

Types of Federal Crop Insurance Products: Individual and Area Plans

Hunter D. Biram
Assistant Professor -
Agricultural Economics
and Agribusiness

Lawson Connor
Assistant Professor -
Agricultural Economics
and Agribusiness

Introduction

This fact sheet describes the primary ways in which insurance guarantees and indemnities (i.e., crop insurance payment triggers) are determined. There are two primary categories of crop insurance products: individual and area plans. Individual plans use a farm-level trigger (such as a representative yield or revenue), while area plans use an area trigger based on a larger area of land, such as a county. Understanding the differences between these types of products is crucial to assessing the tradeoffs of using these products either independently or jointly.

Individual Plans

Individual plans of insurance provide yield and revenue guarantees based on the RMA's representative yield value and the Actual Production History (APH), which is an average of a farm-level yield history. There must be a minimum of four years of yield history to establish an APH for a given crop¹, and as many as 10 years of farm-level yield history can be used to determine an APH.

insurance plans are Yield Protection (YP), Revenue Protection (RP), and Revenue Protection with Harvest Price Exclusion (RP-HPE). All these plans use an APH yield to establish a guarantee and use annual farm-level production to determine indemnities, which is what makes them individual plans of insurance. The YP guarantee is based on insuring a specific amount of farm-level production, measured in bushels or pounds and determined by multiplying the APH and the producer's chosen coverage level. The RP and RP-HPE guarantees are based on insuring a specific amount of farm-level revenue, measured in dollars and determined by multiplying the APH, a futures price and the coverage level chosen. Subsequent fact sheets will describe these plans of insurance in greater detail.

Area Plans

Area plans of insurance may also provide yield and revenue guarantees. However, the key difference between area and individual plans is that area plans

*Arkansas Is
Our Campus*

Visit our website at:
<https://www.uaex.uada.edu>

The most popular individual

¹In cases where four years of individual farm-level history is not available, a county average yield, called a T-yield is used instead to calculate the APH.

may use county yield or an index to determine guarantees and indemnities, while individual plans use farm-level production values to determine guarantees and indemnities. Area Risk Protection (ARP) insurance is an example of an area plan providing county-level yield protection. Current area plans of insurance that provide area revenue protection include Supplemental Coverage Option (SCO), Enhanced Coverage Option (ECO), and Stacked Income Protection (STAX²). Area plans that use an index to determine guarantees and indemnities include Pasture, Rangeland, and Forage - Rainfall Index (PRF-RI) and Hurricane Insurance Protection - Wind Index (HIP-WI). One unique area product is Margin Protection (MP), which protects against county-level margin risk, or the risk of experiencing a margin (i.e., Revenue net of Operating Cost) less than an expected margin (Biram and Stiles, 2023). Subsequent fact sheets will describe these area plans of insurance in greater detail.

Basis Risk

An important concept in risk management is basis risk. Basis risk generally refers to the many potential outcomes in the difference between two measures. In the context of marketing, basis refers to the difference in a local cash price and a futures price, so the basis risk is all the potential differences in these two prices. The concept applied in the context of crop insurance is primarily concerned with the differences in the farm-level yield and the county yield. Crop insurance companies will often mention there is a possibility a producer will experience a loss on the farm and not receive an indemnity for an area product, and vice-versa. In other words, the basis risk with enrolling in an area yield or area revenue plan of insurance is that a producer may experience a farm-level yield loss and not receive an indemnity under their area insurance.

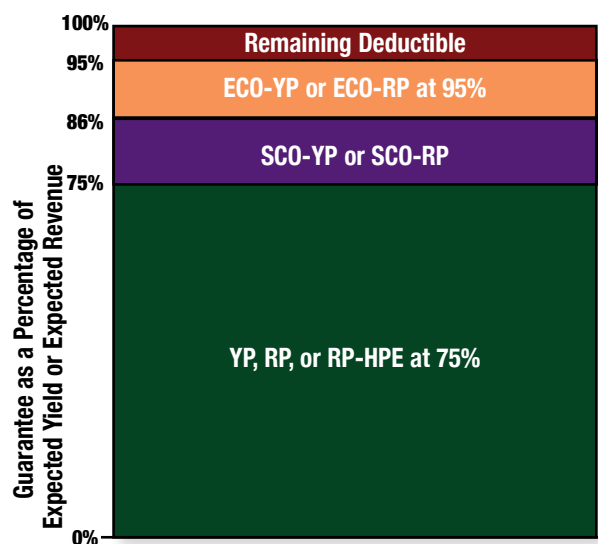
Jointness and Overlap of Individual and Area Plans

Individual and area plans do not have to be

purchased separately. In fact, most area plans are designed to be added as endorsements to an underlying individual plan of insurance. For example, a producer can enroll in RP at the 75 percent coverage level and add SCO and ECO as endorsements. Any indemnities triggered by SCO and ECO can be used to pay towards the 25 percent deductible on the underlying base RP policy. Additionally, YP can be paired with SCO and ECO. However, the protection offered by SCO and ECO are designed to reflect the underlying base policy, providing county-level yield protection when paired with YP rather than county-level revenue protection as with RP. See figure 1 below for an example of how these products can work jointly. Additionally, STAX can be paired with the base YP, RP, or RP-HPE policy (see figure 2).

Some area plans of insurance can be purchased as standalone products. Some examples of standalone area products include STAX, MP, and PRF-RI. However, it is important to consider the basis risk associated with only buying an area plan of insurance. While premiums for area plans generally face higher subsidy rates relative to individual plans (see Biram, 2023), there exists the risk that a loss is experienced at the farm level and not at the area level. Producers should consider historical farm-level loss experience to that of the county. If loss experience at the farm level tends to follow

Figure 1. The Jointness of Individual and Area Products using 75% individual insurance coverage, SCO, and 95% ECO coverage as examples



² It is important to note STAX is only available for upland cotton. A subsequent fact sheet will describe STAX and its indemnity payment mechanism.

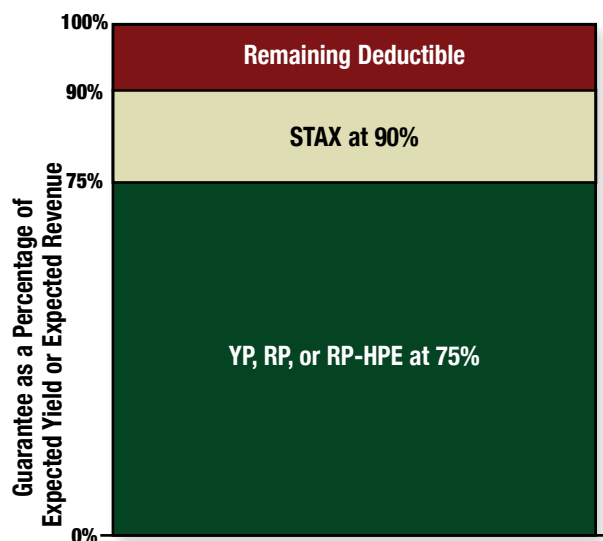
Table 1. Popular individual and area crop insurance products with associated indemnity triggers and status as a standalone product

Product	Type	Trigger	Standalone?
Yield Protection (YP)	Individual	Farm Yield	YES
Revenue Protection (RP)	Individual	Farm Revenue	YES
Revenue Protection, Harvest Price Exclusion (RP-HPE)	Individual	Farm Revenue	YES
Supplemental Coverage Option (SCO)	Area	County Yield or County Revenue	NO
Enhanced Coverage Option (ECO)	Area	County Yield or County Revenue	NO
Area Risk Protection (ARP)	Area	County Yield	YES
Margin Protection (MP)	Area	County Margin	YES
Stacked Income Protection (STAX)	Area	County Revenue	YES
Pasture, Rangeland, Forage - Rainfall Index (PRF-RI)	Area	Grid cell-specific Rainfall	YES
Hurricane Insurance Protection - Wind Index (HIP-Wi)	Area	Hurricane or Tropical Storm Incidence and Wind Speed	NO

what occurs at the county level, that would imply there is lower basis risk between the farm and county. See table 1 for a list of individual and area plans, their indemnity triggers and their status as a standalone program.

While individual and area plans of crop insurance are generally designed to work in tandem with one another, there are restrictions that prevent a producer from enrolling in specific combinations of area plans. One restriction is that a producer cannot enroll in more than one area plan that offers protection in the same range of coverage. For example, MP protects six coverage levels ranging from 70-95 percent, and

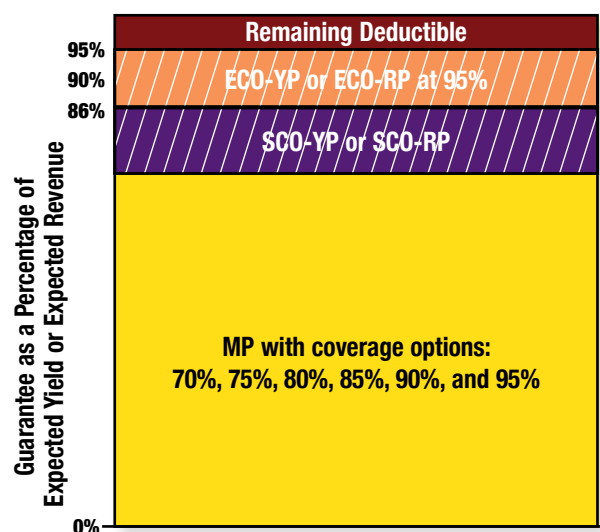
Figure 2. The Jointness of STAX and Individual Products using 75% individual insurance coverage and 90% STAX coverage as examples



ECO provides protection across two coverage levels, 90 and 95 percent. Since both MP and ECO have coverage levels that overlap (i.e., 90 and 95 percent), a producer cannot enroll in both area products. Similarly, since SCO provides coverage at 86 percent, a producer cannot enroll in both SCO and MP since the coverage ranges overlap (see figure 3). Similarly, while STAX can be paired with a base individual insurance plan, STAX cannot be paired with ECO or SCO since STAX provides

coverage across the range of 70-90 percent of expected county revenue which overlaps with the 86 percent coverage level of SCO and the 90 percent and 95 percent coverage levels of ECO (see figure 4).

Figure 3. Examples of potential overlap between ECO, SCO, and MP.
Areas with hashmarks indicate areas of overlap between ECO/SCO and MP which illustrates the reason these products cannot be used jointly.



Whole Farm Products: A Special Case of an Individual Plan of Insurance

The last type of federal crop insurance is a whole farm product. A whole farm product is like an individual plan of insurance in that a producer can get farm-level protection. However, insurance with a whole farm

product is provided across all enterprises in a farming operation rather than for each enterprise. In other words, with a whole farm product, a farmer producing peaches, tomatoes and watermelons as enterprises would have to insure the expected crop revenue across all three enterprises. While farm-level protection is provided, a producer cannot insure each crop individually by farm which makes this a special case of an individual plan of insurance. Examples of whole farm products include Whole Farm Revenue Protection (WFRP) and Micro Farm Insurance (WFRP-MF). These will be discussed in more detail in a subsequent fact sheet.

References

- Biram, H.D. and Stiles, S. (2022). *Margin Protection Crop Insurance: A Way to Manage the Risk of High Input Costs*. University of Arkansas System Division of Agriculture, Cooperative Extension Service Fact Sheet No. FSA66.
- Biram, H.D. (2023). *Why does the Federal Government Subsidize Crop Insurance?*. University of Arkansas System Division of Agriculture, Cooperative Extension Service Fact Sheet No. FSA74.

Figure 4. Examples of potential overlap between ECO, SCO, and STAX.

Areas with hashmarks indicate areas of overlap between ECO/SCO and STAX which illustrates the reason these products cannot be used jointly. Importantly, ECO and SCO cannot be purchased as standalone products as this figure might indicate. Rather, this figure is to show the potential overlap between the products.

