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Your SCO/ECO Policy Under the Hood: What County Yield is the RMA Using?

Over the past decade, crop insurance has continued to expand contract offerings through new area-based policies. Supplemental Coverage Option (SCO) was introduced in the mid-2010s. Enhanced Coverage Option (ECO) was introduced in the early 2020s, and Margin Protection (MP) was introduced in the mid-to-late 2010s. The ECO premium subsidy was recently increased for the 2025 crop year to further encourage producer participation. Both the SCO and ECO programs have experienced increased participation for a variety of reasons. Participants in SCO obtain a perceived higher stated level of protection with a lower premium than a standalone MPCI contract whereas ECO offers a higher level of protection unavailable under MPCI. SCO and ECO policies offer a low barrier to entry as the policies operate similarly to MPCI and require no additional paperwork as enrolling is as simple as checking a box on the insurance application.

When deciding between enrolling in an area-based SCO or ECO policy, the primary change involves using the historical area yield data tabulated by the RMA as opposed to the individual yield history used in the MPCI contract. The price mechanism remains the same as found in the underlying MPCI policy.

To evaluate the effectiveness of SCO and ECO policies, it is essential that the prospective purchaser understands the Expected County Yield (ECY). In Nebraska, producers maintain individual Actual Production History (APH) for irrigated and dryland acreage by insurance units, with annual data added shortly after harvest. Intuitively, an irrigated practice results in a higher APH than a non-irrigated practice. Additionally, irrigated acreage carries a lower risk than non-irrigated acreage.

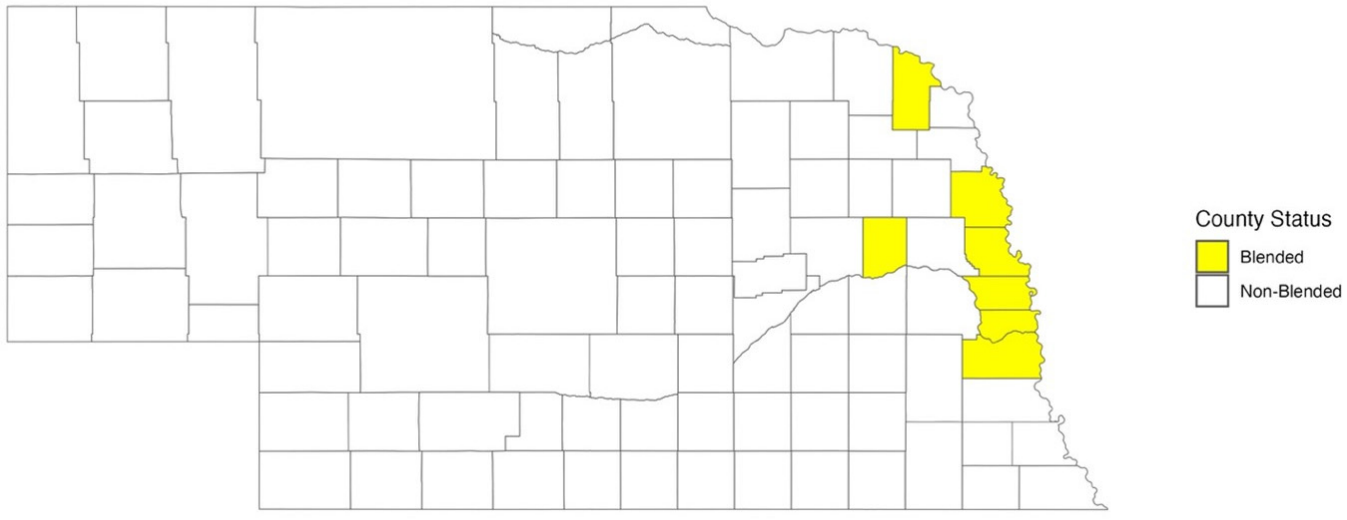
One might assume that since MPCI policies contain separate APH database policies for both irrigated and non-irrigated practices, adding a SCO or ECO policy would also include two separate yield databases. However, our evaluation of SCO/ECO yields shows that this is not uniformly the case. Specifically, we found that the RMA uses identical yields for both irrigated and non-irrigated practice in multiple Nebraska counties. We refer to counties with identical yields between both practices as "blended" counties as we would assume that the RMA is taking a weighted average of irrigated and non-irrigated yields to determine the new ECY. While the RMA made most of these changes in 2021, a few counties may have been blended at an earlier point in time, and additional changes may occur in future crop years.

Our initial thought is that the RMA lacked sufficient data to continue to generate specific ECYs for both practices. Washington County, for example, changed from having distinct irrigated and non-irrigated ECYs to blended ECY in 2021[1], and had just over 11,000 acres of irrigated corn as of the 2022 Census of Agriculture (*USDA/NASS QuickStats Ad-Hoc Query Tool*, 2024). There appears to be plenty of acreage and there still exists an irrigated practice at the farm level - implying the RMA is comfortable rating the practice. Perhaps the 11,000 acres consist of a small number of producers, thereby increasing the likelihood of a producer effect. This is possible, but we are not convinced. Regardless, the reason for the changes the RMA makes to any insurance product should be documented and officially released as changes could have a substantial impact on risk management effectiveness and decision-making by producers, agribusinesses, and policymakers. Furthermore, such changes should move towards better reflecting producer practices as opposed to moving away. The purpose of this article is to document the RMA's use of blended yield data for Nebraska counties for both dryland and irrigated corn and soybean production when evaluating area-based risk management tools such as SCO and ECO policies.

The conversion to one blended yield may seem minor, as one could argue that any event that happens at the county level that would affect an irrigated practice would also happen to the non-irrigated practice. While this is likely the case, the reverse situation, however, does not always hold. For example, drought conditions will have a larger impact on yields for a non-irrigated producer than an irrigated producer. When a blended yield is used, an irrigator could receive an indemnity payment in a drought year, when such a payment is likely unnecessary. This scenario highlights how the use of blended yield data can cause inefficiency in the market for crop insurance due to improper transfer of risk. In 1993, the worst year for irrigated practice at the county level, the indemnity payment likely could have been higher without the use of a blended yield as the ECY was higher under irrigation. For the irrigated producer, the blending changes the risk management strategy, as now they will likely receive a payment during a drought, again when not needed, and a lower payment when a similar event that happened in 1993 occurs due to the lower expected yield. For the non-irrigated practice, it appears nothing of any substantial value has changed.

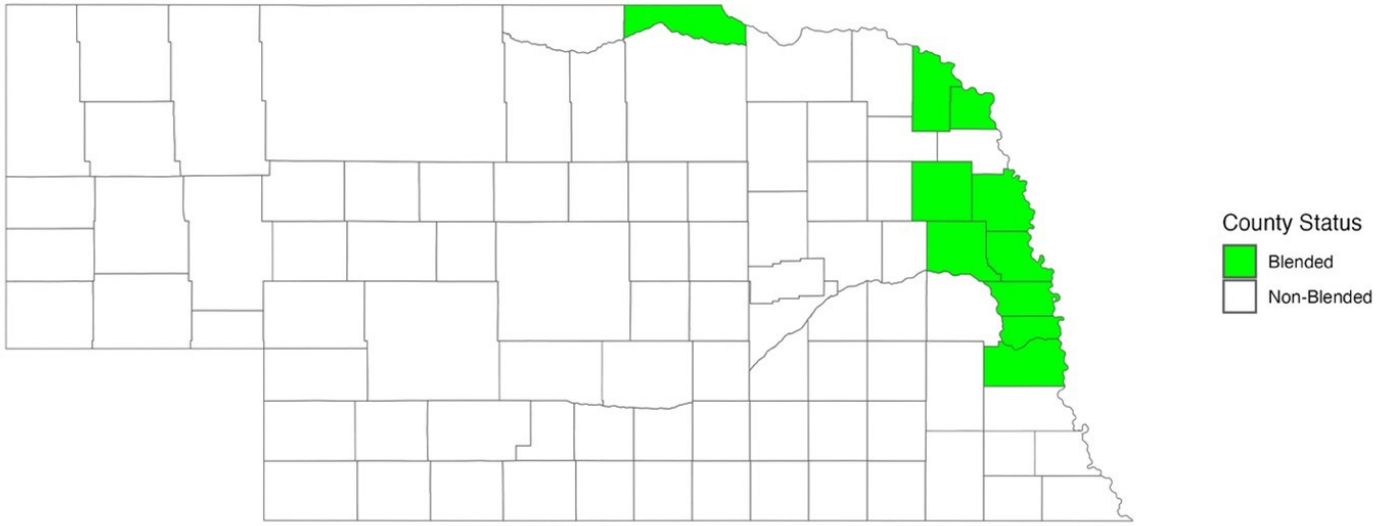
As shown in Figure 1, the blended counties for corn are primarily located in the Eastern half of the state. The eastern half of Nebraska experiences higher rainfall yet the counties which are blended appear to be selected by some other unknown means. Figure 2 presents findings for soybeans, with many of the blended counties also being in the eastern part of the state with the only exception being Dixon County. The mechanism to determine whether the county is blended does not appear to be driven by rainfall. All counties have a MPCI irrigated and non-irrigated practice.

Figure 1, Blended Corn Yield Counties



[1]This is also the first year of ECO.

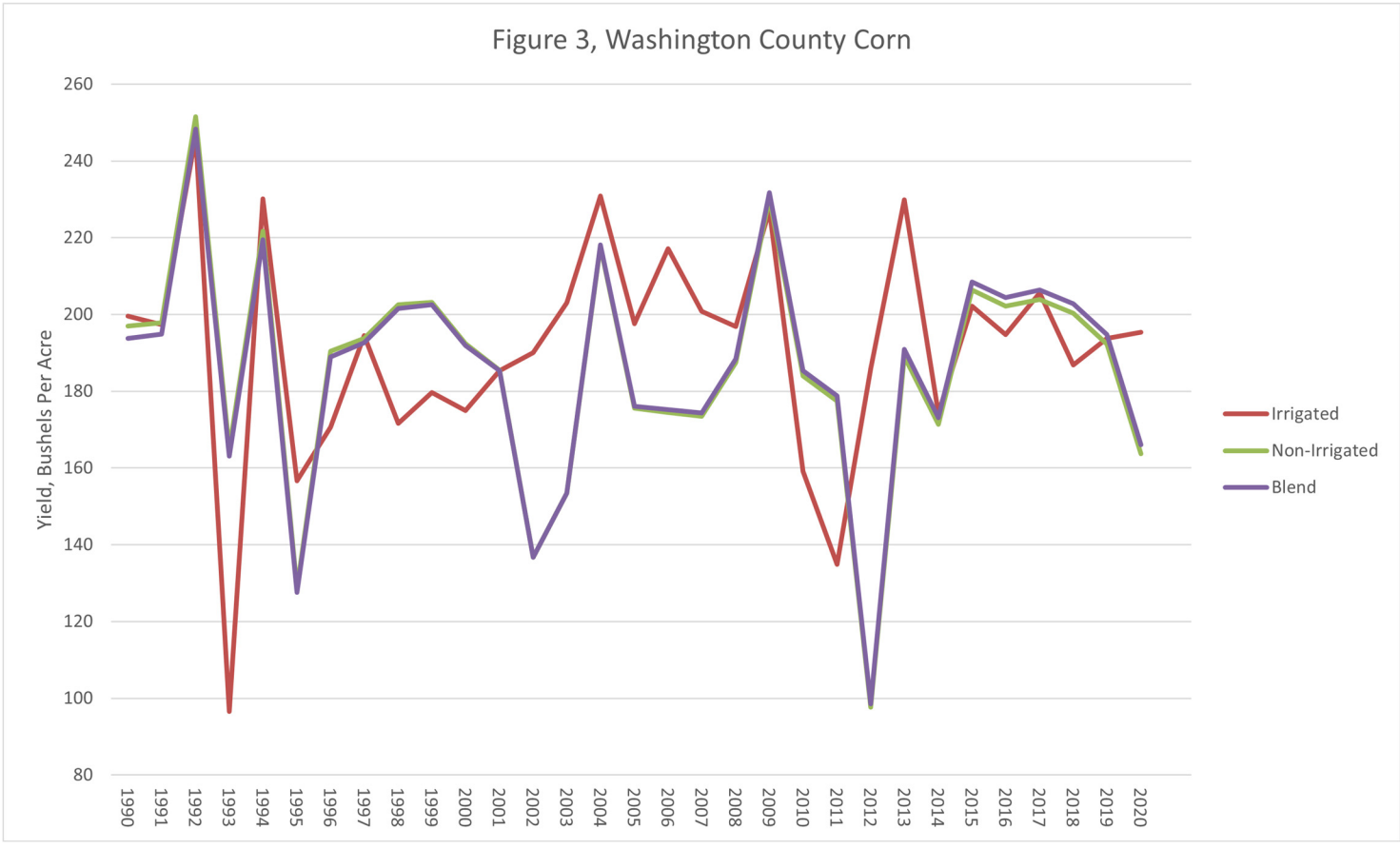
Figure 2, Blended Soybean Yield Counties



The next step in our analysis led us to compare the blended yield to the irrigated and non-irrigated yield histories for the years before blending took place. As the blending primarily occurred in 2021 and data going back to 1990, we can examine this short historical timeframe to assess the effectiveness of the blended yield in reflecting the individual irrigated and non-irrigated yields.

Historical county yields for irrigated, non-irrigated, and blended corn for Washington County are found in Figure 3. From Figure 3, we recognize that the blended yield history almost perfectly mirrors the individual yield for non-irrigated corn. The correlation between the non-irrigated and blended yields is nearly perfect at .998, whereas the correlation between irrigated and blended is weak, at .46. Given that a large majority of corn acres in Washington County is non-irrigated, it is unsurprising that the blended yield better reflects the historical non-irrigated yield.

Figure 3, Washington County Corn



Expected County Yield

The shift to utilizing a blended yield lowers the irrigated producer's ECY. In 2020, the last year of irrigated expected yields, in Washington County, for example, the irrigators' ECY was 192.6 bushels per acre (bpa), while the blended ECY was 183.1 bpa, representing a difference of nearly ten bushels per acre. A lower ECY lowers the risk transfer and expected benefit from being insured, to the detriment of irrigated producers. Interestingly, the non-irrigated ECY is 185.6 bpa, 2.5 bpa higher than the blended ECY.

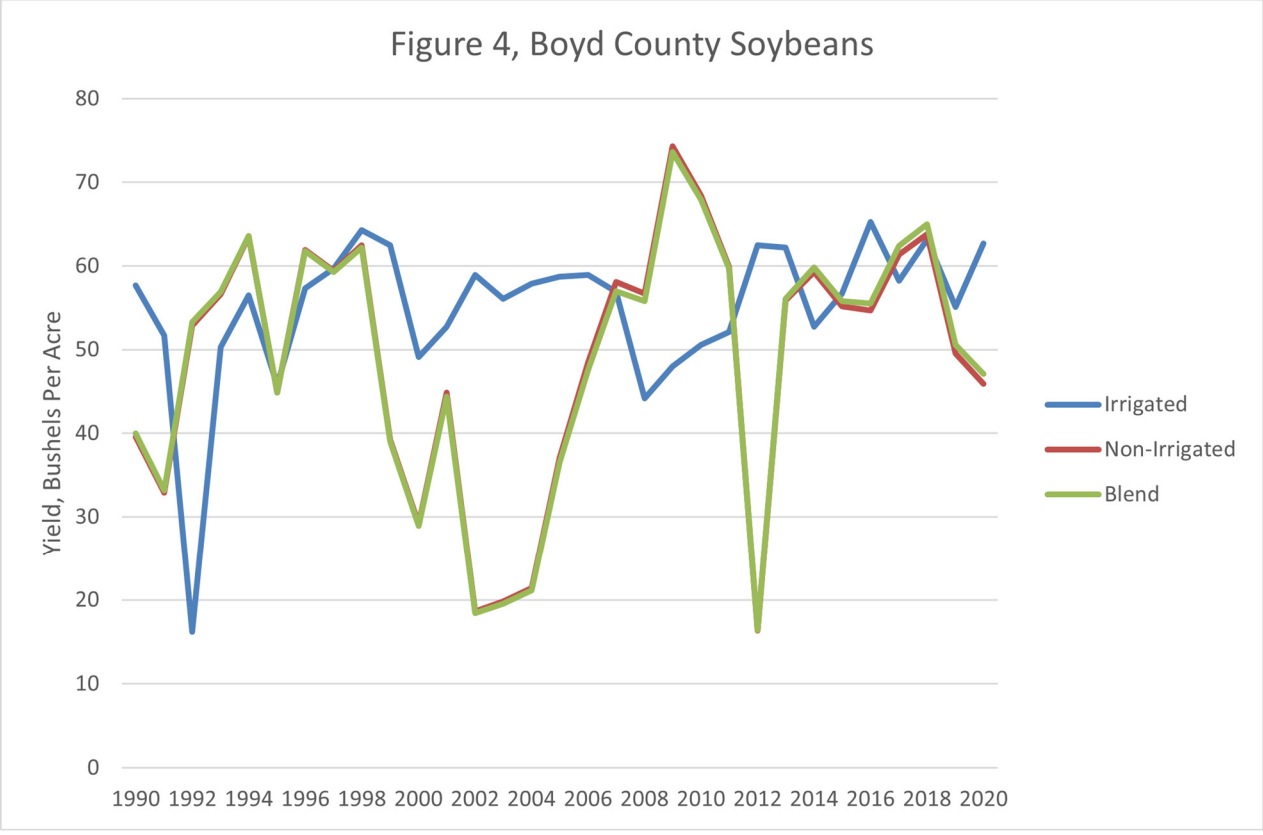
Yield risk or base county rates

The higher the rate, the more the producer pays for each unit of insurance or bushel. Adding irrigation removes a major peril, drought, resulting in a lower premium rate. This is reflected in how, before blending, base county rates under SCO were lower for irrigated production than non-irrigated production. Blending yields results in a uniform base rate and given that the blended yield closely follows the non-irrigated historical corn yields, the rate, logically, would better reflect the historical rate for non-irrigated corn. Irrigated producers now pay more for each unit of insurance, although, with the lower expected yield, it is ambiguous as to how much the cost of the premium would change.

County trend

The irrigation trend for Washington County was found to be 2 bushels per year with the non-irrigated trend found to be 2.7 bushels per year. Under blending, the yield trend became 2.6 bushels per year. ECY will increase at a lower rate than previously found for non-irrigated production.

We also examined soybeans in Boyd County, as shown in Figure 4. The correlation between non-irrigated yields and blended yields was found to be .999, whereas the correlation between irrigated and blended yields was found to be -0.111. The ECY for irrigated producers dropped from 54.5 bpa to 44.8 bpa under blending, approximately an 18% decrease. Non-irrigated ECY also dropped from 45.9 bpa to the blended ECY of 44.8 bpa. Impacts in Boyd County under Soybeans are similar in direction but different in magnitude to those found in Washington County Corn.



The irrigator selecting an area-level product in 2025 in a blended county results in a lower risk transfer due to the reduction in ECY under yield blending. Understanding such changes can allow the producer to strategically engage with area-based coverage programs. For example, an irrigated producer selecting either SCO and/or ECO in a blended county may need to adjust their risk management strategy, as irrigated acres may be paid during a drought year, when such a payment would be unnecessary for such an operation, or either not paid or not paid as much during circumstances found in 1993 when there was a wet spring and, in certain areas, an early frost.

Overall, it is striking that the RMA has chosen to blend irrigated and non-irrigated practices in some counties while maintaining individual yields for others. We were unable to identify any documentation explaining the change or announcing the change itself. While the change to a blended yield may appear simple, it has the potential to be costly in the long term. Our analysis suggests that the irrigated historical yield data was simply replaced with a slightly modified non-irrigated yield dataset, a result suggesting that no blending took place. Counties with one ECY between practices also have a different reference yield in the MPCI rate database. The RMA appears to be saying different things depending on the policy.

The fundamental idea of insurance is to facilitate the effective transfer of risk, and as such, area-based policies and coverage options must be able to accurately reflect the circumstances for their area's producers. Therefore, an accurate ECY and yields used to create the ECY are critical when considering the effectiveness of the area-based policy for an individual farm to purchase. The RMA started (see the first years of SCO, for example) with both an irrigated and non-irrigated historical yield series and ECY. In 2021, a few counties changed to a blended yield. We are concerned with further eroding of the accuracy of county yield predictions in relation to farming practices. The use of blended yields in these counties runs the risk of complicating participation in these policies for producers, as well as creating additional uncertainty for the sellers of these policies.

For crop insurance to be efficient and effective, policy must continue to improve linkages with producer practices. The lower ECY and under the blended yield when compared to the irrigated expected yield is particularly concerning as the policy does not reflect what irrigators experience. We believe that the RMA should provide documentation of the criteria used for deciding when a given county is subject to blending, the data informing the calculation of the county yield, and the methods used to calculate yield trends. This lack of transparency brings additional uncertainty and reduces the effectiveness of the product and crop insurance overall. While issues in SCO/ECO ECY persist, discussions regarding the upcoming Farm Bill have identified the possibility of a further increase in SCO premium subsidies and an increase in coverage over the existing 86%. Instead of solely increasing premium subsidies and/or coverage, there should be an effort to ensure that policies better reflect producer practices and additional clarity to how county yields are determined as doing so would improve policy efficiency and effectiveness.

Further Information:

On crop insurance at a glance:
https://www.ers.usda.gov/topics/farm-practices-management/risk-management/crop-insurance-at-a-glance/

On how SCO works:
https://legacy.rma.usda.gov/news/currentissues/sco/ .

On how ECO works:
https://www.rma.usda.gov/about-crop-insurance/fact-sheets/enhanced-coverage-option .

On how Revenue Protection (RP) works:
https://www.rma.usda.gov/revenue-protection

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