

# INTEGRATED FARM REVENUE PROGRAM: OVERVIEW WITH A FOCUS ON SOYBEAN

Carl Zulauf, Agricultural Economist, Ohio State University

February 2007

## Background, Rationale, and Concepts

Farming is inherently risky. Variations in prices and yields can cause changes in revenue that are difficult for farmers to manage. The desire by the general public to help farmers manage this risk is underscored by the growth in spending for the Federal crop insurance program from almost nothing 30 years ago to over \$2 annually during Fiscal Years 2001-2005.

However, over these same five years, the Federal Government also spent on average an additional \$1.8 billion/year on *ad hoc* disaster assistance. The existence and magnitude of this assistance in recent years suggests the current farm safety net is not effective at helping farmers manage risk.

Effectiveness of the farm safety net can be improved by recognizing that farmers face two kinds of revenue risk. One occurs at the market level, such as widespread drought and drops in prices. The other occurs at the individual farmer level, for example localized frost. These two types of risks require different programs. Moreover, these two programs need to be integrated to maximize their effectiveness and to use public dollars efficiently. In short, a two tier, but integrated farm safety net is needed.

The first safety net tier is a national revenue deficiency program. It addresses the risk that gross revenue (yield times price) can decline for all farms due to lower prices or widespread yield losses. It would replace current price-based such as loan deficiency and counter-cyclical programs. It would not affect direct payments or conservation payments.

The national revenue deficiency program provides a per acre payment to all farmers who plant a specific crop equal to the difference between the national average revenue projected prior to planting and the national average revenue received at harvest. This payment fills in a hole in the current safety net because it covers shortfalls in both price and yield. In contrast, loan deficiency payments do not occur when yields are low. The national revenue deficiency payment also would be made shortly after harvest, thus providing timely assistance to farmers.

The revenue target will change each year as market conditions change. While it is unlikely this program is "green box" under current WTO rules, it is clear that it would help satisfy desires for greater market orientation in U.S. farm policy.

The second farm safety net tier is a gross revenue insurance product that addresses the need that gross revenue can decline more on an individual farm than for the market as a whole. This insurance program is similar to current revenue insurance products, but it would be integrated with the national revenue deficiency payment.

Integration will allow insurance companies to offer higher levels of coverage at a lower cost for individual farm level revenue insurance. The reason is that the risk of widespread national losses is now covered by the national revenue deficiency program. In contrast, no integration currently exists between commodity support and insurance programs.

Last, the economic need for *ad hoc* disaster assistance is reduced by providing timely national payments, by protecting both yield and price, and by reducing the individual farm level insurance premiums.

## Operation of Integrated Farm Revenue Program

Mechanics of the national revenue deficiency program are illustrated at right using 2004 data for soybean. In 2004, revenue realized at harvest was less than the revenue target established before planting as a 2.1 bushel increase in yield was more than offset by a \$1.46 per bushel decline in price. The average national revenue deficiency equaled \$46/acre. [The insurance prices are currently calculated by the Risk Management Agency. They equal the average price of the November soybean futures contract during February and October.]

The national revenue deficiency payment compensates a farmer for the market risk that occurs between planting and harvest. To avoid double payment for this market risk, a farmer's national revenue deficiency payment is subtracted from his or her individual revenue insurance payment. Two situations are used to illustrate how this integration would occur. In situation 1, the farmer's individual

### Example of Average National Revenue Deficiency Payment: Soybean 2004

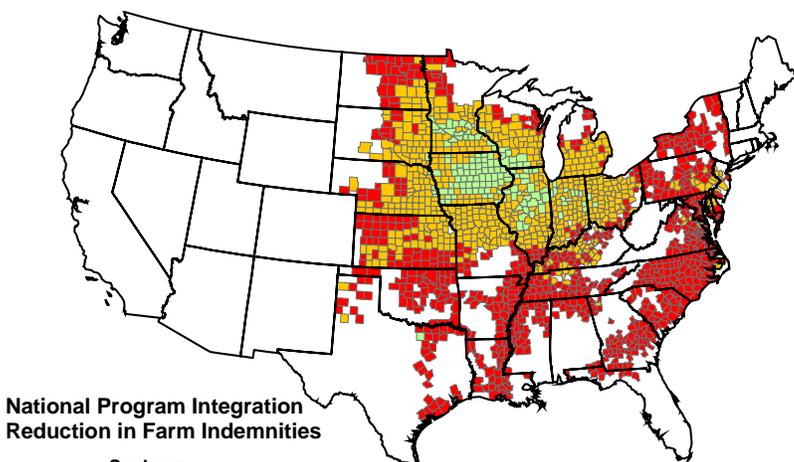
USDA Expected U.S. Yield:	39.3 bushels/acre
Plant Insurance Price:	\$6.72/bushel.
Expected or Target U.S. Revenue:	\$264/acre
Realized U.S. Yield (October):	41.4 bushels/acre
Harvest Insurance Price:	\$5.26/bushel
Realized U.S. Revenue:	\$218/acre

**REVENUE DEFICIENCY PAYMENT = \$46/acre (\$264-218)**

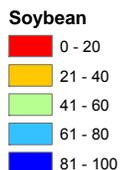
loss is less than the national revenue deficiency payment. This farmer receives no payment from his or her individual revenue insurance. In situation 2, the farmer receives a payment from individual revenue insurance because the farmer's loss exceeds the national revenue deficiency payment. The national revenue deficiency payment plus individual insurance payment equals the farmer's revenue loss at the coverage level he or she selected. Thus, the national revenue deficiency program works in concert with the farmer's selected individual revenue insurance.

### Analysis of Cost and Performance

The map below presents results from an analysis of the potential reduction in individual crop insurance premiums that results from integrating the national revenue deficiency payment into the current RA insurance product without the harvest price option. Ag Risk Management, LLC



National Program Integration  
Reduction in Farm Indemnities



**On average for U.S. soybean producers, a 29% reduction occurred in individual revenue insurance premiums at 75% coverage level, given 90% coverage level of national revenue deficiency**

### Examples to Illustrate Integration of National Revenue Deficiency Payment with Individual Farm Revenue Insurance: Soybean 2004

Farmer's Expected Yield:	39.3 bu./acre	
Plant Insurance Price:	\$6.72/bushel	
Farmer Expected Revenue:	\$264/acre	
Farmer Selected Insurance Coverage Level	75%	
Farmer's National Revenue Deficiency Payment:	\$46/acre	
	<u>Situation 1</u>	<u>Situation 2</u>
Farmer's Realized Yield:	32 bushels	26 bushels
Harvest Insurance Price:	\$5.26/bushel	\$5.26/bushel
Farmer's Realized Revenue:	\$168/acre	\$137/acre
<b>FARMER INSURANCE PAYMENT:</b>	<b>\$0/acre</b>	<b>\$15/acre</b>
Calculation - situation 1:	(\$264*0.75) - \$168 - \$46 = -\$16 (no payment)	
Calculation, Situation 2:	(\$264*0.75) - \$137 - \$46 = \$15	

conducted the analysis. On average for the U.S., integration was estimated to reduce premiums at the 75% coverage level by 44% compared with the current RA contract. The amount of reduction varies by region. Insurance premiums decline the most in the core areas of U.S. corn production. The reductions are smaller in areas further from the core regions. This pattern emerges because revenue variation at the national level more closely follows revenue variations in core production area.

Assuming coverage levels of 90% for the national revenue deficiency program and 75% for individual revenue insurance, cost of the Integrated Farm Revenue Program is estimated to be \$182 million/year more than the current set of crop support and revenue insurance programs. Crops included in this analysis are corn, cotton, rice, sorghum, soybean, and wheat. For additional details, see the box that follows.

### Average Annual Cost of Integrated Farm Revenue Program, 2008-2012

National Revenue Deficiency Program (90% coverage assumed)	\$4.494 billion/year
▶ Minus baseline cost of loan deficiency and counter-cyclical payments	-\$2.748 billion/year
▶ Savings from integration with crop insurance (75% coverage for individual insurance)	-\$1.564 billion/year
⇒ TOTAL NET COST OVER BASELINE	\$182 million/year

*To summarize, no policy is perfect, but compared with current policy, an Integrated Farm Revenue Program would*

- ▶ Provide a stronger, more contemporary foundation for farm policy in the 21st century,
- ▶ Strengthen the economic foundation under the crop insurance program,
- ▶ Reduce holes in the current safety net by including yield as well as price in all program instruments,
- ▶ Lower crop insurance premiums, allowing farmers to buy higher coverage at their current spending level,
- ▶ Create a more market oriented policy that the strengthens international competitiveness of U.S. farmers, and
- ▶ Lessen the economic need for ad hoc disaster assistance.

For additional information on the Integrated Farm Revenue Program, see Dr. Zulauf's written Congressional testimony at <http://aede.osu.edu/people/publications.php?user=zulauf.1>. For additional information on its cost, see AgRisk Management, LLC. "Analysis and Cost Projections of the Integrated Farm Revenue Program." Report for American Farmland Trust. 2/23/2007.