

Managing Risks

in California Specialty Crop Production



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<http://california.erightrisk.com>



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What is RISK?

- **RISK:** The effect of uncertainty on your objectives:
 - Current profit level
 - Financial situation (equity position)
 - Satisfaction and well-being



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Sources of Risk in Agriculture - *Ag Risk 5*

1. Marketing and Price Risk
2. Production Risk
3. Institutional Risk
4. Human Risk
5. Financial Risk



Strategies for Managing Risk

1. Avoid it
2. Reduce it
 - a) Reduce the probability it will happen
 - b) Reduce the impact if it does happen
3. Transfer it outside the business
 - a) Insurance
 - b) Contracting
4. Build your internal capacity to bear
 - a) Increase reserves
 - b) Maintain flexibility
5. Accept it

Origin of Word RISK

- RISICARE

–Italian word

–“TO DARE”

Risk Tradeoffs

Profits are
the returns for
taking risks



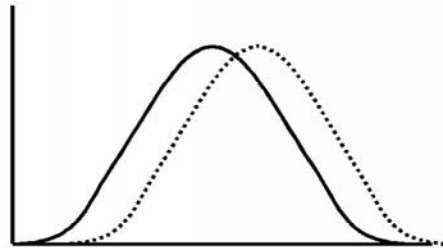
- Upside: Greater risk taking usually leads to greater wealth
- Downside: Losses from risk taking can be devastating
- Managing risks are a matter of evaluating tradeoffs.
- How much risk and how much stress are you willing to endure to potentially achieve higher returns?

Strategy Impacts

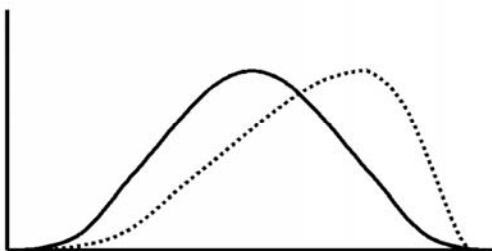
Panel 1: Same Mean, Less Dispersion



Panel 2: Same Dispersion, Higher Mean



Panel 3: Skewing the distribution



Panel 4: Truncating the Distribution



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Insurance Plans Available in CALIFORNIA			
Insurable Crops	Insured Acres	Total Acres	Percent Insured
Alfalfa Seed	11,795	36,280	33%
Almonds	721,275	860,000	84%
Apples	5,562	15,200	37%
Avocados	36,130	55,261	65%
Barley	38,635	95,000	41%
Blueberries	3,771	4,542	83%
Cherries	29,063	40,414	72%
Citrus - 8 types of fruit	229,451	270,000	85%
Corn	184,830	430,000	43%
Cotton & ELS Cotton	309,372	315,000	98%
Beans (Dry)	25,972	47,500	55%
Figs	4,076	7,351	55%
Forage Production	144,193	930,000	16%
Grapes (Table)	81,427	95,000	86%
Grapes (Wine)	498,428	570,000	87%
Grain Sorghum	3,328	4,570	73%
Mint	1,641	2,000	82%
Oats	3,624	10,000	36%
Olives	25,557	42,779	60%
Onions	19,570	43,900	45%
Pears	8,455	11,600	73%
Pecans	1,370	3,600	38%
Pistachios	90,097	203,000	44%
Potatoes	23,680	33,500	71%
Prunes	45,972	50,000	92%
Rice	478,856	495,000	97%
Rice (Cultivated Wild)	12,444	13,000	96%
Safflower	35,268	55,000	64%
Stonefruit (Includes Plums)	70,125	102,073	69%
Strawberries	26	41,500	1%
Sugar Beets	4,454	24,500	18%
Tomatoes (Fresh)	11,313	28,000	40%
Tomatoes (Processing)	278,058	288,000	97%
Walnuts	148,497	290,000	51%
Wheat	271,829	585,000	46%
Dollar Liability Program		Total Dollar Liability	
Adjusted Gross Revenue			\$35,427,458
Apiculture (Rainfall Index)			\$28,811,523
Forage Seeding			\$2,288,715
Livestock Gross Margin (LGM) Dairy			\$58,023,180
Livestock Risk Protection (LRP) Feeder Cattle and Lamb			\$11,964,519
Nursery			\$140,832,241
Pasture, Rangeland, Forage (Rainfall Index)			\$41,805,195
Raisins			\$198,817,340

Crop Pilot Programs	
Program	County Availability
Adjusted Gross Revenue	Fresno, Kern, Riverside, San Diego, San Joaquin, San Luis Obispo, Tulare, and Ventura Counties
Apiculture (Rainfall Index)	All Counties
Avocados	Orange, Riverside, San Diego, San Luis Obispo, Santa Barbara, and Ventura Counties
Cherries	Butte, Contra Costa, Fresno, Kern, Kings, Madera, Merced, Placer, Sacramento, San Benito, Santa Clara, San Joaquin, Stanislaus, Sutter, Tulare, and Yuba Counties
Forage (Alfalfa) Seed	Kings and Fresno Counties
Strawberries	Fresno, Merced, Monterey, Santa Barbara, Santa Cruz, and Ventura Counties
Citrus Dollar (Navels)	Fresno, Kern, Madera, and Tulare Counties
PRF (Rainfall Index)	All Counties
Olives	Butte, Colusa, Fresno, Glenn, Tehama, Kern, Madera, San Joaquin, Shasta, Stanislaus, Sutter, Tulare, Yolo
Pistachios	Alameda, Butte, Colusa, Contra Costa, Fresno, Glenn, Kern, Kings, Madera, Merced, Riverside, San Benito, San Bernardino, San Joaquin, San Luis Obispo, Santa Barbara, Stanislaus, Sutter, Tehama, Tulare, Yolo, Yuba Counties



<http://www.rma.usda.gov>

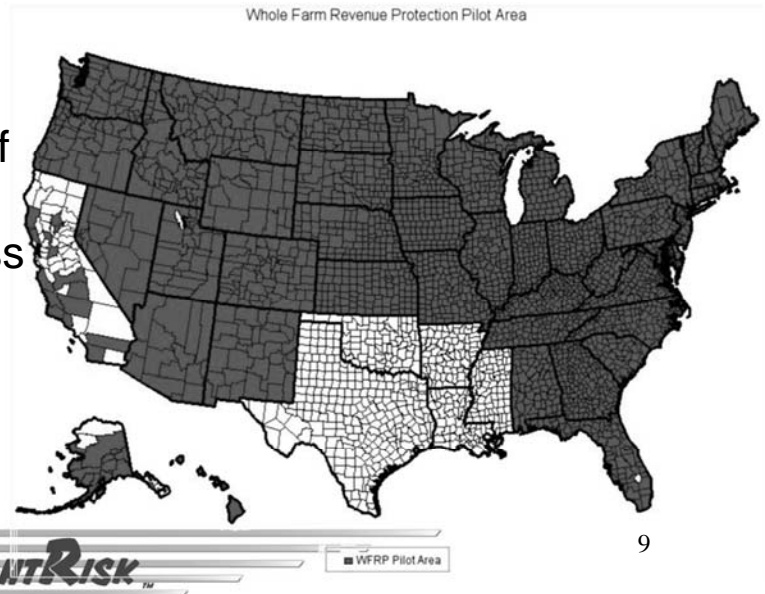


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Whole-Farm Revenue Protection

- A whole-farm insurance product that provides producers with risk management protection for all eligible commodities on the farm under **one insurance policy**

- WFRP is a combination of Adjusted Gross Revenue (AGR) and Adjusted Gross Revenue-Lite (AGR-Lite) policies



Whole-Farm Revenue Protection cont.

- Coverage is based on:
 - The operation's whole-farm **historic average revenue and expenses** using information from five consecutive tax years before the insurance year (adjusted according to the WFRP policy and procedures)
- An indemnity payment occurs when:
 - *Allowable Revenue* during the insurance year **falls below** the *Insured Revenue* (the amount of revenue the farm operation is expected to earn during the insurance year multiplied by the coverage level elected)

Noninsured Crop Disaster Assistance Program (NAP): ELIGIBLE crops

- ELIGIBLE CROPS:
 - Any commercial agricultural crop (excluding livestock and their by-products), commodity, or acreage of a commodity **grown for food or fiber**, and commercial or industrial crops for which CAT or additional coverage is not available
 - **Biomass crops** or feedstock crop grown for purpose of producing bio-based product
- CROPS **NOT** ELIGIBLE:
 - Where CAT or additional level of insurance coverage **IS** available
 - Where Group Risk Protection insurance **IS** available



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Noninsured Crop Disaster Assistance Program (NAP): Coverage Summary

- NAP available for 2015 through 2018 crop years:
 - **CAT-level** coverage 50/55, and
 - **Buy-up** coverage
 - 50, 55, 60 or 65 percent coverage at 100 percent of the established market price
- Protects against eligible causes of loss during the coverage period before or during harvest: drought, hail, excessive moisture, freeze, tornado, hurricane, excessive wind, insufficient chill hours (limited), earthquake, flood, volcanic eruption
- Market price established by FSA as an **average market price** for the eligible crop



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Noninsured Crop Disaster Assistance Program (NAP): Coverage Updates

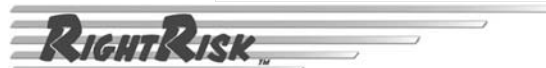
- Organic Crop Option
 - May receive payment based on an organic price if
 - RMA has established a separate organic price in the State
 - Producers elect the organic option on CCC-471
 - Acreage is certified organic or exempt from certification according to the National Organic Program regulations
 - A copy of organic system plan provided to FSA
- Direct Market Price Option
 - May receive payment based on an direct market price if
 - Buy-up coverage is elected with direct market price option
 - Sufficient data is available for FSA to approve separate average market prices within a State



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Noninsured Crop Disaster Assistance Program (NAP): BUY-UP Coverage cont.

- **Premium calculation:**
 - Eligible acres
 - X Producer share
 - X Approved yield
 - X Coverage level
 - X 100% of market price
 - X 5.25 percent
- ❖ *NAP fees or buy-up premiums are reduced by 50 percent for:*
 - *Beginning farmers (BF)*
 - *Limited resource farmers (LR)*
 - *Socially disadvantaged farmers (SDA)*



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Payment Limits

- **NO** person or legal entity, may receive directly or indirectly more than:
 - \$125,000 total in payments under LFP, LIP, and ELAP combined
 - \$125,000 total in payments under NAP
 - \$125,000 total in payments under TAP
- An individual or legal entity is **ineligible** for payments where average adjusted gross income (AGI) exceeds \$900,000
- A producer may receive benefits under a buy-up policy for crop insurance and LFP/LIP/ELAP/NAP/TAP, but combined benefits **may not exceed the loss**

Production Risk

Uncontrollable events such as weather, pests or disease make yields or inputs unpredictable.

What are Your Management Controls?

- Selecting low production risk enterprises
- Using low-risk production practices
- Crop insurance
- Diversification
- Maintaining flexibility and extra capacity
- Utilizing land over a wide spread area



Marketing and Price Risk

Prices of inputs or outputs change after you commit to a plan of action.

What are Your Management Controls?

- Forward pricing or contracting
- Diversified market timing
- Diversified production
- Selecting low price risk enterprises
- Obtaining market outlook reports (information)
- Negotiated lease agreements
- Crop Insurance

Institutional Risk

Government or other institutional rules, regulations and policies effect profitability through costs or returns.

What are Your Management Controls?

- Keeping informed of new regulations and interpretations of the law
- Maintaining a liability insurance program



Human Risk

The character, health or behavior of the people involved in your operation introduces risk.

What are Your Management Controls?

- Maintain a good employee benefit package and relationship plan
- A plan to deal with the possible loss of a key employee(s)
- A backup management plan
- Maintaining good health and life insurance plans
- Establishing and maintain estate plans



Financial Risk

Financial risk is the extra risk that is attached to being leveraged. It's the added variability that results from financial obligations associated with debt financing.

What are Your Management Controls?

- Maintaining a financial cushion
- Practicing solid land leasing strategies
- Incorporating all or part of your operation
- Maintaining up-to-date financial information

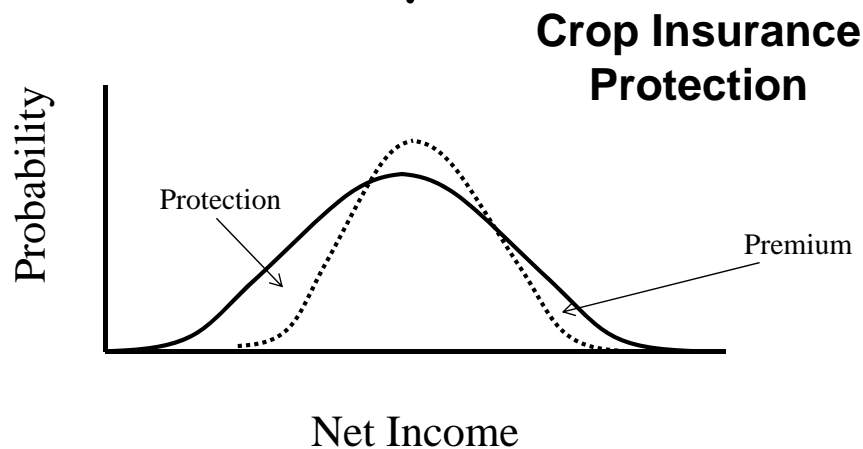


Personal Perspectives on Risk

- Generational differences
- Gender differences
- Life stage/family differences
- Life experiences

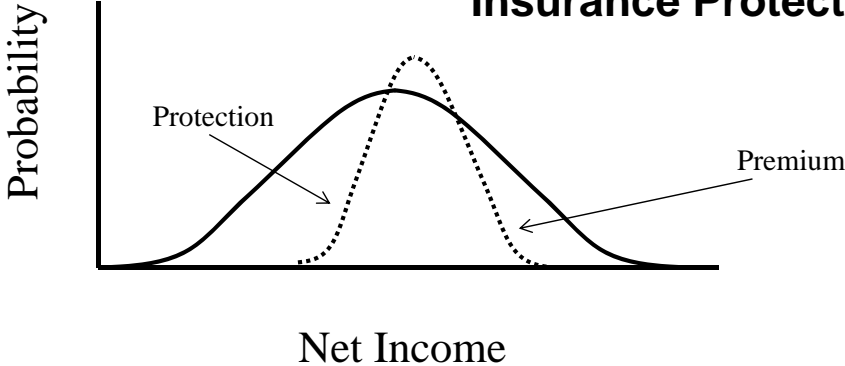
These are dynamic and change over time.

How much risk is right for you?



How much risk is right for you?

MORE Crop Insurance Protection



Risk Tools

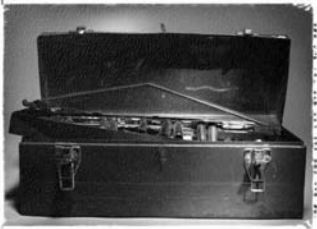
evaluating risk management strategies

Risk Navigator
STRATEGIC RISK MANAGEMENT

- Home
- About SRMP
- Textbook
- Toolbox
- Example Farm
- Ag Survivor
- Instructors
- Conferences
- Sponsors

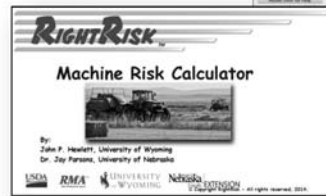
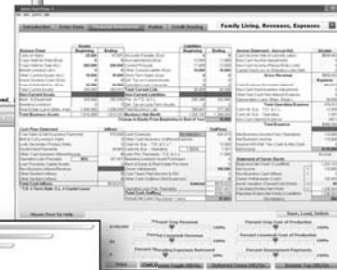
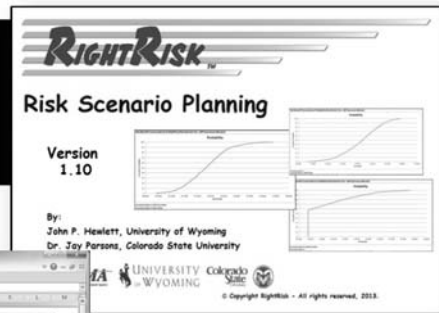
RightRisk
www.RightRisk.org

RMA



Tools to Evaluate Alternatives

- Risk Scenario Planner
relatively minor changes
- Enterprise Risk Analyzer
larger changes
- RD Financial
Whole Farm Budget-substantial changes
- Machine Risk Analyzer
estimating machinery and field operations costs



<http://RightRisk.org/tools>

QUESTIONS?

University of California
Agriculture and Natural Resources

Thank You!

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The Enterprise Risk Analyzer



How to Evaluate Crop Alternatives and Risk?

John P. Hewlett, University of Wyoming

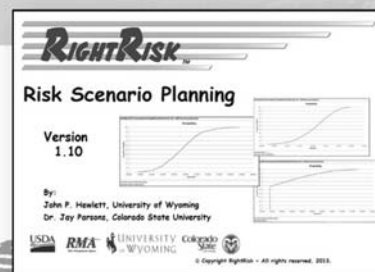
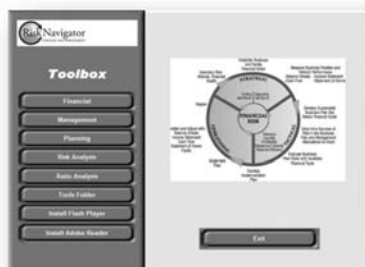
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Evaluating Alternatives



Enterprise Risk Analyzer



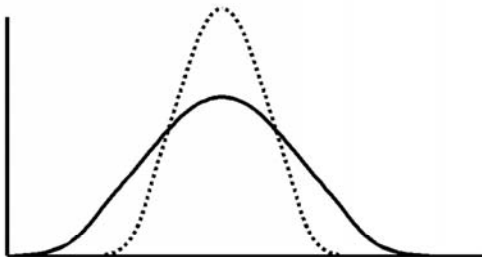
	A	B	C	D	E	F
1						
2						
3			Cow-Calf	Native Hay	Oat Hay	Alfalfa Establishment
4		FARM REVENUE				
5		TOTAL FARM INCOME - CASH	121,759.00	12,380.00	2,802.00	2,306.00
6		TOTAL NON-CASH INCOME ADJUSTMENTS				
7		GROSS FARM REVENUE	121,759.00	12,380.00	2,802.00	2,306.00
8						25,040.00
9		FARM EXPENSES				
10		FARM EXPENSES - CASH	86,843.00	6,557.00	1,756.00	2,297.00
11		FARM EXPENSES - NON-CASH EXPENSE ADJUSTMENTS	98,550.00	11,245.00	2,709.00	2,536.00
12		GROSS FARM EXPENSES	185,393.00	17,802.00	4,465.00	4,833.00
13						
14		NET FARM INCOME FROM OPERATIONS	(63,634.00)	(5,422.00)	(1,663.00)	(2,527.00)
15						
16		Break-Even PRICE Analysis				
17						
18		YIELD PER ENTERPRISE UNIT	Cow-Calf	Native Hay	Oat Hay	Alfalfa Establishment
19		<i>Maximum</i>	400	1.75	4	4
20		Most Likely	373.97	1.5	3	2.54
21		<i>Minimum</i>	350	1	1.5	1.5
22						
23		BREAK-EVEN PRICE - CASH EXPENSES				
24		<i>Minimum</i>	0.59	32.30	33.77	44.17
25		Most Likely	0.64	37.68	45.03	69.56
26		<i>Maximum</i>	0.68	56.53	90.05	117.79
27						
28		BREAK-EVEN PRICE - GROSS EXPENSES				
29		<i>Minimum</i>	1.27	87.69	85.87	92.94
30		Most Likely	1.36	102.31	114.49	146.37
31		<i>Maximum</i>	1.45	153.47	228.97	247.85
32						
33		Probability Analysis (click button at right)	<input type="button" value="Graph"/>	<input type="button" value="Graph"/>	<input type="button" value="Graph"/>	<input type="button" value="Graph"/>
34						



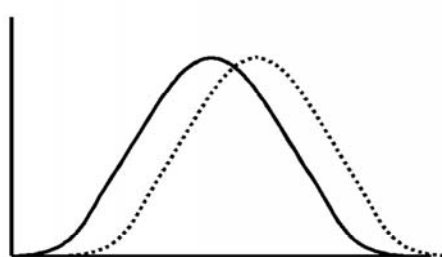
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Strategy Impacts

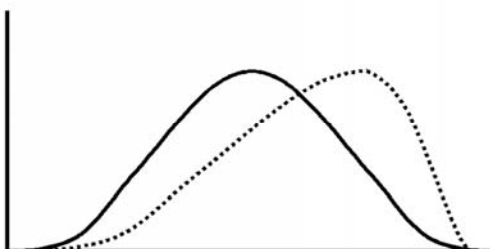
Panel 1: Same Mean, Less Dispersion



Panel 2: Same Dispersion, Higher Mean



Panel 3: Skewing the distribution



Panel 4: Truncating the Distribution



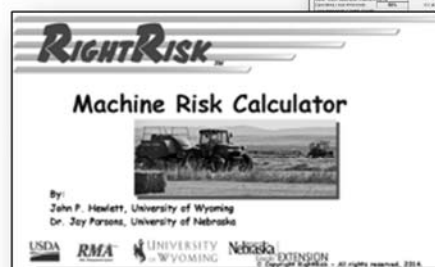
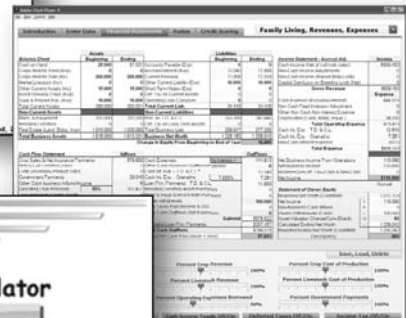
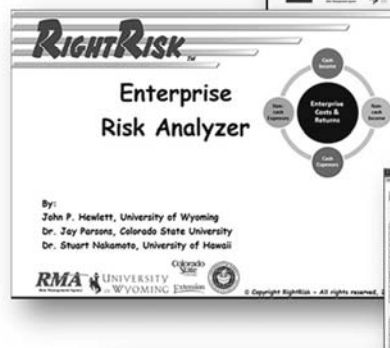
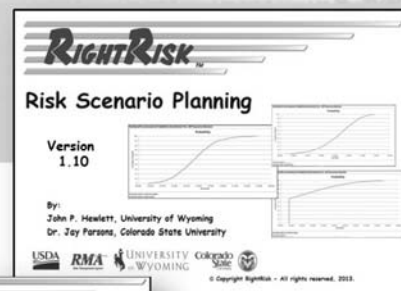
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Risk Navigator Tool Box

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Tools to Evaluate Alternatives

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relatively minor changes
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Whole Farm Budget, substantial changes
- Machine Risk Analyzer
estimating machinery and field operation costs



<http://RightRisk.org/tools>
<http://california.ernightrisk.com>

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<http://RightRisk.org> > Courses

Risk Management Profiles



RISK MANAGEMENT PROFILES

RIGHTRISK

VI-PRF pilot insurance minimizes feed risk for Z-F

Early fall 2010 on the Z-F Ranch found owners Bob and Betsy Zomer assessing risk management strategies for their cow-calf and yearling operation. The Zomers are situated on 12,000 acres of pasture and 200 acres of native hay in Fremont County. Both husband and wife were concerned about the coming production year. This year's late summer and early fall had been dry, and they were worried it would carry over into next year.

The Zomers looked at several options for addressing their production risks. They could:

1. Buy alfalfa hay to supplement native hay production. They knew this option might become expensive, though, with hay prices high and up-front cost tying up operating capital.
2. Rent additional pasture. Unfortunately, this option would be difficult to achieve and expensive due to the lack of locally available pasture. Plus, the Zomers would prefer not to travel long distances to their cattle.
3. Send the yearlings to a custom feed yard or sell them early. With high feed prices, this may or may not be economically viable.
4. Use the new Vegetative Index Pasture, Rangeland, Forage (VI-PRF) insurance. Bob recently became aware of a local extension meeting.
5. Insure against drought using Non-insured Crop Disaster Assistance Program (NAP) coverage.

Like many producers, the Zomers decided on a combination of available options. They chose to utilize VI-PRF insurance for 3,500 acres from April 1 to June 30; 5,500 acres from July 1 to September 30; and 200 acres of hay land from June 1 to August 30. They also chose to budget \$20,000 to purchase 200

Premium/acre	Indemnity/acre	Total indemnity	Total cost/acre
\$0.28	\$0.00	\$0	\$0.80
\$0.58	\$6.51	\$35,805	\$3,190
\$9.15	\$57.27	\$11,454	\$1,830
	Total	\$47,259	\$6,000

With the second method, calculate the carrying capacity of 19.48 acres per AU (or a normal carrying capacity of 462 AUs) multiplied by 30 days (\$13,860) multiplied by the daily feed cost (\$40.04/30 = \$1,334) multiplied by 60 percent to find a total payment of \$11,095.54. Therefore, the first calculation provides the smaller amount.

If the Zomers had utilized NAP coverage in 2010, they would have received two added benefits.

<http://RightRisk.org> > RM Profiles

VOLUME 2, ISSUE 2
RightRisk
 RIGHTRISK NEWS
 FEBRUARY 2014

DATES TO REMEMBER

- March 15, 2014: Crop insurance sales closing and cancellation dates for spring-planted crops. For more information see <http://www.rma.usda.gov>
- April 1, 2014: Nationalized Crop Disaster Assistance Program (NAP) application deadline for spring-planted crops and all other crops. For more information see <http://www.fsa.usda.gov>

AGR-Lite Protects Against Low Revenues

Adjusted Gross Revenue-Lite (AGR-Lite) is a streamlined whole-farm revenue protection package. The plan protects against low revenues due to losses attributable to unavoidable natural disasters such as fire, adverse weather, and market fluctuations. Most farm-raised crops, animals, and animal products are eligible for protection.

AGR-Lite provides insurance coverage for multiple agricultural commodities in one insurance product and establishes revenue as a common denominator for the insurance of all agricultural commodities. AGR-Lite can stand alone or be used in conjunction with other Federal crop insurance plans. However, the maximum liability of coverage is \$1 million.

To be eligible for AGR-Lite coverage, a producer must be a U.S. citizen or resident; file a calendar year or fiscal year farm tax return, and have appropriate IRS tax forms available for the previous 5 years; and consecutive years under the same tax entity (for exceptions, contact a crop insurance agent). Also, consecutive years under the same tax entity for revenue cannot exceed 50 percent of total revenues and consecutive years under the same tax entity for revenue cannot exceed 83.33 percent of total revenues to be eligible for AGR-Lite coverage. A new policy must be purchased by March 15th for the year in which coverage is to first occur. After the first year, the policy is automatically renewed but policy changes and cancellations must occur by January 31st. Claims are settled after taxes are filed for the insurance year.

A producer, producing at least three commodities, shall select one of three levels of coverage – 65 percent, 75 percent, or 80 percent – and an associated payment percentage of either 75 percent or 90 percent. A producer, producing less than three commodities, can insure at 65-75, 65-90, 75-75, and 75-90 coverage levels and payment percentages. The government will pay a portion of the premium for the AGR-Lite policy that equals 48 percent, 55 percent, and 59 percent of the total premium for the coverage levels of 60 percent, 75 percent, and 65 percent, respectively.

Assume a producer had an approved AGR-Lite income of \$500,000 and wanted to insure revenues at the 80 percent coverage level at 90 percent payment rate. Further assume adjusted gross income minus out to be \$215,000.

Step 1: Calculate the loss inception point (approved AGR times the coverage level) => \$500,000 x 0.80 = \$400,000

Step 2: Calculate the loss of revenue (loss inception point less actual revenues) => \$400,000 - \$215,000 = \$185,000

Step 3: Calculate the indemnity due (loss revenue times payment percentage) => \$185,000 x 90% = \$166,500

AGR-Lite insurance can be purchased from private insurance agents. A list of crop insurance agents is available at a USDA Service Center or on the RMA web site: <http://www.rma.usda.gov/tools/agents/>

Also, more information about AGR-Lite is available at <http://RightRisk.org>.

AGR-Lite Levels of Insurance	
Coverage Level	Payment Percentage
65%	75%
75%	75%
80%	90%

The 80% coverage level is not available to those producing less than three commodities.

How Much Risk is Right for you?



RISK MANAGEMENT PROFILE

Juan and Suzanne were sitting in their kitchen one January afternoon getting information ready to take to their tax preparer. Check stubs, invoices, receipts, weigh tags from the local co-op, and sale bills were scattered across the table. Suzanne was frustrated with the mess and with the amount of information Juan kept in his head. They both knew they would have a better handle on their finances, keep their banker happier, and be better prepared for their tax preparer if they maintained good financial records throughout the year. To read more see: <http://RightRisk.org> > Resources > Risk Mgt Profiles



HIGHLIGHTED COURSE

The interactive AGR-Lite course was designed for producers at both ends of the crop insurance knowledge spectrum – whether they already use and are accustomed to crop insurance programs or they are new to the programs available and just beginning to determine their risk management needs. The course is interactive and has lessons at the end of each section to help participants apply what they have learned to their own situation. It also provides electronic tools to help producers assess how the program may fit with their operation.

The course is divided into six sections. The first two sections cover general risk management and an overview of the AGR-Lite program. The basic concepts of risk management for the overview of agricultural risk are discussed using real-life examples and situations. The overview of the AGR-Lite program includes a breakdown of individual farming livestock enterprises eligible for coverage under the program as well as other eligibility elements.

The third section discusses the application process for AGR-Lite. This includes the necessary information as well as determining the variables and adjustments that go into insuring a farm's adjusted gross revenue (the basis for the insurance coverage). The fourth section talks about steps a producer must take in the event of a loss. It is important to note losses under AGR-Lite coverage are determined on a year-to-year basis as opposed to when a loss occurs in conventional insurance.

The last two sections discuss document considerations as part of AGR-Lite and a whole farm example. It is important for producing AGR-Lite to keep accurate records in the event of a revenue loss. These include invoices, weight slips, and other pertaining to production.

For more information on the AGR-Lite course, see <http://RightRisk.org> > courses.



RightRisk

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RightRisk News is brought to you by the RightRisk Team

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<http://RightRisk.org/News>



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