United Kingdom	11987	6027	4243	1166
Central New York	Spain	11776	8097	1641	709
Central New York	Germany	9494	2566	1051	2044
Central New York	Portugal	4175	2623	578	224
Hudson Valley	Netherlands	2807	21	2426	0
Hudson Valley	Switzerland	1632	266	600	166

Hudson Valley	Saint Vincent And The Grenadines	1319	170	700	400
Hudson Valley	Germany	1045	157	73	58
Hudson Valley	Panama	681	105	426	150
NYC & Long Island	Canada	140	140	0	0
NYC & Long Island	United Kingdom	92	92	0	0
NYC & Long Island	Germany	47	0	47	0
NYC & Long Island	Australia	20	0	0	0
Southern Tier	Canada	75943	61723	11160	433
Southern Tier	Portugal	12654	10202	2091	26
Southern Tier	Austria	8958	0	8958	0
Southern Tier	Germany	6528	6504	0	0
Southern Tier	Luxembourg	5137	0	5137	0
Western New York	Canada	17148	14937	233	440
Western New York	Spain	2659	715	1944	0
Western New York	Portugal	1291	1082	197	0
Western New York	Germany	1239	886	30	70
Western New York	France	1081	760	0	0
<i>Note:</i>					
Unit: Acres (rounded to integer)					
Data Source: Agricultural Foreign Investment Disclosure Act (AFIDA), 2021					

Appendix Figure 1: Percentage Change of Foreign-Held Ag Land over All Privately Held Ag Land From 2021 to 2022

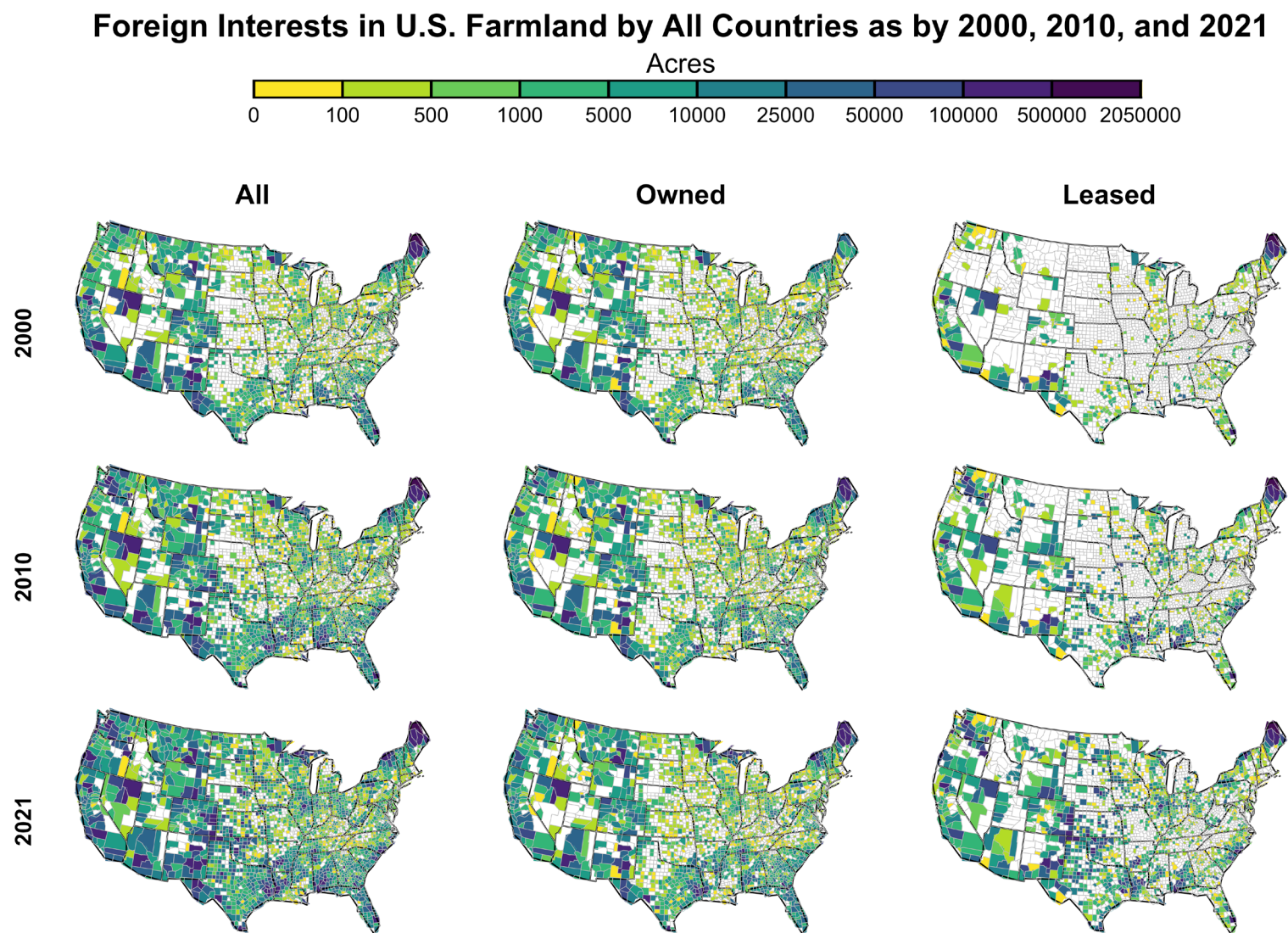


Appendix Figure 2: Foreign-Held U.S. Farmland as of 2021



Source: AFIDA Database; Created by Wendong Zhang and Fangyao Wang (Cornell)

Appendix Figure 3: Foreign Interests in U.S. Farmland by All Countries as by 2000, 2010, and 2021



Source: AFIDA Database; Created by Wendong Zhang and Fangyao Wang (Cornell)

Appendix Figure 4: Percentage of Foreign-Held Cropland over All Cropland as of 2021

Percentage of Foreign-Held Cropland over All Cropland as of 2021

Total Cropland is from US Agricultural Census as of July 2017, AFIDA Cropland acres are as of Dec 2021

