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On the Use of Whole-Farm Revenue Protection by Specialty Crop Producers in New York State[†]

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Abstract: RMA created Whole-Farm Revenue Protection (WFRP) to meet the needs of small and mid-sized diverse farms who are underserved by crop insurance. WFRP has several benefits for diversified specialty crop producers who engage in direct marketing as the insurance covers actual farm historic revenue rather than reimbursements based on wholesale prices of crops, subsidized premiums for diversified crops, and allows producers to cover most of a farm's commodities (crops and livestock) in a single policy. Despite these benefits, few fruit and vegetable farms in the Northeast have enrolled in the WFRP. We discuss the role of the program, its current use nationally and in New York State, and compare premiums and payments between WFRP and a representative farm's likely alternatives: a Federal Crop Insurance Program (FCIP) Actual Production History policy available for certain commodities in certain counties or a Noninsured Crop Disaster Assistance Program (NAP) policy available where FCIP is not. Finally, we discuss some ongoing challenges in the adoption of WFRP by specialty crop producers in New York State.

Keywords: specialty crops, risk management, crop insurance, noninsured crop disaster assistance, New York growers, Federal Crop Insurance Program, FCIP, Noninsured Crop Disaster Assistance Program, NAP, Whole-Farm Revenue Protection, WFRP.

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Dictionary

APH – Actual Production History. An insurance policy which protects farmers against yield losses due to natural causes.

– The basic coverage under NAP, akin to FCIP “CAT” coverage. It provides payments when the amount of loss exceeds 50 percent of expected production at 55 percent of the average market price for the crop.

CAT – Catastrophic level of insurance under FCIP yield policies. It provides payments when the amount of loss exceeds 50 percent of expected production at 55 percent of the expected price for the crop.

CSA – Community supported agriculture. A system which allows farmers to share risks and benefits of their farms’ production with consumers through the purchase of subscriptions.

CPA – Contract Price Addendum. An addendum to FCIP policies allowing organic or transitional producers to use contract prices to insure their crops.

FCIC – Federal Crop Insurance Corporation. The federally-owned corporation that finances the FCIP.

FCIP – Federal Crop Insurance Program. The USDA program offering insurance to farmers against a variety of perils. With the exception of WFRP, FCIP is only available for specific crops in specific counties.

FSA – Farm Service Agency. The USDA agency that administers NAP.

Micro Farm – A type of WFRP coverage tailored for farms with up to \$350,000 in approved revenue, with simplified record keeping requirements.

NAP – Noninsured Crop Disaster Assistance Program. A disaster program available to farmers for crops in counties without available permanent FCIP policies.

RMA – Risk Management Agency. The USDA agency that administers the FCIP.

USDA – The United States Department of Agriculture.

WFRP – Whole-Farm Revenue Protection. Under FCIP, WFRP provides risk management coverage for all insurable commodities on the farm under one insurance policy. WFRP is technically a pilot (which allows farmers to use it alongside NAP), but has been available every year since 2015.

On the Use of Whole-Farm Revenue Protection by Specialty Crop Producers in New York State

Producers of specialty crops, a category that includes fresh or dried fruits, tree nuts, vegetables, beans (pulses), and horticulture nursery crops, have historically had fewer tools for managing risk than producers of commodity crops. Specialty crop producers may manage the financial risk of a crop or market failure through crop and market diversification, crop protection practices like netting and high tunnels, planting disease resistant varieties, supplementing farm income with off-farm income, or other techniques. But for many specialty crop producers, especially those with high-value and high-risk crops, crop insurance and crop disaster programs can also be important tools for managing financial risk.

In a previous publication, we explored U.S. specialty crop participation in two geographically exclusive Federal risk management programs, the U.S. Department of Agriculture (USDA) Risk Management Agency (RMA) Federal Crop Insurance Program (FCIP)—permanently available for commodities in counties with sufficient data to price premiums—and the USDA Farm Service Agency’s (FSA) Noninsured Disaster Assistance Program (NAP)—available for commodities in counties where permanent FCIP is not offered (Raszap Skorbiensky, et al. 2022). In our previous study, we found that for certain crops, a relatively large portion of U.S. specialty crop acreage was covered under the combination of FCIP or NAP (e.g., plums, cherries, tomatoes, dry peas, cranberries, and oranges), while acreage of other crops had a relatively small proportion of acreage covered (e.g., lettuce, hazelnuts, kiwifruit, and strawberries). Our study also interviewed New York specialty crop producers on their crop insurance use and found that diversified specialty crop producers in the State are still underserved by these programs.

In 2015, RMA created the Whole-Farm Revenue Protection (WFRP) to meet the needs of small and mid-sized diverse farms who were underserved by crop insurance. The coverage was designed to be especially beneficial for diversified specialty crop producers who engage in direct marketing as the insurance covers historical farm revenue rather than reimbursements based on wholesale prices of crops. WFRP covers most of a farm’s commodities (crops and livestock)¹ in a single policy and provides higher premium subsidies for more diversified farms. Despite these benefits, few fruit and vegetable farms in the Northeast have enrolled in the WFRP.

During our 2019 interviews, we learned that none of the specialty crop producers in New York we interviewed used WFRP, despite being part of the core target audience. Reasons ranged from lack of information about the program, economic cost of the program compared to expected benefits and reported inability to use it to cover community supported agriculture (CSA) farm losses. RMA made significant changes to WFRP starting in 2020, including the development of a new WFRP Micro Farm coverage for small farms that reduced paperwork by eliminating the requirement to break down expected farm revenue by the historic yields and prices for the crops produced. This was intended to make it more attractive to small scale, diversified, direct market, or CSA farms.

Here we take a closer look at WFRP. We discuss the role of WFRP coverage, its current use nationally and in New York State, and compare premiums and payments between WFRP and

¹ Timber, forest, forest products, and animals for sport, show, or pets are not covered under WFRP.

a representative farm's likely alternatives: an FCIP Actual Production History policy when available for a specific commodity in a specific county and a NAP policy when FCIP is not available. In addition, we also model the choice between WFRP or a single-crop policy for a representative farm in New York State.

Introduction to the Federal Crop Insurance and Noninsured Disaster Assistance Programs in the United States

The federal government provides subsidized multiperil crop insurance coverage through the Federal Crop Insurance Program (FCIP), which is administered by the USDA Risk Management Agency (RMA) and financed by the Federal Crop Insurance Corporation (FCIC). Causes of loss covered under the FCIP include drought, excess moisture, damaging freezes, hail, wind, disease, wildfires, and – for certain policies – price fluctuations. The Federal government also offers coverage through the Noninsured Crop Disaster Assistance Program (NAP) administered by the United States Department of Agriculture Farm Service Agency (FSA) wherever FCIP is not available. NAP's eligible causes of loss are adverse natural occurrences directly affecting the crop. Because NAP is generally available where FCIP coverage is not, the two programs are not substitutes for each other.

The FCIP was created in 1938 as part of the agricultural policy response to the Great Depression. Until the 1980s, FCIP coverage was restricted to a limited set of areas and commodities (Kramer, 1983). In response to a period of high disaster support payments in the 1970s and low crop insurance participation, Congress enacted the Federal Crop Insurance Act of 1980². This law expanded the commodities covered and geographic scope of the program, introduced premium subsidies, and allowed private-sector companies to sell and service policies. FCIP participation rates remained low until Congress enacted the Federal Crop Insurance Reform Act of 1994³ (figure 1), which made participation in crop insurance, if available, mandatory for producers (USDA-RMA, 2023).

The law authorized catastrophic-level (CAT) insurance coverage to help producers comply with the new coverage mandate. At that time, FCIP CAT coverage paid an indemnity to producers for crop losses greater than 50 percent at 60 percent of the price election the crop.⁴ Producers purchasing FCIP CAT coverage paid an administrative fee of \$50 per crop per county, and the premium was fully subsidized. The mandate to purchase crop insurance was lifted in the Federal Agriculture Improvement and Reform Act of 1996⁵ (1996 Farm Bill), allowing farms the option to not purchase a policy if they waived emergency crop assistance eligibility. Starting in the 1999 crop year and continuing through 2023, FCIP CAT paid indemnities for crop losses in excess of 50 percent of expected yield at 55 percent of the expected market price of the crop (a 5 percentage-point drop in the price). The administrative fee for CAT is now \$655 per crop per county.

The Federal Crop Insurance Reform Act of 1994 also authorized the creation of a noninsured Crop Disaster Assistance Program (NAP), and the 1996 Farm Bill expanded the list of noninsured commodities covered under NAP. Currently, both FCIP and NAP have “buy-up”

² Public Law 96-365.

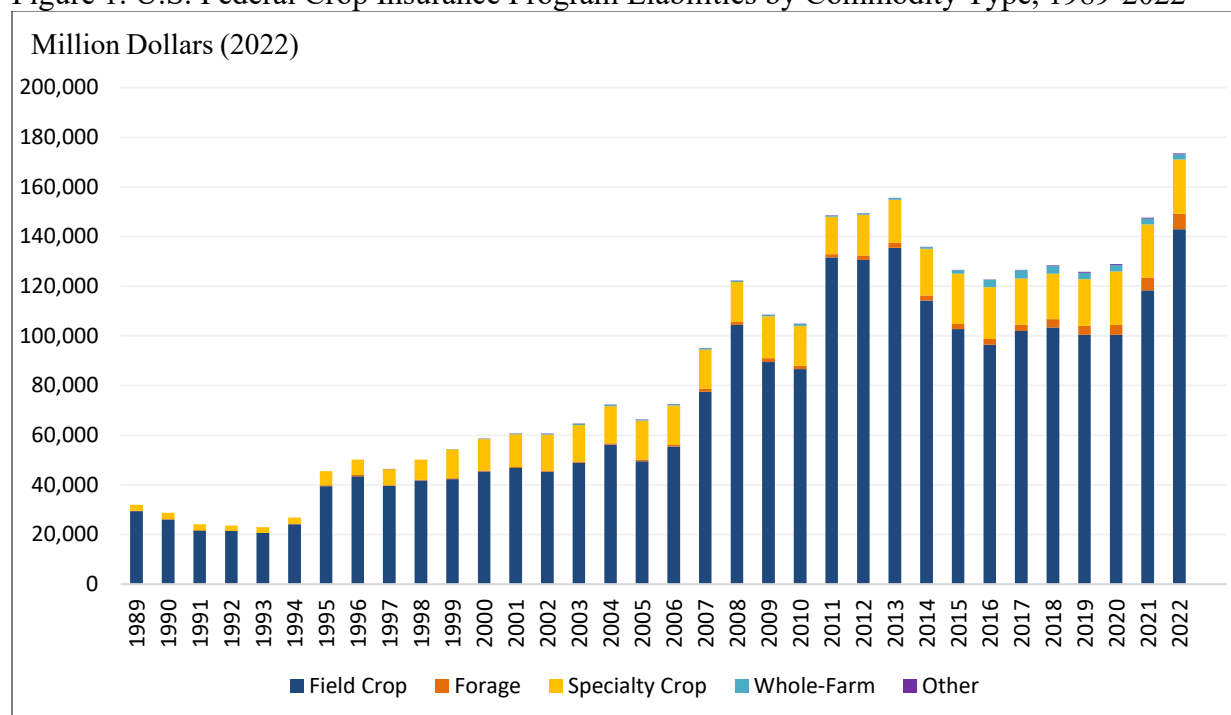
³ Public Law 103-354, §119 (7 U.S.C. 1508(b)).

⁴ Price election refers to the value per unit of the commodity for the purposes of determining the premium and indemnity under the policy.

⁵ Public Law 104-127.

levels. These buy-up levels allow producers to pay a premium to insure at a higher coverage level, receiving indemnity payments when lower levels of losses occur in their operations. NAP did not have buy-up coverage until the Agricultural Act of 2014⁶ (2014 Farm Bill) included these additional levels of coverage, which were made permanent in the Agricultural Improvement Act of 2018⁷ (2018 Farm Bill). Buy-up under FCIP programs ranges between 50 and 85 percent, while buy-up under NAP ranges between 50 and 65 percent. Therefore, producers can have significantly higher coverage from losses using FCIP products versus NAP. Additionally, unlike FCIP, NAP has payment limits: \$125,000 for catastrophic coverage, and of \$300,000 for crops with buy-up coverage.

Figure 1. U.S. Federal Crop Insurance Program Liabilities by Commodity Type, 1989-2022



Note: Other category includes apiculture, clams, grass seed, oysters, and unknown. Series adjusted to 2022 dollars using the U.S. Bureau of Labor Statistics Consumer Price Index for All Urban Consumers (CPI-U).

Source: Authors using USDA, Risk Management Agency Summary of Business data. Whole-Farm includes AGR and AGR-Lite Programs, the predecessors of Whole-Farm Revenue Protection Program. See Appendix table 4 for more information.

Since the 1996 Farm Bill, RMA has been required to report to Congress annually on the progress and expected timetable for expanding crop insurance coverage to specialty crops. Various laws and farm bills since then have included new provisions designed to increase the adoption of crop insurance for specialty crop producers. The popularity of FCIP coverage varies across crops and geographic areas. Appendix Table 1 lists the acreage reported by FSA Acreage Report and the share of this acreage covered by crop insurance for certain Northeastern States.

⁶ Public Law 113-79, §11022(a)(7).

⁷ Public Law 115-334.

Producers in several programs are required to submit an acreage report annually to FSA.⁸ The table shows that a great deal of acreage reported to FSA in Northeastern States is also covered under crop insurance.

Aside from crop insurance being a tool that producers use to manage revenue or yield variability, producers also purchase crop insurance in accordance with the requirements of their farm lenders. For example, just as banks often require homeowners' insurance for individuals with a mortgage on their property, private lenders often require agricultural producers to purchase crop insurance. For example, lenders of USDA-guaranteed loans (loans backed by USDA but funded by a private lender) may require that borrowers have crop insurance to protect the lender and Government's interests (USDA-FSA, 2023b). For FSA direct loans used to finance crop inputs (loans funded by USDA's FSA), applicants are required to obtain at least CAT-level crop insurance when available. When crop insurance is unavailable, FSA does not require the purchase of NAP, but agency officials will discuss the program with all applicants and encourage participation if they determine the borrower and USDA would benefit from its use (USDA-FSA, 2023a).

The Whole-Farm Revenue Protection Coverage

RMA developed Whole-Farm Revenue Protection (WFRP) in response to provisions in the 2014 Farm Bill with the goal of meeting the needs of diversified farms and specialty crop producers. WFRP shares characteristics with two predecessor insurance plans under the FCIP: Adjusted Gross Revenue (AGR) and AGR-Lite. These plans also insured all eligible commodities produced on the farm under a single policy and based coverage on a producer's income tax data. AGR coverage was available for purchase from 1999 to 2014, and AGR-Lite coverage was available for purchase from 2003 to 2014. Historically, use of these products was low, and AGR and AGR-Lite were not offered in all States. Based on the promise of these pilot programs, farm organizations representing organic, direct marketing, and diversified farms advocated that Congress create a whole-farm insurance product. Replacing AGR and AGR-Lite, WFRP was offered in all States and included several improvements to target diversified farms selling two or more commodities, such as higher subsidies for diversification and allowance for revenue growth over time.

WFRP is currently the only FCIP policy available to specialty crop producers in every county in the United States. Under WFRP, almost all of a farm's production can be covered under a single policy, including livestock and commodities purchased for resale. WFRP does not cover timber, forest, forest products, and animals for sport, show, or pets. WFRP provides coverage based on the individual farm's revenue history which allows for farms that sell in higher priced markets to be adequately covered for loss. To calculate premiums and indemnities

⁸ Programs with acreage reporting requirements: Marketing Assistance Loans (MAL), Loan Deficiency Payments (LDP), Conservation Reserve Program (CRP), Noninsured Crop Disaster Assistance Program (NAP), Livestock Forage Disaster Program (LFP), Tree Assistance Program (TAP), Emergency Assistance for Livestock, Honeybees, and Farm-raised Fish (ELAP); Agriculture Risk Coverage (ARC); and Price Loss Coverage (PLC).

under WFRP, producers must provide five years of financial records, yield, and revenue data for all commodities. The maximum insurable farm revenue per policy is capped at \$17 million, with no more than \$2 million for livestock, no more than \$2 million for nursery/greenhouse production and less than 50 percent of revenue for crops and livestock purchased for resale. Any post-harvest value added to the crop is not included in insured revenue.

In 2022, RMA introduced a WFRP Micro Farm option to reduce the paperwork burden for farms with revenue less than \$350,000 based on feedback from growers and small farm advocates. Unlike WFRP, it does not include restrictions on livestock or nursery production. Farms in the WFRP Micro Farm program are allowed to include some revenue from value added crops in the revenue calculation. Rather than tracking yield and revenue for each covered commodity, the WFRP Micro Farm program automatically assumes that a participating farm has three commodities, gives enrolled farms the maximum premium subsidy, an automatic diversification discount based on three commodities, and an opportunity to insure up to 85 percent of its revenue regardless of the number of commodities covered. The WFRP Micro Farm option also allows some value-added revenue to be included in the insured revenue. Participating producers are required to provide three years of financial records (IRS Schedule F or equivalent) and be able to prove that they grow the crops that are being covered, but they are not required to have price and yield data for each crop. Appendix Table 4 offers a side-by-side comparison of AGR-Lite, AGR, WFRP and WFRP Micro Farm with selected policy changes.

WFRP is intended to be a less expensive coverage for a diversified farm because of the risk reduction benefits of diversification and because of higher premium subsidies for insurance premiums compared to single crop insurance products. WFRP does not offer any catastrophic (CAT) level of insurance and cannot be combined with an insurance policy at a CAT level. WFRP coverage ranges from 50 to 85 percent, increasing in 5 percent increments. The coverage level determines how much loss a farmer will incur before receiving an indemnity payment (i.e., the deductible). For example, a farmer purchasing a 65 percent coverage level would receive an indemnity payment if the farmer's actual revenue was at least 35 percent less than the revenue guarantee. The premium subsidy provided depends on the coverage level select and the number of commodities and increases to 80 percent if the farm covers 2 commodities up to a 75 percent coverage level (table 1).

Table 1: Federal premium subsidy for Whole-Farm Revenue Protection and Micro Farm

	CAT	Buy-up							
Coverage level selected		50%	55%	60%	65%	70%	75%	80%	85%
WFRP – 1 commodity	NA	67%	64%		59%	55%	none	none	
WFRP – 2 commodities	NA			80%			none	none	
WFRP – 3+ commodities & WFRP Micro Farm	NA			80%			71%	56%	

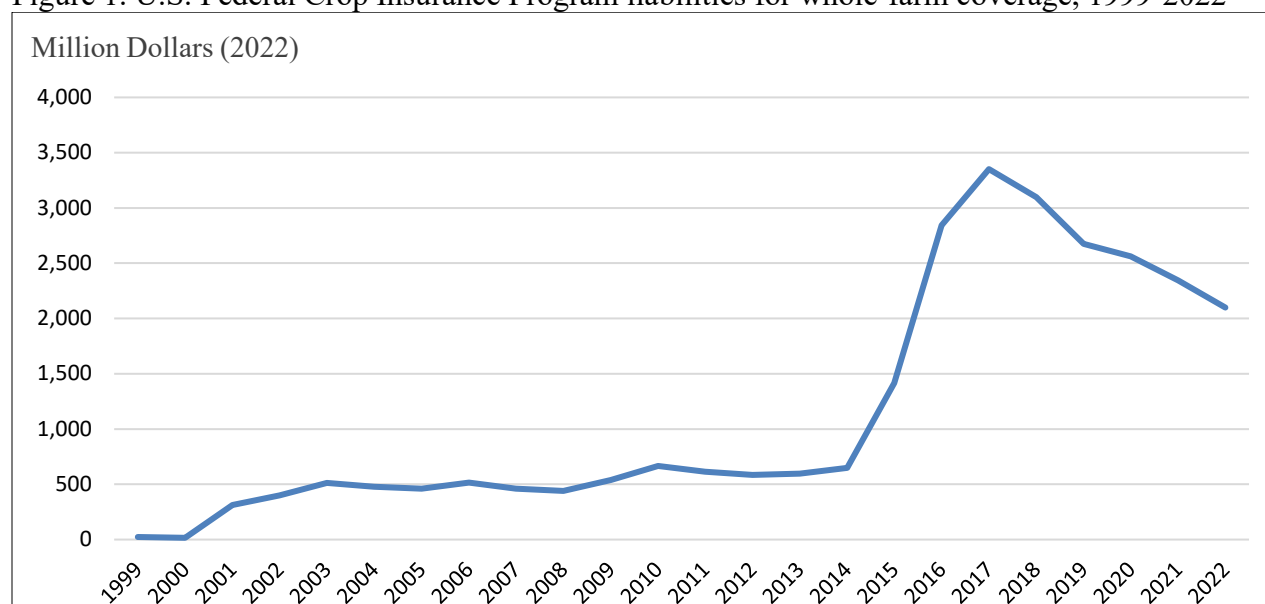
Another complicating aspect of the WFRP is the calculation of the “commodity count” used to determine eligibility for certain coverage and subsidy levels. The commodity count is not

a simple count of the number of commodities covered. For a commodity to “count,” the commodity must make up at least a third of the average total expected revenue for a farm with three commodities, with lower thresholds to count for farms with more than three commodities. For example, if a farm has 4 commodities and a total expected revenue of \$100,000, a commodity’s expected revenue must be at least one third of \$25,000 (equal to \$8,325) for eligibility. Commodities that do not have a sufficiently high expected revenue to qualify individually can be combined into a single commodity which may also qualify as a commodity to “count.” The Appendix section “Calculating WFRP Commodity Counts and Diversity Factors” includes additional information and examples.

Whole-Farm Revenue Protection in the United States and New York State

Since its inception, farmers’ use of WFRP has been significantly higher than their use of AGR and AGR-Lite (figure 2). For example, in 2013, there were \$525 million in liabilities under AGR and AGR-Lite. In 2022, there were \$2 billion in liabilities insured through WFRP and WFRP Micro Farm. Still, the number of policies only totaled 1,724 for the 2022 reinsurance year (July through June).⁹

Figure 1. U.S. Federal Crop Insurance Program liabilities for whole-farm coverage, 1999-2022



Note: Series adjusted to 2022 dollars using the U.S. Bureau of Labor Statistics Consumer Price Index for All Urban Consumers (CPI-U).

Source: Authors using USDA, Risk Management Agency Summary of Business data. Whole-Farm includes AGR and AGR-Lite Programs, the predecessors of Whole-Farm Revenue Protection Program. See Appendix table 4 for more information.

In New York State in 2022, there were eleven farms that purchased WFRP policies, which represented less than one percent of total nationwide WFRP liabilities (table 2). In New

⁹ Given the nascency of WFRP Micro Farm, we do not separate descriptive statistics from general WFRP.

York and across the nation, farms that purchase WFRP insure 3.6 crops on average. In other words, farms purchasing this coverage are diversified, and would qualify for the 80 percent subsidy rate if electing a coverage level up to 75 percent. Additionally, for both New York and the United States, the median number of crops per policy is close to the mean, meaning that the data are fairly symmetrical.

Table 2: Descriptive statistics for reinsurance year 2022

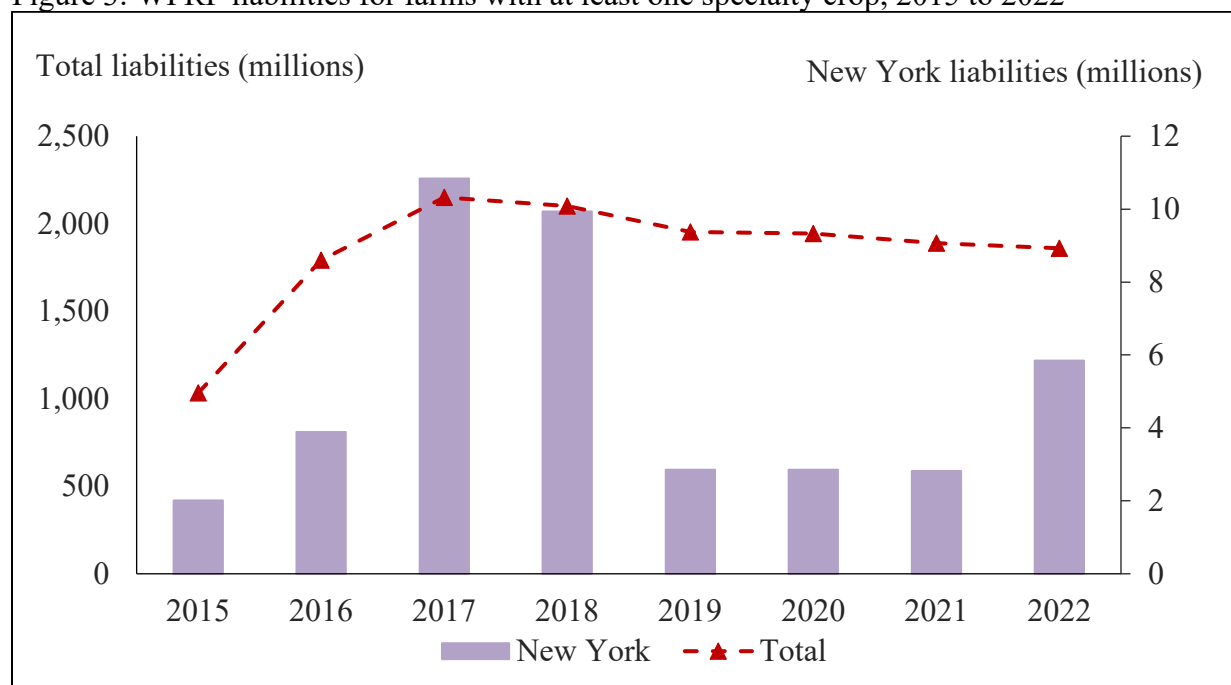
	New York	United States
All policies		
Number of policies	11	1,724
Average number of crops per policy	3.6	3.6
Median number of crops per policy	4	3
Total liabilities (millions)	\$5.8	\$2,046.2
Policies with specialty crops		
Number of policies covering specialty crops	11	1,428
Average number of specialty crops per policy	3.2	2.5
Median number of specialty crops per policy	3	2
Total liabilities for farms with specialty crops (millions)	\$5.8	\$1,859.6
Most common specialty crop type	Apples (fresh market) and apples (processing)	Apples (fresh market)

Source: Author using data from USDA, Risk Management Agency 2022.

Notes: Reinsurance year is the period starting on July 1 and ending on June 30 of the following year. Data as of August 2022.

All farming operations in New York State with a WFRP policy had at least one specialty crop in their insurance plan, compared to about 83 percent in other states (Table 2), demonstrating that WFRP is popular amongst specialty crop producers. Total liabilities for farms that cover at least one specialty crop (liabilities are not reported on a crop-specific basis) doubled from about one billion dollars in 2015 to about two billion dollars in 2017 and have since remained mostly stable with a slight downward trend (figure 3). In contrast, liabilities for farms with specialty crops have been more variable in New York State.

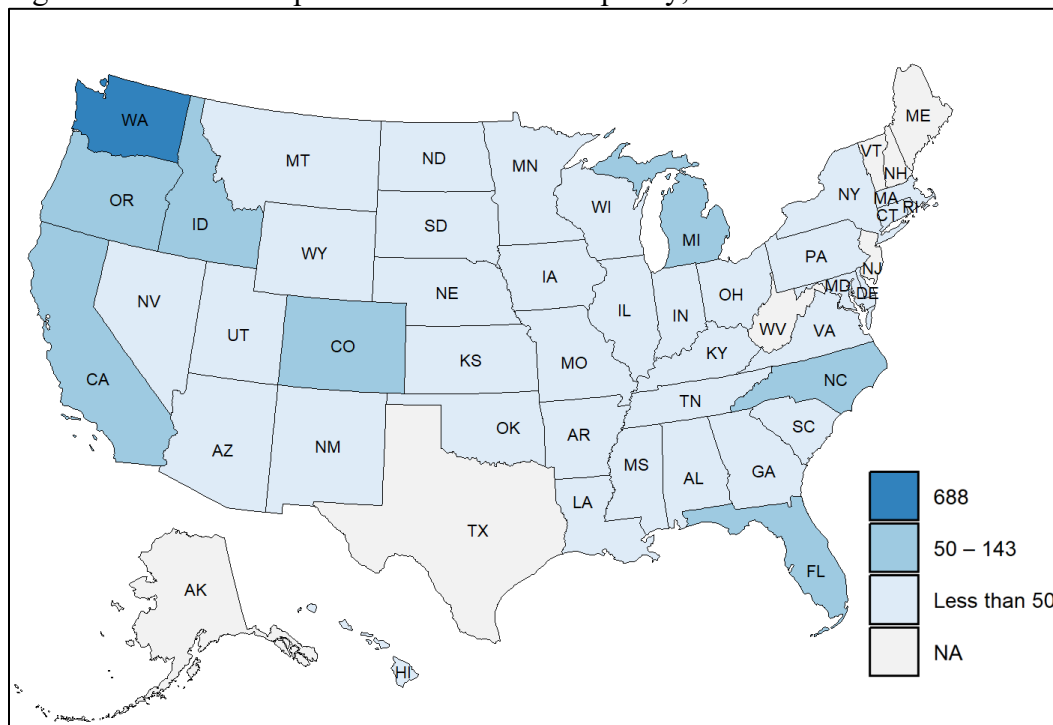
Figure 3: WFRP liabilities for farms with at least one specialty crop, 2015 to 2022



Source: Authors using data from USDA, Risk Management Agency.

While WFRP is available for purchase in all counties in all States, use of WFRP has not been even across all states and producers. The state with the highest number of farms enrolled in the program is Washington, followed by California (figure 4). The states with the highest number of WFRP policies are generally those with a large portion of U.S. specialty crop production, i.e., Washington, California, Colorado, Florida, Idaho, Michigan, North Carolina, and Oregon (figure 5). Much of the specialty crop production in those states is covered by other FCIC insurance products. Idaho and Colorado both have large numbers of WFRP farms without any specialty crops, while several states, like Texas, New Jersey, and Maine, have no farms purchasing WFRP despite growing specialty crops. The most common commodities insured with WFRP in 2022 were all specialty crops—fresh market apples, sweet cherries, and pears (figure 6).

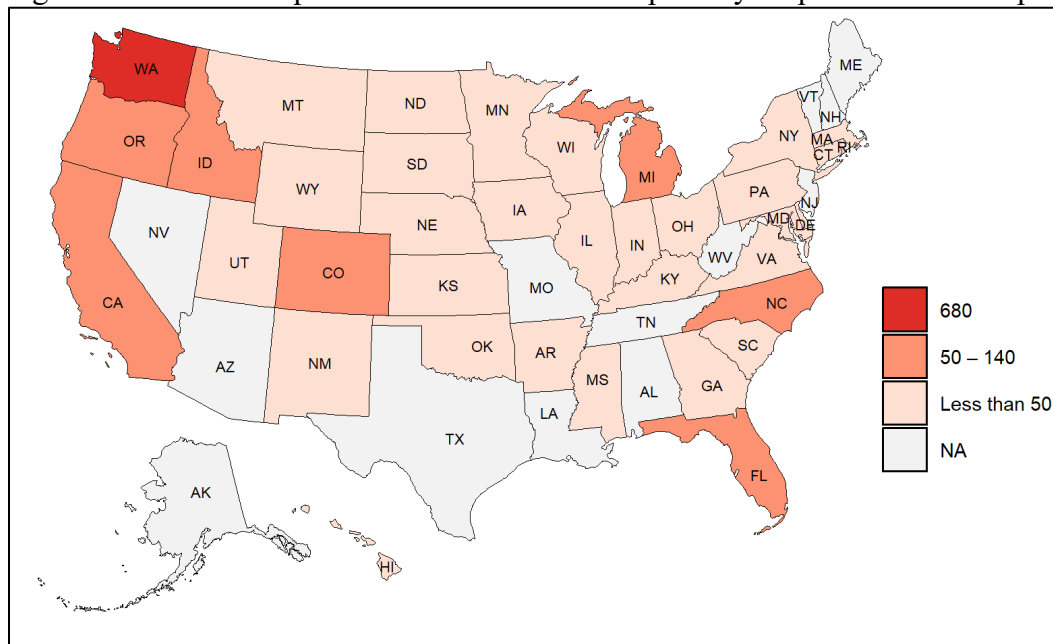
Figure 4: Number of operations with a WFRP policy, 2022



Note: Washington State is the only state with over 140 operations with WFRP policies, with 688 policies in 2022.

Source: Authors using data from USDA, Risk Management Agency.

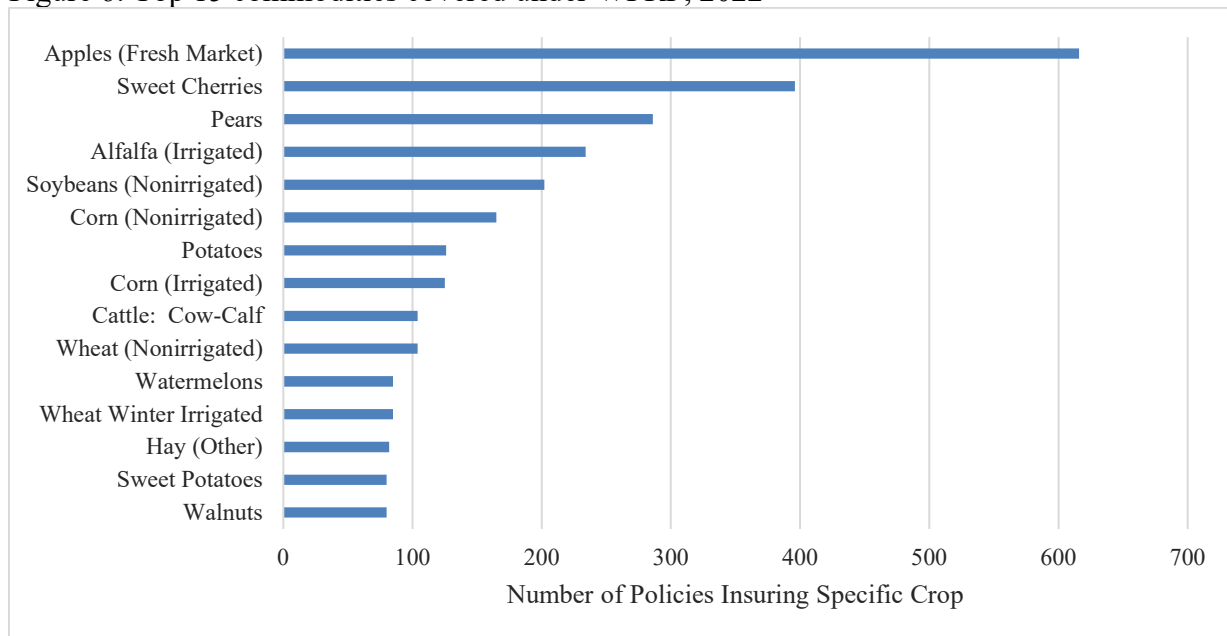
Figure 5: Number of operations with at least one specialty crop in their WFRP policy, 2022



Note: Washington State is the only state with over 140 operations with WFRP policies, with 680 policies with at least one specialty crop in 2022.

Source: Authors using data from USDA, Risk Management Agency.

Figure 6: Top 15 commodities covered under WFRP, 2022



Source: Authors using data from USDA, Risk Management Agency.

FCIP Actual Production History (APH) Policies and Noninsured Crop Disaster Assistance Program (NAP)

To better understand the need for a well-functioning whole-farm insurance policy, and the choices that producers must make when deciding whether to purchase a crop insurance or NAP coverage, we provide more detailed descriptions of two options: the Actual Production History (APH) product from the FCIP and coverage from the Noninsured Crop Disaster Assistance Program (NAP). Below, we describe how these coverages came about and how they are used. Finally, we discuss some of the shortcomings of these options from the perspective of diversified specialty crop producers, some of which can be addressed through a whole-farm policy.

FCIP Actual Production History (APH) Insurance

Most of the fruit and vegetable crops in the Northeast with FCIP coverage are insured under a single crop APH policy, which provides protection against yield losses due to covered causes. In 2021, eighteen fruit and vegetable crops were covered by APH in one or more counties in the Northeast. APH policies for fruit and vegetable crops are only available in counties where there is enough historic yield data and production volume for RMA to be able to develop an actuarially-sound insurance product. In general, RMA expands policies (including APH policies) to new counties or for new crops when (1) RMA is aware of crop production in that area, (2) there is some history or experience of the crops' performance, and (3) there is significant grower interest in the product. Program expansion requests are often initiated by producers at the local level and channeled through RMA's Regional Offices for approval. For example, in the

Northeast, in 2021, Fresh Market Tomato coverage was added in Connecticut in Hartford and New Haven Counties; Green Peas in Wicomico County, Maryland, Salem County, New Jersey and Cattaraugus County, New York; and Processing Beans in Chautauqua County, NY and Tioga County, PA (USDA-FCIC, 2021).

Producers purchasing APH can select CAT coverage that covers losses of over 50 percent of average yield at 55 percent of the price election (table 3) or buy-up coverage. The premium for CAT-level insurance for a crop is 100 percent subsidized by the federal government, and producers pay an administrative fee of \$655 per crop to participate. Producers can purchase buy-up coverage from 50 percent to 85 percent of average yield in 5 percent increments and can select a percentage of the elected price (the crop price used to pay indemnities) to insure from a range that varies based on the yield coverage level (table 3). Depending on the commodity, the price election may be based on a futures price, a contract price, or an FCIC-determined price based on historical data. Premiums for buy-up coverage are subsidized by USDA at varying rates depending on the level of yield coverage. The Federal premium subsidy for a farm using WFRP (table 1) who only covers one commodity, has the same federal subsidy schedule as a farm using APH (table 3). Unlike WFRP, there is no limit on liability or income for producers utilizing APH.

Table 3: APH yield coverage level, price coverage level, and associated premium subsidy

	CAT				Buy-up				
Coverage level (%)	50	50	55	60	65	70	75	80	85
Price level (%)	55	100	91-100	84-100	77-100	72-100	67-100	63-100	59-100
Federal premium subsidy	100	67	64	64	59	59	55	48	38

Source: Authors using 7 U.S.C. 1508(e) and USDA-FCIC (2022).

Average yield for an APH policy is based on a producer's "approved yield" (the yield used to determine the production guaranteed by the insurance product) and is calculated based on the producer's historical yields (or approved substitute yields). The calculation requires at least four years of crop yields, and up to 10 consecutive crop years. Producers with no previous records are assigned transitional yields (T-Yields) based on county average yields to calculate their production guarantee and premium. APH indemnities are triggered when actual yields drop below the approved yield multiplied by the yield coverage level. Unlike WFRP, revenue losses driven by price changes cannot trigger indemnities for APH policies.

Noninsured Crop Disaster Assistance Program (NAP)

Congress established NAP in the 1996 Farm Bill with the purpose to serve as a safety net for crops that are not covered by a federal crop insurance program¹⁰. It offers similar coverage to FCIP APH. NAP is technically a disaster assistance program, not insurance, which means that it covers losses, triggers payments, and prices coverage differently than FCIP APH policies. Initially NAP coverage was limited to “Basic” or catastrophic protection analogous to FCIP CAT coverage. Producers that enroll in NAP Basic can receive a payment of 55 percent of the elected market or projected price of the covered crop for crops with losses over 50 percent of their expected yield, at 55 percent of the average market price. NAP Basic costs \$325 per crop or \$825 per county to cover multiple crops (not to exceed \$1,950). Catastrophic coverage – under NAP or FCIP CAT policies – will rarely pay an indemnity for a loss because farms rarely incur losses that drastic. As a result, NAP Basic is affordable but only provides income-loss risk protection for producers in the case of a major crop failure. The Agricultural Act of 2014¹¹ authorized for 2015 through 2018 additional levels of coverage (also called buy-up in NAP) ranging from 50 to 65 percent, in 5 percent increments, at 100 percent of the average market price. The addition of buy-up made NAP function more like the RMA crop insurance product. The premium for buy-up coverage was set at 5.25 percent times the level of coverage. The 2018 Farm Bill authorized NAP buy-up coverage in perpetuity.

Fruit and vegetable farms in the Northeast rely heavily on NAP (Raszap Skorbiensky et al, 2022). NAP is most commonly used in States and U.S. territories with fewer FCIP policies, such as North Carolina and New York (figure 7). FSA approved almost 5,000 New York applications for NAP, with over 9 percent of those specialty crop applications being for organic certified crops. While the number of NAP applications in New York fluctuates from year to year, specialty crop producers in New York are consistently among the largest specialty crop users of the program, ranking second in 2022. Even in states where the absolute number of applications is lower, the program is still widely used. For example, specialty crop producers from every county in New Hampshire and producers in more than 90 percent of counties in New Jersey, and Vermont submitted NAP applications in 2020 (Raszap Skorbiensky et al., 2022).

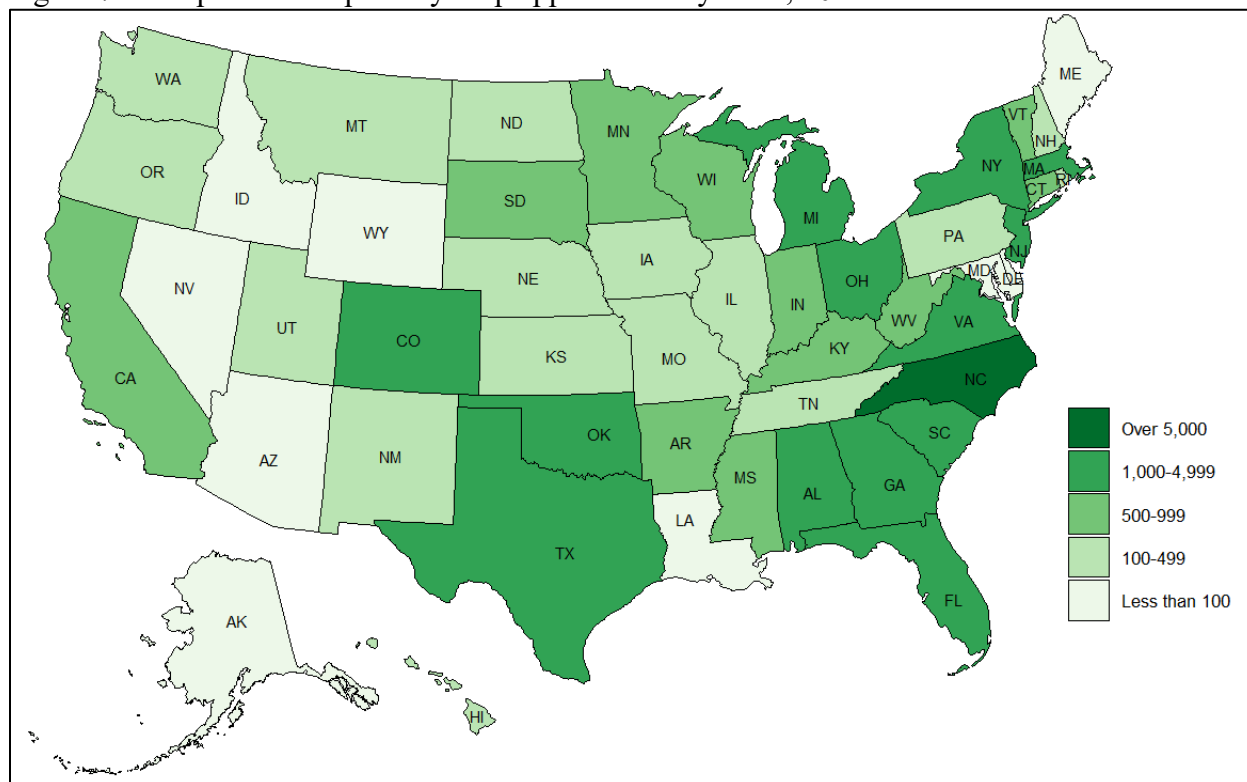
Not all fruit and vegetable farms in New York are eligible for NAP, as the product is only available where a permanent FCIP insurance product is not available. NAP is also limited to producers with a federal adjusted gross income under \$900,000, and payments per crop/year cannot exceed \$125,000 for Basic or \$300,000 for buy-up. As of 2020, producers may sign up for buy-up coverage after growing a crop successfully for a year. An advantage to NAP is that it is provided by USDA Farm Service Agency (FSA), which also administers the USDA farm loan program. For farms that would like a risk management tool along with a USDA loan, getting NAP coverage may be easier than purchasing FCIP coverage since a producer can apply for a

¹⁰ Public Law 104-127, §196 (a)(1)(A)(i) (7 U.S.C 7333)

¹¹ Public Law 113-79, §12305 (a)(4)

USDA loan and NAP coverage in the same location. FCIP policies are not sold by FSA and can only be purchased through crop insurance agents (or in limited cases, directly from USDA RMA).

Figure 7: Accepted NAP specialty crop applications by State, 2022¹²



Source: Authors using Farm Service Agency Data.

Challenges of FCIP APH and NAP coverage for specialty crop growers

Both FCIP APH and NAP pose some challenges for diversified specialty crop producers, particularly for those using direct marketing. Direct marketing involves selling to consumers

¹² Specialty crops in this map are apples, apricots, aronia, artichokes, asparagus, atemoya, avocados, bananas, beans, beets, blueberries, breadfruit, broccoflower, broccoli, brussels sprouts, cabbage, caimito, callaloo, canary melon, caneberries, cantaloupes, carambola, carrots, cashew, casava, cauliflower, celeriac, celery, cherimoya, cherries, chestnuts, chia, chicory/radicchio, Chinese bitter melon, Christmas trees, coconuts, coffee, cranberries, crenshaw melon, cucumbers, currants, dasheen, dates, eggplant, elderberries, figs, flowers, gailon, garlic, giner, ginseng, gooseberries, gourds, grapefruit, grapes, greens, guambana, guar, guava, guavaberry, hazelnuts, herbs, honey, honeyberries, honeydew, hops,, horseradish, industrial hemp, Israel melons, jack fruit, Jerusalem artichokes, jujube, juneberries, kiwifruit, kochia, kohlrabi, Korean golden melon, kumquats, leeks, lemons, lentils, lettuce4, limes, longan, lychee, mangos mangosteen, maple sap, mushrooms, mustard, nectarines, noni, nursery, okra, olives, onions, oranges, papaya, parsnip, passion fruits, pawpaw, peaches, pears, peas, pecans, pejabaye, peppers, persimmons, pineapple, pistachios, pitaya, plantain, plumcots, plums, pomegranates, potatoes, sweet potatoes, prunes, pummelo, pumpkins, quinces, radishes, rambutan, rhubarb, rutabaga, sapodilla, sapote, scallions, shallots, shrubs, sprite melon, squash, strawberries, sweet corn, tangelos, tangerines, tannier, taro, tomatillos, tomatoes, turnips, walnuts, watermelon, and yam.

without the use of an intermediary or wholesaler, such as selling through farm stands or farmers markets. With respect to pricing, generally, RMA and FSA establish prices based on aggregated futures pricing or wholesale market information; these prices may be much lower than those received by individual farms, especially when farms market directly to consumers.¹³ Many Northeastern farms are in this situation, selling small volumes of high-value, specialized crops at direct market and niche market prices. For example, smaller direct-to-consumer sweet corn producers in Eastern New York have reported sweet corn marketable yields around 4.2 tons per acre, which is lower than average, but a higher marketed price per ton of about \$800 per ton. The price set by RMA for non-irrigated sweet corn in 2023 is \$168 per ton. The potential difference between the actual price and the RMA price leaves the producer with a significant amount of uninsured revenue. Additionally, NAP and FCIP APH coverage require yield data from a farm for each insured crop. Many smaller producers with large numbers of crops on small acres may not keep adequate production records to accurately document yields over time. Using average county yields may not accurately reflect the farm's historical yields. Therefore, the indemnities paid on a crop under NAP or APH may not trigger when there is a yield loss, and when triggered, may not adequately compensate direct market and high-value market growers for their actual financial loss.

Finally, the complexity of acquiring multiple individual crop insurance policies for diverse farms that grow many specialty crops on a small number of acres is also often an impediment to producers seeking risk management tools. Because FCIP policies are not available for all crops in all counties, and NAP is not available for crops that have an FCIP product available, producers of many specialty crops may not have the option to simply have APH or NAP if they would like to insure their entire farm. A diversified farm in the Northeast may need to purchase NAP coverage and multiple FCIP APH policies to cover all crops produced on the farm under individual policies. The farm's policies would then be administered by two different agencies with different rules, policies, and levels of capacity. If a producer experienced a drought that affected both their APH-insured sweet corn and NAP-covered winter squash, they would be dealing with two different sets of adjusters with different rules and procedures. In such cases, WFRP may be a better tool for producers to ensure all crops under one policy with one set of rules and procedures.

¹³ There are some caveats to this pricing issue. (1) In some cases, FSA may establish separate direct market prices to reflect differences between wholesale and direct sales to consumers at farm stands or farmer's markets. This process requires FSA State Offices to submit a request to recognize direct market pricing, which must go through an approval process and must have sufficient information for establishment. If approved, the producer would receive an average direct market price instead of the average market price. However, this price may still differ from the actual price received. (2) RMA's contract price addendum (CPA) allows certified organic and transitional producers with a written contract from a buyer to insure the crop at the contract price. This only applies to producers that are growing under contract.

Comparing FCIP WFRP, FCIP APH, and NAP Coverage

FCIP WFRP, FCIP APH, and NAP coverage have similar calculations for the amount that producers pay for risk management tools (i.e., the premium) and for how agencies calculate payments to producers in the case of a sufficiently large eligible loss (i.e., indemnities).

Note that all descriptions below are illustrative, and this is a simplified example. There are several options which we do not include in our formulas and examples, such as the possibility of expanding historical revenue for WFRP, changes to the yield (e.g., yield exclusion adjustments that allow producers to exclude low yield years, etc.), additional subsidies (e.g., for beginning or veteran farmers and ranchers), and adjustments based on experience. The RMA Actuarial Information Browser (AIB) contains information by commodity, year, plan, state, and county on prices, yields, rates, and subsidy factors.¹⁴ The RMA Cost Estimator can be used to estimate Federal crop insurance premium costs.¹⁵

For WFRP and APH, producer paid premium calculation (for buy-up) is as follows:

$$\text{liability} \times \text{premium rate} - \text{subsidy} \quad (1)$$

where the liability is the dollar amount that is insured under the policy. For APH, the liability is calculated by multiplying the production guarantee (yield coverage level percent x approved yield x acres) by the covered price (price coverage level percent x FCIP price) by the producer's share ownership of the crop. Recall that APH coverage levels for buy-up range from 50 to 85 percent, as listed in table 3. For the purpose of this paper, we assume the producer holds 100 percent of the insurable interest in the crop. For WFRP, liability is the dollar amount that is insured under the policy, which is the farm's approved revenue times the coverage level percent, which range from 50 percent to 85 percent (table 1). The premium rate is the actuarially-fair rate set by RMA. For APH, the premium rate varies by commodity and the unit type (e.g., basic, enterprise, etc.). For WFRP, the approved revenue varies based on the number of commodities grown on the farm and the diversity factor (i.e., how much each commodity contributes to the farm's approved revenue). The total weighted revenue to count is the sum of the revenue from each eligible commodity (i.e., commodity to "count") times the percent of revenue for that commodity, rounded to 3 decimal points. We explain this calculation in more detail in the Appendix section "Calculating WFRP Commodity Counts and Diversity Factors". For WFRP Micro, all commodities count automatically. The WFRP and WFRP Micro premium rates are calculated as a weighted average of actuarially-fair crop-specific rates set by RMA, and applied to the entire farm instead of on a crop-specific basis.

The final producer paid premium is equal to the premium minus the subsidy amount (the total premium amount times the subsidy rate). The subsidy is the amount of the insurance premium paid by the federal government. The subsidy for APH, WFRP, and WFRP Micro varies by the level of coverage requested and by the number of counted commodities for WFRP and WFRP Micro. Three counted commodities are needed to receive the maximum WFRP subsidy.

¹⁴ <https://webapp.rma.usda.gov/apps/ActuarialInformationBrowser2022/DisplayCrop.aspx>

¹⁵ <https://ewebapp.rma.usda.gov/apps/costestimator/>

For WFRP Micro, the premium always assumes three counted commodities regardless of the number of commodities covered.

When production falls below the guaranteed amount, RMA calculates indemnities as follows:

$$\begin{aligned} \text{APH: liability} &= (\text{actual production} \times \text{price coverage level} \times \text{FCIC price} \times \text{share}) \\ \text{WFRP: liability} &= \text{actual revenue} \end{aligned} \quad (2)$$

For APH, the price will be the FCIP price, while for WFRP, indemnities are based on total revenue.

The premium calculation for NAP buy-up premium is below. The premium is the lesser of the statutory 5.25% premium fee multiplied by either: the appropriate payment limit, or, the sum of the premium calculation for all crops the producer has under NAP. Note that 5.25% of the NAP liability is not equivalent to an actuarially fair premium.¹⁶

$$\begin{aligned} \sum_{\text{eligible crops}} 5.25\% \times \text{share} \times \text{acres} \times \text{approved yield} \times \% \text{ coverage} \times \\ \text{average market price} \\ \text{or} \\ 5.25\% \times \text{payment limit} \end{aligned} \quad (3)$$

where the share is the producer's share of the eligible crop. The approved yield is based on expected production per acre and approved by CCC. The average market price is a price comparable with established FCIC prices and determined by FSA. The payment limit is \$300,000 per crop year, per individual or entity.

When production falls below the guaranteed amount, FSA calculates indemnities as follows:

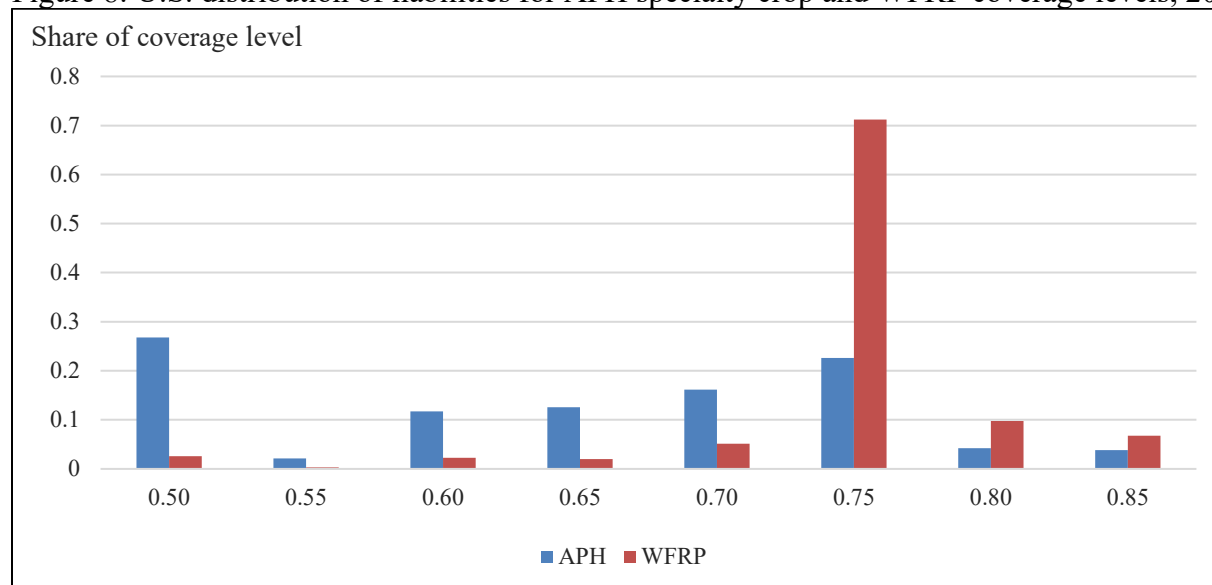
$$\begin{aligned} (\text{acres} \times \text{share} \times \text{yield} \times \text{coverage} - \text{acres} \times \text{actual yield}) \\ \times \text{average market price} \times \% \text{ price guarantee} \end{aligned} \quad (4)$$

We chose to use coverage level of 65 percent for all our examples. First, growers of high-value crops tend to insure their crops with high buy-up coverage, which guarantees coverage of a larger portion of their revenue in the event of losses from natural weather causes (Raszap Skorbiansky, et al., 2022). Applying 65 percent coverage buy-up for our examples is appropriate because it is the highest level of buy-up coverage that is available for the NAP program, and we wanted to be able to compare FCIC insurance products directly with NAP. Figure 8 compares APH coverage levels for specialty crop liabilities and WFRP liabilities for the year 2022. Producers purchasing APH most frequently select 50 percent, which has the highest federal subsidy rate (100 percent for CAT or 67 percent for buy-up). For buy-up, the largest amount of liability is covered under 75 percent which is the highest level of subsidized buy-up insurance

¹⁶ Some NAP eligible crops are identified as “value loss crops,” as yield and acreage are not relevant figures. This includes aquaculture, Christmas trees, ginseng, ornamental nursery, and turf-grass sod. The premium for value loss crops is calculated using the maximum dollar value selected by the producer multiplied by the producer's share and the 5.25% premium fee, subject to the payment limitation.

available. As an example of high coverage in specialty crops, grapes in New York had the largest number of policies under 75 percent coverage, though the highest share of liabilities were covered under 70 percent coverage.

Figure 8: U.S. distribution of liabilities for APH specialty crop and WFRP coverage levels, 2022



Source: Authors using data from USDA, Risk Management Agency.

The WFRP and the WFRP Micro Farm insurance programs provide federal subsidies for the cost of the premium up to 85 percent coverage. There is no CAT option with 100 percent subsidy, so the rate of uptake for WFRP at the 50 percent level is lower than for APH. From 50-75 percent buy-up the federal subsidy is 80 percent of the premium; most farms choose 75 percent buy-up coverage. Farms with WFRP with one or two commodities can get coverage up to 85 percent, but like APH, it is subsidized at lower rates. WFRP coverage above 75 percent is limited to farms with 3 or more commodities or farms purchasing WFRP Micro Farm policies. The subsidy rates are lower for higher coverage levels (71 percent for 80 percent coverage and 56 percent subsidized for 85 percent coverage). In the case of New York state farms with WFRP policies, 7 out of the 11 growers purchased a WFRP policy with at least 75 percent coverage.

One Crop Example

First, we will look at a farm that is insuring a single crop, sweet corn. With a few exceptions, farms can use WFRP and WFRP Micro Farm to insure one crop (see Appendix table 2). For farms that find that the prices used to calculate NAP and APH result in liabilities that are too low to provide adequate risk protection, the ability to insure actual historic revenue rather than yield at wholesale prices may be attractive. However, while it is true that operations can insure a single crop, such as sweet corn, it is not the program's intended use. WFRP is meant for use by diversified operations.

A 100-acre farm sweet corn farm in Monroe County, NY (for FCIP purposes) or Ulster County, NY (for NAP purposes) has an expected yield of 4.2 tons per acre. The farm can receive a direct market price of \$800 per ton, and they have an expected revenue of \$336,000. The FCIC (or

FSA) approved price is \$168 per ton. The farm elects either CAT/Basic or a 65 percent coverage level. The farm's actual yield falls to 2.0 tons per acre.

The substantial difference between the direct market price and the FCIC/FSA price leads to a significant difference between the expected revenue using market price in the event of no losses (\$336,000) and the insurable revenue using approved price (\$70,560). If the producer experiences this loss, and has not purchased a Federal risk management policy, they would receive \$160,000 for the 2 tons of actual yield at the market price (table 4). In this case, after taking into considering service fees and premiums, the producer receives a higher revenue than had they foregone APH or NAP. However, because the approved price is much lower than the market price (by 79%), the payment from APH or NAP recoups only 0.5% of the loss in the case of CAT or Basic and only 7% of the loss in the case of a 65% coverage level. If no loss was incurred, or the loss was not sufficiently high to trigger payments, the producer would pay the service fee (plus premium, if buy-up was purchased), but would not receive a payment.

Table 4. Sweet corn example for APH and NAP, 2023

	APH CAT Monroe, NY	APH buy-up 65% Monroe, NY	NAP Basic Ulster, NY	NAP buy-up 65% Ulster, NY
FCIC/FSA price per ton	168	168	168	168
Direct market price	800	800	800	800
Price difference	0.79	0.79	0.79	0.79
Yield per ton	4.2	4.2	4.2	4.2
Acres	100	100	100	100
Expected Revenue	336,000	336,000	336,000	336,000
Liability	19,404	45,864	19,404	45,864
Trigger yield	2.10	2.73	2.10	2.73
Service fee	655	655	360	360
Producer paid Premium	0	2,739	0	2,408
Actual yield	2	2	2	2
Yield coverage	0.50	0.65	0.50	0.65
Price coverage	0.55	1.00	0.55	1.00
Payment for actual yield	924	12,264	924	12,264
Loss recouped	0.005	0.070	0.005	0.070
Payment for total crop failure	19,404	45,864	19,404	45,864
Revenue without APH/NAP	160,000	160,000	160,000	160,000
Revenue with APH/NAP	160,269	168,870	160,564	169,496
Net Payment	269	8,870	564	9,496

Note: APH buy-up producer paid premium can be calculated via the RMA Cost Calculator.

If the same producer (either in Monroe or Ulster, NY) purchased WFRP or WFRP instead, they would receive a significantly higher payment for the same loss (table 5). The final revenue differs slightly for the same farm in Monroe and Ulster counties on account of premium calculations that take into account the county-specific risk. The WFRP policy allows producers

to use the direct market price in their policy, insuring a closer representation of their true actual revenue, and with a significantly higher approved price comes a much larger payment for the drop in yield. In contrast to recouping only 0.5% or 7% of revenue losses under APH or NAP in this scenario, WFRP and WFRP Micro recoup 33% of losses. In the case of total crop failure, the largest amount of revenue to be recouped with a 65% coverage level under APH or NAP is less than \$50,000 while WFRP producers would be able to recoup upwards of \$200,000.

Table 5. Sweet corn example for WFRP and WFRP Micro Farm, 65% coverage, 2023

	WFRP Monroe, NY (FCIC Price)	WFRP Monroe, NY	WFRP Micro Farm Monroe, NY	WFRP Ulster, NY	WFRP Micro Farm Ulster, NY
FCIC price per ton	168	800	800	800	800
Direct market price	800	800	800	800	800
Price difference	0.79	0.00	0.00	0.00	0.00
Yield per ton	4.20	4.20	4.20	4.20	4.20
Acres	100	100	100	100	100
Revenue	336,000	336,000	336,000	336,000	336,000
Liability	45,864	218,400	218,400	218,400	218,400
Service fee	655	655	655	655	655
Producer paid premium	2,651	12,626	5,023	12,088	5,635
Actual yield	2	2	2	2	2
Revenue coverage (%)	65	65	65	65	65
Payment for actual yield	0	58,400	58,400	58,400	58,400
Loss recouped (%)	0	33	33	33	33
Payment if total crop failure	45,864	218,400	218,400	218,400	218,400
Revenue without WFRP	160,000	160,000	160,000	160,000	160,000
Revenue with WFRP	156,694	205,119	212,722	205,657	212,110
Net Payment	-3,306	45,119	52,722	45,657	52,110

Note: WFRP buy-up producer paid premium can be calculated via the RMA Cost Calculator.

While WFRP and WFRP Micro Farm provide higher payments in this case, we can also see that covering the amount of revenue and risk that WFRP provides is more expensive. The premiums paid for WFRP and WFRP Micro Farm are therefore higher than those for NAP or APH Sweet Corn. Another way to look at the value of alternatives is to consider how much coverage a producer receives per dollar spent (table 6). For this farm example, the best value per dollar spent to cover revenue is the WFRP Micro Farm at \$35 (for Ulster) or \$38 (for Monroe) of insurance coverage for every dollar spent. In the single crop example for sweet corn, APH Sweet Corn and NAP coverage level per dollar spent are similar. NAP in this example is more cost effective than APH because the service fee is lower and, more importantly, the premium for buy-up for NAP is heavily weighted by the yield whereas APH is more weighted by the risk of the

crop and this farm has low yields for sweet corn, so they pay a low price for insurance. For a farm with higher yields NAP can be more expensive than APH.

Table 6. Liability per dollar spent to protect 100 acres of sweet corn in 2022 in Ulster and Monroe Counties, NY

Program	Liability amount	Producer cost	Liability per dollar spent
NAP 65 (Ulster)	\$45,864	\$2,768	\$16.57
APH 65 (Monroe)	\$45,864	\$3,394	\$13.51
WFRP 65 (Monroe)	\$218,400	\$13,281	\$16.44
WFRP 65 (Ulster)	\$218,400	\$12,743	\$17.14
WFRP Micro 65 (Monroe)	\$218,400	\$5,678	\$38.46
WFRP Micro 65 (Ulster)	\$218,400	\$6,290	\$34.72

Note: Based on sweet corn farm example from above.

One of the benefits WFRP offers for diversified farms (2 or more commodities) is much higher levels of federal subsidy for the insurance premium compared to what is available for APH or WFRP single crop farms. WFRP Micro 65 provided an automatic government subsidy of 80 percent of the premium, compared to only a 59 percent subsidy for APH 65 and WFRP 65 (single crop). But if the sweet corn producer using WFRP were to cover two additional crops, the premium could be comparable to, or less than, the premium for WFRP Micro.

Representative Example for a Diversified Farm

Next, we compare the use of NAP, WFRP and WFRP Micro insurance for a representative diversified vegetable farm in Ulster County, NY. The diversified farm acreage, yield, market price, NAP price, and commodity revenue are shown in table 7. We specifically choose Ulster County, which does not have APH policies available for many of these crops. The crops selected are commonly grown on diversified farms in New York and were the vegetables with the highest NAP applications (excluding potatoes; Hungerford et al, 2017). The yields are the County Expected Yields for the crop provided by FSA. The NAP Price is the FSA direct market sales price for Ulster County used by FSA for NAP. The Market Price is the most recent price for the crop reported by USDA, Agricultural Marketing Service (AMS) for farmers markets in Vermont for the week. Several of these crops are seasonal, and farms do not grow them concurrently. Therefore, prices for all these crops do not appear in every report. We drew cucumber prices from the market report for week ending on Sunday 6/4/2023, tomatoes and winter squash 10/16/2022, pumpkins 10/9/2022, summer squash 10/2/2022, and potatoes 9/11/2022. We assumed a pumpkin weight of 4 pounds and converted all prices to hundredweight (cwt). While

WFRP can provide loss support for both yield and price losses, we will look at yield losses for comparability with the NAP product.

Table 7. Example Farm in Ulster County, NY

Crop	Acres	Ulster yield (cwt/acre)	Market price (\$/cwt)	Ulster NAP price (\$/cwt)	Commodity revenue
Cucumbers	0.5	209.12	\$112.00	\$52.56	\$11,710.72
Peppers (sweet)	0.5	187.35	\$392.00	\$72.11	\$36,720.60
Pumpkins (jack)	2	154.54	\$140.00	\$26.65	\$43,271.20
Summer squash	1	221.8	\$252.00	\$69.27	\$55,893.60
Tomatoes (heirloom)	1	209.86	\$448.00	\$115.13	\$94,017.28
Winter squash	2	163.55	\$187.04	\$52.78	\$61,180.78
Potatoes	1	296.67	\$224.00	\$22.75	\$66,454.08
Total farm revenue					\$369,248.26

Source: Authors calculations, using yield and price information from USDA, Farm Service Agency and Agricultural Marketing Service.

Since this farm is insuring several crops in the same county, the NAP service fee is capped at the maximum of \$850 per county. Unlike the single-crop farm example, the premium cost of WFRP is now significantly lower than WFRP Micro Farm, owing to the diversification count which is capped at 3 in WFRP Micro Farm but is higher in WFRP. Following the calculations in the Appendix, the amount of revenue from each of the 7 commodities would result in a WFRP commodity count of 6. The maximum payment for a total yield loss that this farm can receive is as low as \$23,107, but \$240,011 under WFRP and WFRP Micro Farm (table 8). The maximum amount of lost revenue recouped is highest for the two WFRP products, at 65 percent, versus 6 percent for NAP Basic and 15 percent for NAP buy-up.

Table 8: Comparison of cost of NAP, WFRP and WFRP Micro

	NAP Basic	NAP buy-up 65%	WFRP 65% Ulster	Micro Farm 65% Ulster
Service fee	\$850	\$850	\$655	\$655
Premium	\$0	\$2,867	\$2,784	\$6,192
Fee + premium	\$850	\$3,717	\$3,439	\$6,847
Maximum indemnity payment	\$23,107	\$54,617	\$240,011	\$240,011
Maximum loss recouped	6.26%	14.79%	65.00%	65.00%

In this example, WFRP 65 is both less expensive than NAP buy-up, and in the event of a total loss WFRP 65 would recoup 65 percent of the farm's expected revenue, compared to only 15 percent using NAP. NAP Basic at only \$850 is the least cost option, but the payment, in the event of a significant loss, is low. Sufficient injury to the farm's financials could necessitate additional loans or external sources of income. Still, the low cost could still make it the best option for a farm that is required to carry insurance, generally experiences low risks, and has adopted other risk management practices.

In our single crop sweet corn example, the WFRP Micro Farm was less expensive than WFRP. Table 8 shows the strong effect of commodity diversity in WFRP premiums. The Micro Farm 65 option in this example is more expensive than WFRP for two reasons. The first is WFRP bases the premium on the risk factors for the specific crops and how much that crop contributes to the overall farm income (called the “weighted commodity rate”). WFRP Micro Farm has a single commodity rate that is used for the county, regardless of the mix of crops. For Ulster County the rate is 0.286 for 2023. The RMA Cost Calculator showed the weighted commodity rate to be 0.206 for WFRP. A farm growing many lower risk crops in a more favorable location will probably have a more favorable premium under WFRP than under WFRP Micro Farm. The second reason why WFRP is less expensive than WFRP Micro Farm is because WFRP Micro premium discount is always based on 3 commodities and this farm has six counted commodities, so the WFRP premium discount is larger.

A total loss scenario is a rare event on a diversified farm. More frequently a farm will lose a single crop or have reduced yields across the farm due to drought or wet weather. We consider two examples. In Scenario #1 the farm in Ulster County loses the whole pumpkin crop, and 52 percent of the winter squash crop (table 9). Even though the farm has lost over \$75,000 in two crops, they only had a 20 percent loss on the entire farm. To trigger WFRP or WFRP Micro Farm indemnities, a loss of more than 35 percent of expected revenue is needed for 65% buy-up. The yield losses for pumpkins and winter squash would be high enough to trigger NAP Basic and NAP buy-up 65 payments. NAP Basic could be a good option for a farm with WFRP that also wants to make sure that a particularly vulnerable crop has additional coverage.

Table 9. Ulster County Scenario 1: 0% pumpkin, 48% winter Squash, 100% all others

Crop	Historical revenue	Revenue	Policies			
			NAP Basic	NAP buy-up 65%	WFRP	WFRP Micro
Cucumbers	\$11,711	\$11,711	\$0	\$0		
Peppers	\$36,721	\$36,721	\$0	\$0		
Pumpkins	\$43,271	\$0	\$2,265	\$5,354		
Summer squash	\$55,894	\$55,894	\$0	\$0		
Tomatoes	\$94,017	\$94,017	\$0	\$0		
Winter squash	\$61,181	\$29,367	\$190	\$2,935		
Potatoes	\$66,454	\$66,454	\$0	\$0		
Total revenue	\$369,248	\$294,163				
Change in revenue		-20%				
Fee + premium			\$850	\$3,717	\$3,439	\$6,847
Indemnity payment			\$2,455	\$8,289	\$0	\$0
Loss recouped (%)			3	11	0	0
Net payment			\$1,605	\$4,572	-\$3,439	-\$6,847

The second scenario, Scenario #2, also assumes that the farm experiences 0 percent of expected yield for pumpkins, 48 percent of yields of winter squash, but also a loss of 30 percent

to all other crops in the farm to account for across-the-board poor weather conditions (table 10). Yields of 70 percent of expected are not sufficient to trigger NAP buy-up at 65% coverage. However, with an expected revenue change of 38 percent, WFRP and WFRP Micro indemnities are triggered. This example shows that WFRP is able to protect farms against shallower losses. Even though the yields in cucumbers, sweet peppers, summer squash, tomatoes, and potatoes were less than 35 percent, the drop in their yields led to a large revenue drop. In this scenario, the payment for NAP Basic and NAP buy-up is the same as in scenario 1 in table 9, but under WFRP and WFRP Micro, the producer is able to recoup \$8,000 from WFRP and almost \$5,000 from WFRP Micro Farm in lost revenue, after accounting for the cost of the products.

Table 10. Ulster Scenario 2: 0% pumpkin, 48% winter squash, 70% all others

Crop	Historical revenue	Revenue	Policies					
			NAP Basic	NAP buy-up 65%	WFRP 65%	WFRP Micro 65%	WFRP 75%	WFRP Micro 75%
Cucumbers	\$11,711	\$8,198	\$0	0				
Peppers	\$36,721	\$25,704	\$0	0				
Pumpkins	\$43,271	\$0	2,265	5,354				
Summer squash	\$55,894	\$39,125	0	0				
Tomatoes	\$94,017	\$65,812	0	0				
Winter squash	\$61,181	\$42,827	190	2,935				
Potatoes	\$66,454	\$46,518	0	0				
Total revenue	\$369,248	\$228,184	\$2,455					
Change in revenue		-38%						
Fee + premium			\$850	\$3,717	\$3,439	\$6,847	\$4,043	\$7,699
Indemnity payment			\$2,455	\$8,289	\$11,827	\$11,827	\$48,752	\$48,752
Loss recouped			0.02	0.06	0.08	0.08	0.35	0.35
Net payment			\$1,605	\$4,572	\$8,388	\$4,980	\$44,709	\$41,053

We use 65 percent coverage because that is the highest level under NAP, but as previously mentioned, the majority of WFRP policies use 75 percent buy-up. Protecting a higher percentage of your income from loss increases the likelihood of having an event that would trigger a covered loss. Had the farm purchased WFRP 75 or WFRP Micro Farm 75, instead of the 65 percent coverage level, they would have had a significantly higher indemnity payment (last two columns of table 10). If the farm had elected a buy-up of 75 percent, it could have recouped nearly \$50,000 of their lost revenue. For a small farm, the ability to insure actual

revenue at a higher federal subsidy rate (80 percent for WFRP Micro Farm compared to the subsidies 55-67 percent for FCIC APH or WFRP single crop) is significantly less expensive.

Additionally, a producer can purchase another FCIC insurance policy (such as APH) in addition to WFRP if it is at a buy-up coverage level and not at the CAT level. Farms using the WFRP Micro Farm option are not allowed to participate in any other FCIC insurance program. So if the Monroe County producer also had sweet corn, which has an APH policy available, they could use the WFRP *and* APH for the sweet corn. If the producer believes their sweet corn yield will be especially impacted but may not reduce the revenue sufficiently to trigger WFRP payments, they can couple WFRP and APH Sweet Corn for additional coverage.

One benefit to having multiple FCIC policies with WFRP is when other FCIC crop insurance policies are used in conjunction with WFRP, is that the total liability from the other policy is used to adjust the WFRP liability amount for premium calculation purposes and results in a reduced WFRP premium. The other crop insurance becomes the primary policy for that crop and any indemnity paid on those policies will be revenue for the policy year under the WFRP policy to assure duplicate payments for the same crop loss are not made. Farms for high-value crops like apples may consider purchasing a APH policy on a particularly valuable block but use WFRP for the farm to protect both overall farm yields and revenue for particularly high-value blocks, while reducing overall insurance costs.

Discussion on low WFRP use

Despite the goal of increasing access to crop insurance for farms that were not well served by NAP or APH programs, and the apparent affordability of WFRP compared to NAP, especially for diversified farms, participation in WFRP by diversified specialty crop farms in the Northeast has been low (table 1). Given that WFRP seems to provide a higher level of coverage at prices that are comparable to NAP, especially for diversified farms – why is it so rarely used by diversified specialty crop farms in the Northeast?

In 2019, we interviewed 9 producers in New York state who grew specialty crops—three purchased RMA crop insurance products, one purchased NAP, five purchased neither, and none of the farms purchased WFRP (Raszap Skorbiansky *et al.* 2022). Barriers to WFRP cited by these producers and elsewhere in the literature include lack of promotion of WFRP by crop insurance agents, general lack of familiarity with federal crop insurance programs, cost of insurance compared to the expected coverage level, cumbersome paperwork, and challenges with recordkeeping and tracking sales. However, we also found in our interviews of small organic growers in New York State that some had not investigated buying crop insurance. These growers reported that they felt stretched for labor and management and the process of acquiring crop insurance was something that they could not do with their limited time. There were also misconceptions about WFRP, including the perception that WFRP cannot be used by farms operating CSA programs.

Since our interviews with producers in 2019, USDA has made changes to WFRP intended to mitigate many of these concerns and encourage more participation by diversified specialty crop growers. Most notable is the addition of the Micro Farm option, which greatly reduces paperwork and recordkeeping requirements and is a viable and affordable alternative for APH policies for covering single crops. The specific changes are outlined in Appendix table 4. Next, we discuss two issues that may still be impacting uptake of WFRP: low familiarity with WFRP and low confidence about returns on investment.

Low Familiarity with WFRP

A significant barrier to entry for enrolling in WFRP and WFRP Micro Farm is likely the low familiarity with FCIC crop insurance programs. Generally, in States with fewer producers submitting FCIP policies, producers submitted more NAP applications (Raszap Skorbiansky *et al.* 2022). New York specialty crop producers are significant users of the NAP program (as shown in figure 7). Many producers enroll in NAP after enrolling for a USDA guaranteed or direct loan. Enrolling in NAP has lower transaction costs for many producers as they are already working with FSA. Only 18 fruit and vegetable crops in the Northeast are covered by an RMA crop insurance policy and the availability of those crops is usually limited to counties where wholesale-scale production is concentrated. Most specialty crop producers in New York States and the Northeast do not have access to RMA single crop insurance products and therefore are not familiar with them and do not currently work with a crop insurance agent.

This potential explanation is supported by patterns of growth in adoption and utilization of WFRP. Most of the growth in WFRP policies has come from specialized farms in the West and Midwest that are also existing users of RMA crop insurance products for single crops like apples or alfalfa. The states with the highest number of WFRP policies are generally those with a large portion of U.S. specialty crop production, i.e., Washington, California, Colorado, Florida, Idaho, Michigan, North Carolina, and Oregon (figure 4). And many of the specialty crops in those states are covered by other FCIC insurance products.

Additionally, as shown in figure 6, the top three commodities covered by WFRP in 2022 were all specialty crops—fresh market apples, sweet cherries, and pears. Producers of these commodities are also highly insured under other single-crop policies. Washington, New York and Michigan produce the most apples. Washington and Oregon produce the most pears. California, Oregon, Washington, and Michigan produce the most cherries in the United States. A large portion of the acres in the states that produce these crops are covered by apple, cherry and pear crop insurance policies (table 11).

Table 11. Acres (percent of state acres) covered under RMA crop insurance for selected states and specialty crops

	California	Michigan	New York	Oregon	Washington
Apples	12,700 (29%)	22,254 (72%)	32,210 (73%)	2,199 (44%)	134,642 (78%)
Cherries	29,398 (86%)	15,852 (49%)	279 (17%)	6,150 (45%)	31,117 (74%)
Pears	7,992 (80%)			9,637 (64%)	15,002 (74%)

Source: USDA, Federal Crop Insurance Corporation, 2020a.

These apple, cherry and pear producers are very likely to be aware of FCIC crop insurance and probably have direct experience or knowledge of working with a crop insurance agent. An examination of WFRP enrollment in New York State shows that the three counties where producers have enrolled in WFRP in the past few years are also the counties that have multiple FCIC insurance products available (table 12):

Table 12. New York State counties with WFRP Policies, 2022

County	Number of policies (2022)	Other RMA policies available in the county
Orange	2	Apple, Corn, Onions, Soybeans
Wayne	6	Apples, Cherries, Corn, Dry Beans, Oats, Forage, Potatoes, Soybeans, Wheat,
Yates	2	Corn, Dry Beans, Grapes, Oats, Forage, Processing Beans, Soybeans, Wheat

Source: USDA, Federal Crop Insurance Corporation, 2020a.

As an aside, note that these percentages from FCIC data are similar for some crops listed in the Appendix table 1 using FSA data. Appendix table 1 is sourced from mandatory annual acreage reporting to FSA for some programs and voluntary reporting otherwise. For crops with high reporting (e.g., corn), FSA data is a good source to track planted acreage. Specialty crops often have lower reporting, but that is not always the case. To highlight some examples, cherries in California, apples in Washington, and apples in New York have very similar acreage as reported by NASS in 2019 and as reported by FSA in 2022. Because FSA updates the data annually, it is a useful source to understand movements in the share of acreage under a crop insurance policy.

Also of note, in 2022 RMA carried out a “Roadshow”, or a series of workshops to disseminate information to agricultural producers about updates and improvements to WFRP, to answer questions, and to resolve any misconceptions about the program. It is too early to know

the impacts of this outreach by RMA, but the effort shows the agency understands that many producers are unfamiliar with the product.

Uncertainty of returns from WFRP

One reason for not purchasing WFRP described by diversified producers in New York State is that they believe that most instances of crop loss would be unlikely to trigger an insurance payment large enough to justify the expense of the premium. This viewpoint includes the non-monetary cost of time and attention to enroll and comply with requirements. Part of this concern may be based on their direct experience with, or impression from other producers about, NAP payments. NAP is primarily a disaster program and NAP payments are more infrequent and smaller than those from APH. According to FSA data obtained by the authors, in 2021, the highest year for NAP payments since 2012, NAP disbursed a total of \$2.1 billion dollars nationwide. In comparison, FCIC reported in their 2021 Summary of Business \$9.6 billion in total indemnities for 2021, with New York receiving \$35 million.

Conclusion

Whole-Farm Revenue Protection may be a useful insurance option for producers that need a high level of revenue protection and/or have a diversified farm. Because of the diversity and premium subsidies, the cost of WFRP is often competitive with that of NAP and APH policies which provide much less revenue protection. For small farms whose income predominantly comes from one or two crops, the WFRP Micro Farm Program is particularly appealing. Despite its benefits, WFRP has generally low use in the United States and New York State. Due to lack of familiarity with the product among producers and a low loss ratio, outreach is necessary. Producers who already feel overwhelmed will not have the time or energy to seek out a new agency and fill out additional paperwork. In contrast to other risk management programs, WFRP allows for the use of tax forms, and WFRP Micro Farm allows for combining all crops under a single “Micro Farm” commodity, but producers may not be aware of these conveniences. In 2022, RMA created the WFRP Roadshow to reach more producers interested in learning about the policy which could lead to higher use in the future. Low use of insurance is not unique to crop insurance products like WFRP. A high percentage of houses in flood plains lack flood insurance, unless it is mandated by a lender. Similarly, a high number of individuals lack health insurance, even when widely availability.

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Appendix

Share of Northeast acreage insured for select crops, 2021

Appendix Table 1 shows acreage insured by FCIP crop insurance, and share of FCIP acreage over FSA reported acreage for select crops in the Northeast for the year 2021. The information is sourced from USDA RMA's State Profiles (<https://www.rma.usda.gov/RMALocal>). Note that the information provided by the State Profile does not necessarily correspond with share of total acreage insured. The 2020 RMA Report to Congress on Specialty Crops (RMA, 2020a) provides a comparison of acreage under a crop insurance policy and USDA, National Agricultural Statistics Service (NASS) data. However, the most recent data is from 2019 for many years, and for others 2015. Meanwhile, RMA's State Profiles base their data on FSA's Crop Acreage Report data (FSA-578 form). FSA requires producers participating in several programs (including Agriculture Risk Coverage and Price Loss Coverage) to submit the FSA-578 form, which includes information on commodity-specific acreage. The data is producer-certified and failure to do so can result in loss of program benefits. FSA also takes voluntary FSA-578 from producers.

Due to the sample of producers that are required to submit data to FSA, some crops are more highly represented in the dataset than others. For example, FSA reported 90.3 million planted acres of corn, versus 93.3 million reported by the USDA World Agricultural Supply and Demand Estimates (WASDE), thus capturing about 97 percent of the market. On the other hand, a crop such as cucumbers, with producers who may participate in USDA programs with reporting requirements to a lesser extent, will have lower participation in FSA acreage reporting. For that reason, the table does not represent the share of total acres planted, but the share of total acres reported to USDA and participating in USDA programs with acreage reporting as a requirement. In general, the State Profiles show higher shares of acreage under insurance than the 2020 Report to Congress.

Appendix Table 1: Acreage and coverage for fruit and vegetable crops in the Northeast, 2021

Crop		ME	NH	VT	NY	MA	CT	RI	PA	NJ	DE	MD
Apples	Acres	1,137	549	853	31,196	1,006	753	36	11,716	256		874
	%	90	61	50	71	39	100	26	60	78		96
Blueberries	Acres	8,089								7,073		
	%	80								84		
Cabbage	Acres				2,095				124			
	%				33				24			
Cherries	Acres				256							
	%				43							
Cranberries	Acres					9,442		99		1,176		
	%					77		81		76		
Cucumbers	Acres										1,116	773
	%										97	100
Fresh market sweet corn	Acres	150	288	36	978	727	964	206	801	418		-
	%	53	100	14	22	37	91	55	21	18		-
Fresh market tomatoes	Acres						-		8			-
	%						-		6			-
Grapes	Acres				18,480	-	9	101	7,741	77		91
	%				53	-	9	77	81	27		64
Green peas	Acres				8,712				-	-	2,722	1,376
	%				100				-	-	84	77
Onions	Acres				6,635							
	%				100							
Peaches	Acres		71	2	341	153	154	6	1,451	2,098		250
	%		100	50	56	100	100	25	39	55		71
Pears	Acres				61				35			
	%				16				74			
Potatoes	Acres	51,714			10,035	2,304	4	-	1,976	346	871	1,953
	%	99			80	78	25	-	41	19	91	98
Processing beans	Acres				17,005				5,220	110	6,699	4,355
	%				84				82	97	82	84
Sweet corn	Acres				7,124				-	993	7,379	2,065
	%				85				-	61	86	44
Tomatoes	Acres				-				1,366	1,025	-	-
	%				-				98	97	-	-

Note: The percentage reports insured acres relative to FSA reported acres. Blank fields indicate that insurance is not available, while “-” that insurance is available, but no acres are enrolled.

Source: USDA, Risk Management Agency, 2022a-k.

Calculating WFRP Commodity Counts and Diversity Factors

WFRP is intended to be less expensive coverage for a diversified farm because of the risk reduction benefits of diversification. WFRP offers reduced premiums and higher federal subsidies for insurance premiums compared to single crop APH FCIC products. The key aspect to WFRP that determines what level of coverage, subsidy or premium diversity discount a farm is entitled to is the “commodity count”. This is one of the aspects that complicates WFRP. The commodity count is not as simple as just counting the number of commodities covered. For a commodity to “count,” the commodity must make up at least a third of the average revenue. Commodities to be insured are first grouped by commodity codes established by RMA for that county. These codes can be found on RMA’s Actuarial Information Browser.¹⁷ Crops without a code are grouped into the most applicable code. We show how the nine commodities of the representative farm in Ulster County, NY would be grouped into seven WFRP commodity codes in Appendix Table 2.

Appendix Table 2. Grouping Crops by WFRP Commodity Code

Commodity	WFRP Commodity Code	Expected Revenue	Combined Expected Revenue
Cucumbers	013210 Cucumbers (Fresh Market)	\$11,711	\$11,711
Sweet Peppers	008302 Peppers (Fresh Market)	\$36,721	\$36,721
Pumpkins (Jack)	014700 Pumpkins	\$43,271	\$43,271
Zucchini	066901 Squash Summer	\$17,000	\$55,894
Yellow Squash	066901 Squash Summer	\$38,894	
Brandywine heirloom tomatoes	868701 Tomatoes (Fresh Market)	\$70,000	\$94,017
Beefsteak heirloom tomatoes	868701 Tomatoes (Fresh Market)	\$24,017	
Butternut Squash	066902 Squash Winter	\$61,181	\$61,181
Potatoes	008400 Potatoes	\$66,454	\$66,454
Total Expected Revenue			\$369,248

¹⁷ The RMA Actuarial information Browser can be found here:
<https://webapp.rma.usda.gov/apps/ActuarialInformationBrowser2022/CropCriteria.aspx>

The Qualifying Commodity Count

For the purpose of purchasing WFRP, the qualifying commodity count would be calculated as follows (rounding to 3 decimal places after each step):

1. The original crops are grouped based on their WFRP commodity codes. In the example shown in Appendix Table 2, brandywine heirloom and beefsteak heirloom tomatoes are grouped into one commodity code of fresh market tomatoes with a total revenue of \$94,017, and zucchini and yellow squash are put into one code of summer squash. The 9 original commodities are condensed into 7 commodity codes. Divide 1 by the number of commodity codes, i.e. $\frac{1}{7} = 0.143$.
2. For a commodity code to be eligible, its expected revenue must make up a minimum of a third of the average revenue. Multiply the result of Step 1 by 0.333, i.e. $0.143 * 0.333 = 0.048$. Then the minimum qualifying amount (MQA), or the threshold revenue, is $0.048 * \$369,248 = \$17,724$.
3. Commodity codes with an expected revenue at or above the threshold revenue are automatically eligible in the commodity count. In this example, all commodity codes except cucumbers have an expected revenue that exceeds the MQA of \$17,724. Thus, we have 6 qualifying commodities.
4. To determine how many additional commodity codes will be counted beyond the eligible commodity codes (in this case six), the revenue of the remaining commodity codes (only cucumbers, \$11,711) is divided by the qualifying revenue threshold (\$17,724). This equals 0.66. This amount gets rounded down, so the combined commodity count is 0. If instead, the representative farm also grew spinach with an expected revenue of \$18,000, their combined revenue would be \$29,711. Dividing this value by the MQA equals 1.676, and rounded down the two commodity codes would be counted as one additional qualifying commodity.
5. The sum of the qualifying commodities from Steps 3 and 4 (6 and 0) leads to a total commodity count. In this example, $6 + 0 = 6$.

If the farm had a combined direct marketing code, it would be excluded from the average expected revenue calculation, and the combined direct marketing code would be counted as two commodities for the purpose of the commodity count determination.

In contrast to the WFRP, a farm with Micro Farm is assigned a calculated commodity count of 3. If the Ulster County farm above were eligible for Micro Farm instead, the calculated commodity count would be equal three, rather than seven.

Diversity Factor Calculation

The premium rate calculated by RMA to determine the WFRP requires the commodity count and a “diversity factor” to determine the premium subsidy. Calculating the diversity factor for the premium involves the following:

1. Calculate the commodity factor:

$$\text{Commodity Factor} = \frac{1}{\text{qualifying commodity count}} = \frac{1}{6} = 0.167$$

2. For each eligible ungrouped commodity code, calculate the absolute value of the deviation (DEV) and round to 3 decimal points.

$$\text{DEV (ungrouped)} = \left| \frac{\text{expected revenue amount}}{\text{total expected revenue}} - \text{commodity factor} \right|$$

As an example, for tomatoes, this is equal to:

$$\text{DEV}_{\text{tomatoes}} = \frac{\$94,017}{\$369,248} - 0.167 = 0.088$$

For grouped commodity codes, calculate the following absolute value, rounded to 3 decimal points.

$$\text{DEV (grouped)} = \left| \left(\frac{\text{min(qualifying amount)}}{\text{total expected revenue}} - \text{commodity factor} \right) * \text{grouped count} \right|$$

In this example, for the only ungroups commodity code, cucumbers, this is equal to:

$$\text{DEV (grouped)} = \left(\frac{\$11,711}{\$369,248} - 0.167 \right) * 0 = 0$$

Finally, the summed commodity deviation is the sum of all calculated deviations. For this example, that is equal to 0.236.

The final calculation for the diversity factor requires the use of the formula shown in Appendix Table 3. The diversity factor is used to calculate the premium discount for WFRP. A lower DF means higher diversity, so farms with 7 or more commodities receive a value of 0.410 and pay 41% of the original premium value, while those with 1 commodity receive a value of 1 and pay 100% of the original premium value. For Micro Farm, the premium discount is set at .523 regardless of the number of crops. In this example, the qualifying commodity count is 6 and the diversity factor is calculated to be:

$$\text{Diversity Factor} = 0.412 + (0.0325131 \times 0.236) + (0.1945816 \times 0.236^2) = 0.634$$

Appendix Table 3. Formula for calculating WFRP diversity factor

Calculated Commodity Count	Diversity Factor Formula
1 Commodity	1.000
2 Commodities	$.668 + (0.0179999 \times \text{DEV}) + (0.3142858 \times \text{DEV}^2)$
3 Commodities	$.523 + (0.0607623 \times \text{DEV}) + (0.2229 \times \text{DEV}^2)$
4 Commodities	$.474 + (0.0248208 \times \text{DEV}) + (0.218472 \times \text{DEV}^2)$
5 Commodities	$.437 + (0.0710358 \times \text{DEV}) + (0.1760129 \times \text{DEV}^2)$
6 Commodities	$.412 + (0.0325131 \times \text{DEV}) + (0.1945816 \times \text{DEV}^2)$
7 Commodities or more	.410

Appendix Table 4: Changes in whole-farm insurance programs from 1999 to 2023

Comparison	Adjusted Gross Revenue (AGR) 1999–2014	AGR-Lite 2003–2014	Whole-Farm Revenue Protection (WFRP) 2015 and on	WFRP Micro Farm 2022 and on
Liability limit	\$6.5 million.	\$1 million.	2015 – 2022: \$8.5 million. 2023 to date: \$17 million.	Liability capped at 85% of approved revenue covered (\$350,000 for first coverage year, or \$400,000 for carryover users.)
Coverage level	65%, 75%, and for 3 or more qualifying commodities 80%.	Same as AGR.	50%–85% in 5% increments No catastrophic level (CAT) is available for WFRP.	Same as WFRP.
Can the product be used to insure only one commodity?	Yes Except potatoes which must have a minimum of 2 calculated commodities.	Same as AGR + not eligible if more than 83.35% of total revenue is from potatoes.	Yes, unless the producer only has one commodity ¹⁸ <u>and</u> that commodity has an FCIP revenue product available. For producers covering potatoes, must have a minimum count of 2 commodities.	Same as WFRP.
Limit on animal and animal product coverage	Not eligible for AGR if more than 35% of expected income was from animals or animal products.	No.	2015–2019: Not eligible if the expected revenue from animals and animal products is greater than \$1 million. 2020 and on: Coverage of expected revenue from animals and animal products limited to \$2 million.	No.
Limit on nursery and greenhouse crops coverage	No.	No.	2015–2019: Not eligible for WFRP if the expected revenue from nursery/greenhouse products on the farm is greater than \$1 million. 2020 and on: Coverage of expected revenue from nursery/greenhouse products on the farm limited to \$2 million.	No.
Is there a limit on crops bought for resale?	No more than 50% of allowable income from commodities purchased for resale.	Same as AGR.	2015–2017: If more than 50% of allowable revenue purchased for resale, not eligible. 2018 and on: Limit of 50% of expected revenue from commodities purchased for resale.	Same as WFRP.
Payments for replanting	No.	No.	Up to 20% of expected revenue for annual commodity with 20 acres or 20% of crop needing replanting. Not allowed if also insured under a different policy with replant payments.	Replant payments are not allowed.

¹⁸ As described in section “Calculations for Whole-Farm Revenue Protection (WFRP) Program.”

Interaction with NAP	NAP not available for commodities insured under AGR in counties that AGR is available. ¹⁹	Same as AGR.	2015–2019: Can participate in both, are required to choose between NAP/WFRP indemnities. 2020 and on: Producers may receive indemnities under both policies, as NAP indemnities are not counted as revenue-to-count under WFRP up to the deductible of the WFRP policy.	Same as WFRP.
Interaction with other Federal Crop Insurance Corporation multi-peril crop insurance (MPCI) policies	Not eligible for AGR if 50% of allowable income comes from crops with individual insurance policies or from animal/animal products with policies covered under the Federal Crop Insurance Act.	Other MPCI is optional.	Farms with CAT coverage not eligible. Farms growing a commodity that is insurable under the Revenue Protection (RP), RP with the Harvest Price Exclusion, or the Actual Revenue History plan of insurance must have a minimum calculated count of 2 commodities on the farm to be eligible. Other crop insurance on the commodities is considered the primary, with indemnities included as revenue to count.	Producers may not enroll in another FCIC plan of insured, including WFRP, to be eligible for Micro Farm.
Market readiness amounts in insured revenue	No.	No.	Post-production tasks that: (1) are the minimum required to remove the commodity from the field to make it market ready, (2) are performed in the field or land within a reasonable proximity to the field, or (3) do not add value to the commodity, do not have to be deducted from the allowable or expected revenue. Tasks with expenses (e.g., sorting) or that add value (e.g., making wine from grapes) occurring after harvest must be removed from allowable revenue and expenses.	Market readiness and post-production operations, such as canning, freezing, and processing activities, may be included in allowable revenue.
Diversification Premium Discount	No.	No.	Calculated with the use of a formula, as shown in Table 4.	Premiums are calculated with a diversification discount of 0.523.
Rating Methodology	Rates revenue variability of individual commodities.	Same as AGR.	Rating is based on the commodities grown and the amount of expected revenue for each commodity reported for the applicable rate code. Premium rates are calculated for each individual farm.	Commodities are not assigned individual prices. One value for all commodities on the operation is established based on the average allowable revenue of the previous three years.
Information Needed to Apply	To apply, must reproduce 5 years of allowable income and	Same as AGR.	To apply, must reproduce 5 consecutive years of Schedule F or other farm tax forms (must be possible	To apply, must reproduce a Whole-Farm History Report with a minimum of

¹⁹ https://legacy.rma.usda.gov/handbooks/18000/2007/07_18050.pdf

	<p>expense data from IRS returns (Schedule F or equivalent); an annual farm report for the insurance year listing each commodity to be produced, the expected quantity of the commodity to be produced, and the expected price for the commodity; beginning inventories (if available); and indication of changes that may result in lower income for the insurance year than the historical average.</p>		<p>to complete a Schedule F). If qualified as a beginning or Veteran Farmer or Rancher, may provide 3 consecutive years (4 if qualified the previous year) of Schedule F or other tax forms. If physically unable to farm for 1 of the 5 historic years, but farmed in the previous year, may qualify. If tax-exempt (e.g., Tribal entity) and have acceptable third-party records available, those can be used to complete Substitute Schedule F tax forms.</p> <p>To qualify as an expanding operation, must provide information supporting expansion (e.g., increased acres, added equipment, new varieties, or planting patterns).</p>	<p>3 consecutive years of Schedule F or other farm tax forms (must be possible to complete a Schedule F). If files have yet to be filed, a Substitute Schedule F can be submitted for that year. If tax-exempt (e.g., Tribal entity) and have acceptable third-party records available, those can be used to complete Substitute Schedule F tax forms.</p>
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Sources: Federal Crop Insurance Corporation, 1999, 2022, 2007a, 2007b, 2008, 2014, 2015, 2016, 2017, 2018, 2019, 2020b, 2021, 2022b.

Appendix Table 5. Comparison of NAP APH and WFRP Policies

	NAP	APH	WFRP	WFRP Micro Farm
Administering USDA agency	FSA.	FCIC and RMA.	FCIC and RMA.	FCIC and RMA.
Product provider	USDA, FSA.	Private crop insurance agent.	Private crop insurance agent.	Private crop insurance agent.
Cost of CAT – level coverage	Service fee is the lesser of \$325 per crop or \$825 per producer per administrative county, not to exceed \$1,950 for a producer with farming interests in multiple counties.	Service fee of \$655 per crop per county. The premium is fully subsidized by the federal government.	Not available.	Not available.
Farmers Premium for levels above CAT (buy-up)	The product of producer's share of the crop, number of eligible acres devoted to the crop, approved yield per acre, coverage level, average market price, and the 5.25% premium fee.	The product of number of acres, farm's APH yield, yield coverage election, indemnity price election, premium rate (varies by crop, county), subsidy.		
Premium Subsidy Levels	None.	38% to 67% (see table 2).	55% to 67% (see Table 1).	Same as WFRP.
Premium discount for crop diversity	Not applicable.	Not applicable.	80% premium subsidy for 50-70% buy-up for 2+ commodities. 71% subsidy for 80% and 56% subsidy for 85% for 3+ commodities.	Same as WFRP.
Benefits for specific groups	Service fee is waived, and premium is reduced by 50% for beginning, limited resource, socially disadvantaged and qualifying veteran farmers.	Beginning and veteran farmer and ranchers are exempt from paying the administrative fee for catastrophic and for additional coverage policies. Additional 10% premium subsidy for beginning and veteran farmer and rancher.	Additional 10% premium subsidy for beginning and veteran farmer and rancher.	Same as WFRP.
How are yields established?	<p>Approved APH yields require a minimum of 4 consecutive years of production records (or 5 for apples and peaches) for each crop and land unit to be insured and may use up to 10 consecutive years. The approved APH yield is the average of the available data.</p> <p>In the case of producer that cannot generate 4 successive years of records, a transitional or T-yield is substituted for each missing year. T-yields are assigned by crop/county for the type or variety of crop for the year in which an approved yield is being calculated. Producers may not choose to use a T-yield if they have acceptable records.</p>	<p>Approved APH yields require a minimum of 4 consecutive years of production records for each crop and land unit and up to 10 consecutive years. The approved APH yield is the average of the available data.</p> <p>Producers may not opt to drop out a low yield year, but the 2014 Farm Bill APH Yield Exclusion provision allows producers to exclude eligible yields which occur from exceptionally bad years. Years in which the producer did not plant do not disrupt continuity in the records.</p> <p>If the producer cannot generate 4 successive years of records, a</p>	5 years of production records (3 for beginning and socially disadvantaged farms). Follows the APH program.	Not applicable – insurance is based on 3 years of financial records (schedule F) of farm revenue and the ability to document production and sales levels that support farm records.

	NAP	APH	WFRP	WFRP Micro Farm
	<p>T-yields are used to create approved APH yield as follows:</p> <ul style="list-style-type: none"> • 4 years → 65% of T-yield. • 3 years → 80% of T-yield for years missing. • 2 years → 90% of T-yield for years missing. • 1 year → 100% of T-yield for years missing. <p>New producers will have approved yields calculated based on a combination of 100 % of the applicable T-yield for each year of the minimum base period for which there is no record of production and any actual yield for each year of the minimum base period.</p>	<p>transitional or T-yield is substituted for each missing year. T-yields are assigned by crop/county, typically based on the latest available 10-year county average yield.</p> <p>T-yields are used to create approved APH yield as follows:</p> <ul style="list-style-type: none"> • 4 years → 65% of T-yield. • 3 years → 80% of T-yield for years missing. • 2 years → 90% of T-yield for years missing. • 1 year → 100% of T-yield for years missing. <p>New producers receive 100 percent of the T-yield for determining their APH yield. As they accumulate actual yield data, the T-yields are replaced year. New farmers closely associated with previous operators (e.g., children taking over the family farm) can use the previous operator's records to establish their APH yield.</p> <p>APH has yield floors in place to mitigate the effect of catastrophic events. The FCIC Crop Insurance Handbook (USDA-FCIC, 2022a) includes information on yield floors depending on number of record year and state.</p>		
How are prices for crops determined?	Average market prices established on best available information from: USDA County Committee, USDA NASS, USDA National Institute of Food and Agriculture, USDA RMA, USDA Rural Development, USDA Agricultural Marketing Service; prices in similar areas; university data; buyers; local markets; and county agricultural commissioner's office.	Crop price established annually by USDA-RMA.	5 years of records (3 years for new farmers).	Not applicable.
Income Limitation for Participation	\$900,000	None	\$8.2 million (maximum liability).	\$350,000 (maximum liability).

Source: USDA Farm Service Agency, 2020; USDA Risk Management Agency 2021a,b; USDA Federal Crop Insurance Corporation 2014, 2015, 2016, 2017, 2018, 2019, 2020b, 2021, 2022b.

OTHER A.E.M. EXTENSION BULLETINS

EB No	Title	Fee (if applicable)	Author(s)
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