

Risk Management Tools & Strategies

For California Specialty Crop Production

University of California
Agriculture and Natural Resources



John P. Hewlett, University of Wyoming

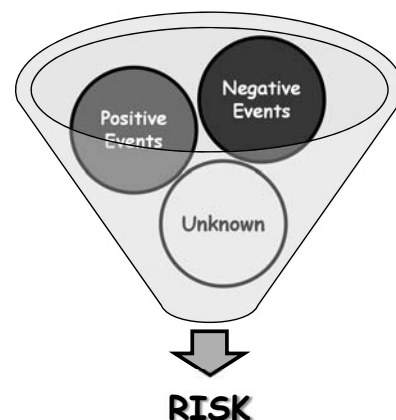
<http://california.erightrisk.com>

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What is RISK?

- **Certainty**- lack of doubt
- **Uncertainty**- doubt about future events
- **RISK**- potential variation in the outcome of future events



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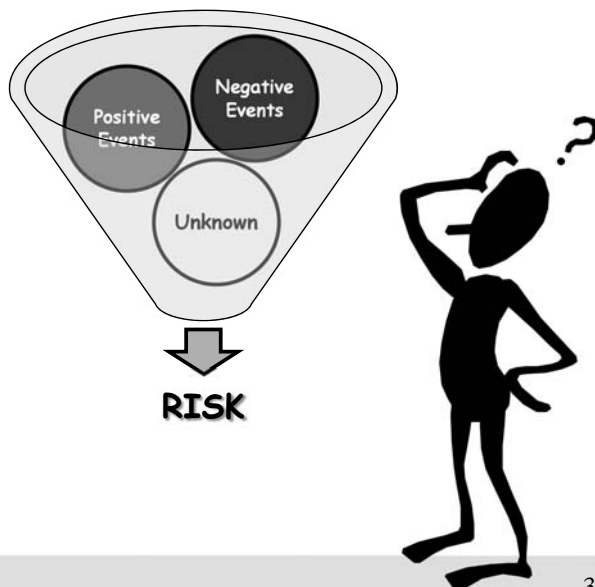
What is RISK?

- **Cost of Loss**

- Income
- Resources
- Productive capacity, etc.

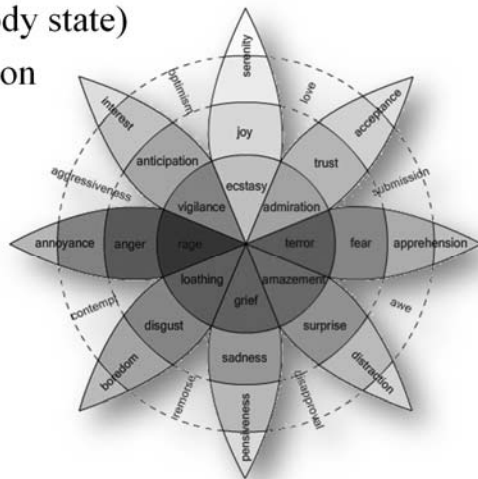
- **Cost of Uncertainty**

- Worry, doubt, fear, misallocation of resources, etc.
- With potential for gain or loss comes moral or ethical implications



HUMAN Dimension of Risk Management

- Emotions = physical state of our body as it responds to external stimuli
- Emotions are *separate* from our feelings
 - **Emotions**- result in us from our **actions** (body state)
 - **Feelings**- result in us from our **perspective** on our actions (consciousness)
- Emotions have been found by research to be *necessary* for decision making*



* MIT Technology Review, A. Damasio, 2014.

What is RISK?

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



Personal Perspectives on Risk

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

These are dynamic and change over time.



Profits are returns for taking risks



- **Upside:** Greater risk taking usually leads to greater wealth over time
- **Downside:** Losses from risk taking can potentially be devastating
- Managing risks are a matter of **evaluating tradeoffs**
- How much **risk** (uncertainty) are you willing to accept for **possible higher returns**?

Sources of Risk in Agriculture - *Ag Risk 5*

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



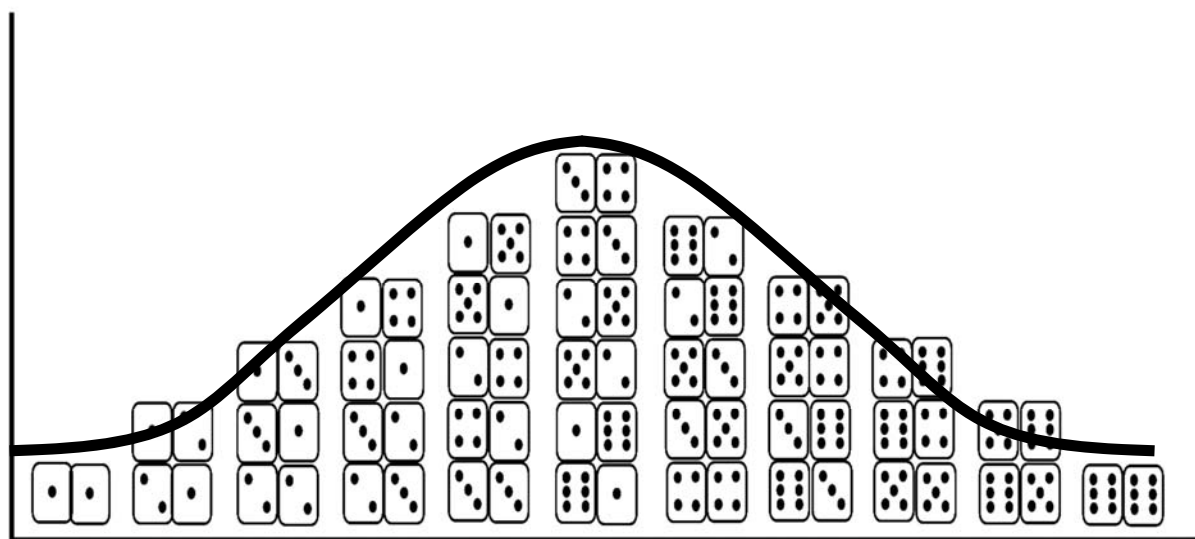
Strategies for Managing Risk

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. **Increase capacity to bare**
 - a) Increase reserves
 - b) Maintain flexibility
5. **Accept it**



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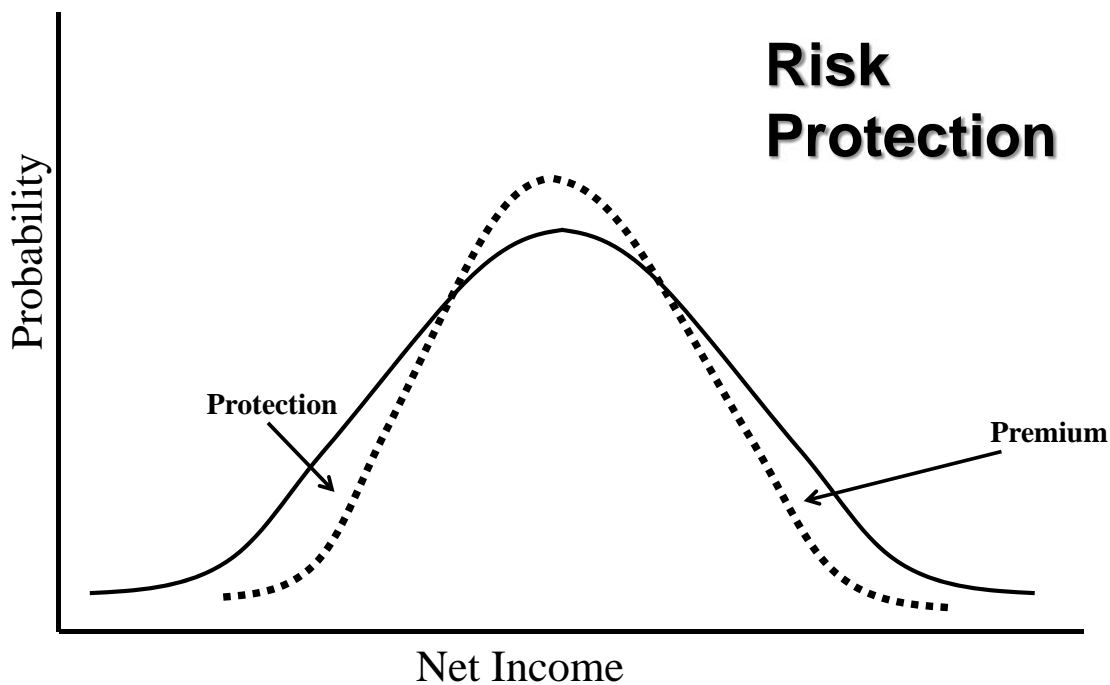
Probability



2 3 4 5 6 7 8 9 10 11 12

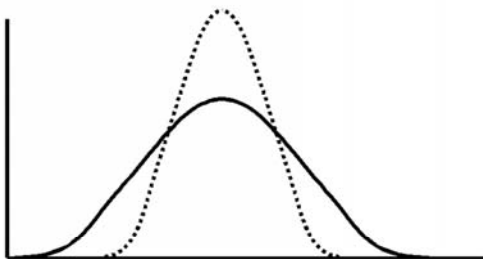
Dice Rolls

How much risk is right for you?

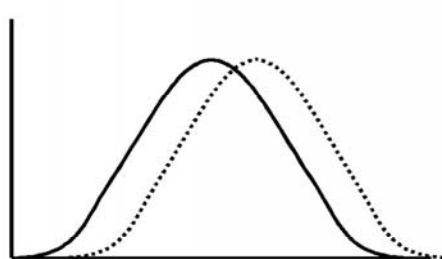


Strategy Impacts

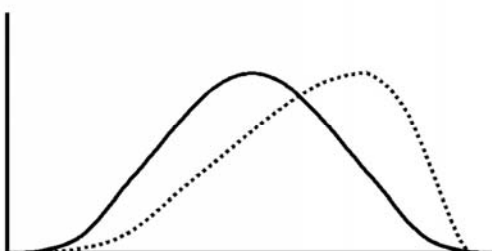
Panel 1: Same Mean, Less Dispersion



Panel 2: Same Dispersion, Higher Mean



Panel 3: Skewing the distribution



Panel 4: Truncating the Distribution



Risk Controls

Market Risk - Production Risk - Institutional/Legal Risk - Human Risk - Financial Risk

Market Risk

- risk associated with the uncertainty around markets and prices for inputs and outputs

- Livestock Prices**
 - USDA Agricultural Marketing Service: *Colorado Weekly Summary*
 - USDA Agricultural Marketing Service: *Montana Weekly Summary*
 - USDA Agricultural Marketing Service: *New Mexico Combined Wld Avg - Cattle (weekly)*
 - USDA Agricultural Marketing Service: *Washington Weekly Livestock Auction Summary*
 - USDA Agricultural Marketing Service: *Wyoming Weekly Summary*
 - USDA Agricultural Marketing Service: *Livestock and Seed*
 - USDA Agricultural Marketing Service: *ALL*
 - Beef Basis* - provides cattle producers with information and analytics to improve marketing decisions influenced by cattle basis risk.
- Grain Prices**
 - USDA Agricultural Marketing Service: *California Weekly Grain Report*
 - USDA Agricultural Marketing Service: *Montana Cash Grain Prices*
 - USDA Agricultural Marketing Service: *Utah Daily Grain Report*
 - USDA Agricultural Marketing Service: *Eastern New Mexico Grain Report*
 - USDA Agricultural Marketing Service: *Wyoming/Western Nebraska Elevator Grain Bids*
- Hay Prices**
 - USDA Agricultural Marketing Service: *California Weekly Hay Report*
 - USDA Agricultural Marketing Service: *Colorado Weekly Hay Report*
 - USDA Agricultural Marketing Service: *Idaho Weekly Hay Report*
 - USDA Agricultural Marketing Service: *Montana Weekly Hay Report*
 - USDA Agricultural Marketing Service: *New Mexico Weekly Hay Report*
 - USDA Agricultural Marketing Service: *Oregon Weekly Hay Report*
 - USDA Agricultural Marketing Service: *Utah Weekly Hay Market Report*
 - USDA AMS: *Washington-Oregon (Columbia Basin) Weekly Hay*
 - USDA AMS: *Wyoming, West Nebraska, and SW South Dakota Hay Report (weekly)*
 - USDA Agricultural Marketing Service: *Wyoming Weekly Summary*
- Lease Rates/Grazing Fees**
 - USDA AMS: *Wyoming, West Nebraska, and SW Dakota Grazing Fee Report*
 - USDA National Agricultural Statistics Service: *Cash Rents by County*
- Price Protection (Insurance)**
 - USDA Risk Management Agency: *Livestock Insurance background information*



<http://RightRisk.org/controls>

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	5,662	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	8,456	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			\$35,427,459
Apiculture (Rainfall Index)			\$29,811,523
Forage Seeding			\$2,289,715
Livestock Gross Margin (LGM) Dairy			\$58,023,160
Livestock Risk Protection (LRP) Feeder Cattle and Lamb			\$11,994,519
Nursery			\$140,832,241
Pasture, Rangeland, Forage (Rainfall Index)			\$41,805,195
Raisins			\$196,817,340

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 (Navel)	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

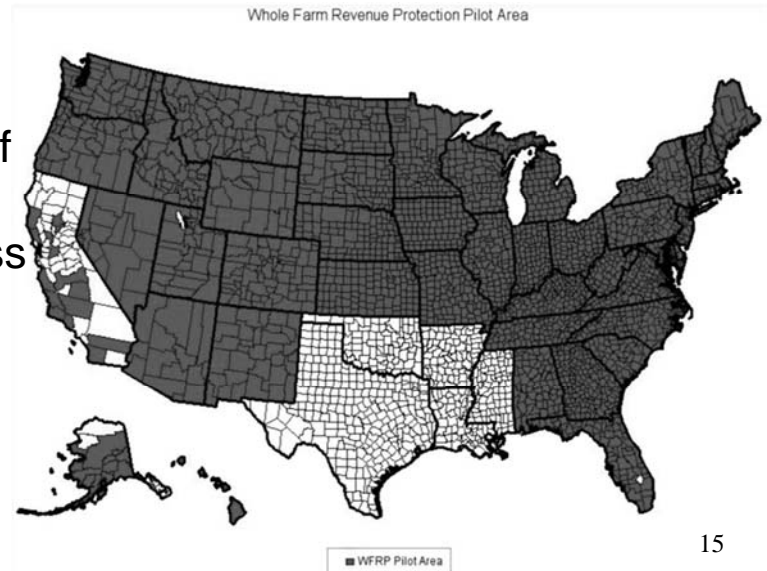


<http://www.rma.usda.gov>

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)

Whole-Farm Revenue Protection cont.

COMPARISON	WFRP	AGR-Lite	AGR
Liability Limit	\$8.5 Million	\$1 Million	\$6.5 Million
Coverage Level	50-85 in 5% increments	65, 75, 80*	65, 75, 80*
	3 Commodities for 80 and 85%	*3 Commodities	*3 Commodities
One Commodity	Not eligible for WFRP if only one commodity and that commodity has an MPCJ revenue product available.		No Restriction
Payment Rate	None	75, 90	75, 90
Animal or Animal Product Limit	35% of expected revenue or up to \$1 million (Max)	None	35% of Expected Income
Nursery and Greenhouse Limit	35% of expected revenue or up to \$1 million (Max)	None	None
Potato Requirement	Minimum of 2 Commodities (with calculation)	Minimum of 2 Commodities (with calculation)	Minimum of 2 Commodities (with calculation)
Replant Payments	Up to 20 percent of expected revenue for annual commodity with 20 acres or 20 percent of crop needing replant. Not allowed if also insured under MPCJ with replant provisions.	None	None
Other Federal Crop Insurance	Optional - MPCJ-buy up coverage level only for both WFRP and MPCJ. No CAT level MPCJ allowed.	Optional	MPCJ required if 50% of expected income from MPCJ crops
Market readiness amounts in insured revenue	Yes	No	No
Expanding operations	Average allowable historic revenue increased by 10% if you can prove expansion and approved by AIP, to allow for minor farm growth that might not trigger indexing.	No	No
Cancellation/Termination	Same as sales closing date for county. (2/28, 3/15)	31-Jan	31-Jan
Contract Change	31-Aug	31-Aug	31-Aug
Sales Closing Date	In Actuarial Documents-same as dates for spring crops for county: 2/28 and 3/15 depending on county	March 15 New Jan 31 Carryover	31-Jan
Rating Methodology	Same as AGR	Same as AGR	Rates revenue variability of individual commodities.



Whole-Farm Revenue Protection cont.

USDA United States Department of Agriculture
A Risk Management Agency Fact Sheet

Whole-Farm Revenue Protection for Federal Crop Insurance

November 2014

Whole-Farm Revenue Protection
Whole-Farm Revenue Protection (WFRP) provides a risk management safety net for all commodities on the farm under one insurance policy. This insurance plan is tailored for any farm with up to \$8.5 million in insured revenue, including farms with specialty or organic commodities (both crops and livestock), or those marketing to local, regional, farm-to-table, specialty, or direct markets.

Availability

Causes of Loss
WFRP provides protection against the loss of insured revenue due to an unavoidable natural cause of loss, that occurs during the insurance period and will also provide carryover loss coverage if you are insured the following year. See the policy for a list of covered causes of loss.

Important Dates
Sales Closing, Cancellation, & Termination Dates
County Specific: February 28 or March 15
Revised Farm Operation Report Dates
Calendar Year Files: July 15
Early Fiscal Year Files: July 15
Late Fiscal Year Files: Fiscal Year Begins
August or September: 30 days after start of fiscal year
October, November, or December: October 31
Contract Change Date: August 31
Talk to your crop insurance agent about the dates that apply for your county.

This fact sheet gives only a general overview of the crop insurance program and is not a complete policy. For further information and an evaluation of your risk management needs, contact a crop insurance agent.

Insurance Year
The insurance year is a calendar year if taxes are filed by calendar year, or a fiscal year if taxes are filed on a fiscal year.

Reporting Requirements
Revenue Losses - You must submit a notice of loss within 72 hours after discovery that revenue for the insurance year could be below the insured revenue. Inspections may be required for losses. You must have filed farm taxes for the insurance year before any claim can be made. You must make claims no later than 60 days after the date you submit farm tax forms to the Internal Revenue Service (IRS). Claim payments for a revenue loss under WFRP are paid within 30 days after the determination of a payment due as long as you see in compliance with the policy.

Coverage
WFRP protects your farm against the loss of farm revenue that you expect to earn or will get from:

- Commodities you produce during the insurance period, whether they are sold or not.
- Commodities you buy for resale during the insurance period, and
- All commodities on the farm except timber, forest, and forest products, and animals for sport, show, or pets.

The policy also provides replant coverage:

- For annual crops, except those covered by another policy;
- Equal to the cost of replanting up to a maximum of 20 percent of the expected revenue; and
- When 20 percent or 20 acres of the crop needs to be replanted.

The approved revenue amount is determined on your Farm Operation Report and is the lower of the expected revenue or your whole-farm historic average revenue. Coverage levels range from 50 percent to 85 percent. Catastrophic Risk Protection (CAT) coverage is not available. The number of commodities produced on the farm are counted using a calculation that determines:

- If the farm has the diversification needed to qualify for the 80 and 85 percent coverage levels (there is a 3 commodity requirement).

Eligibility
Eligibility for WFRP coverage requires you to:

- Be a U.S. citizen or resident.
- File either a Schedule F tax form or other farm tax form that can be converted to a Substitute Schedule F.
- Have 5 consecutive years of farm tax history (for the 2015 WFRP insurance year, farm tax records from 2009-2013 must be available).
- Produce at least 50 percent of your agricultural commodities in counties where WFRP is available and the balance in neighboring counties.
- Have no more than \$8.5 million in insured revenue, which is the farm revenue allowed to be insured under the policy multiplied by the coverage level you select (see table above).
- Have no more than 50 percent of total revenue from commodities purchased for resale.
- Have "top-up" coverage levels on any federal crop insurance plans you choose with the WFRP insurance plan.
- Meet the diversification requirements of the policy by having two or more commodities if a commodity revenue history insurance available; and
- Meet the diversification requirements of the policy by having two or more commodities if there are potatoes on the farm.

Information You Provide
There are certain documents you must provide to your crop insurance agent to get Whole-Farm Revenue Protection insurance. For the Whole-Farm History Report you must provide:

- 5 consecutive years of Schedule F or other farm tax forms (it must be possible to complete a Substitute Schedule F form if you filed farm tax forms other than Schedule F). For the 2015 insurance year, tax

Whole-Farm Revenue Protection



USDA FSA United States Department of Agriculture Farm Service Agency

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You are here: [FSA Home](#) / [Disaster Assistance Programs](#) / [Noninsured Crop Disaster Assistance Program \(NAP\)](#)

Disaster Assistance Programs

Noninsured Crop Disaster Assistance Program

Provides financial assistance to producers of noninsurable crops when low yields, loss of inventory or prevented planting occurs due to natural disasters.

Noninsured Crop Disaster Assistance Program (NAP) Related Information -

- [Access the Online NAP Tool by clicking this link](#)
- [2015 and subsequent crop year basic provisions display](#).(PDF, 229 KB)
- [View NAP Program Fact Sheet](#)
- [Noninsured Crop Disaster Assistance Program; Interim Rule](#) (PDF, 416 KB, Dec 15, 2014)

Related Topics

- [Emergency Assistance for Livestock, Honey Bees, and Farm-raised Fish \(ELAP\)](#)
- [Emergency Forest Restoration Program \(EFRP\)](#)
- [Livestock Forage Program \(LFP\)](#)
- [Livestock Indemnity Program \(LIP\)](#)
- [Noninsured Crop Disaster Assistance Program \(NAP\)](#)
- [Tree Assistance Program \(TAP\)](#)

I Want To...

- [View CCC-471 NAP Basic Provisions \(229 KB\)](#)

www.fsa.usda.gov/nap

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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

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

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

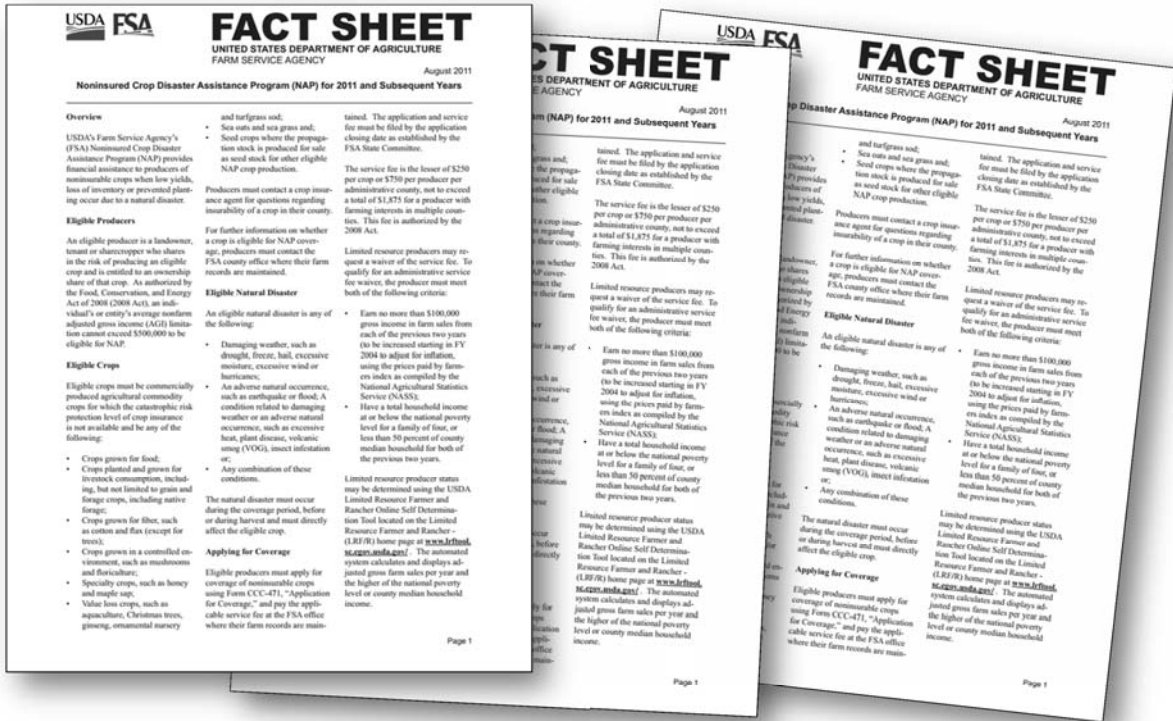
- ❖ *NAP fees or buy-up premiums are reduced by 50 percent for:*

- *Beginning farmers (BF)*
- *Limited resource farmers (LR)*
- *Socially disadvantaged farmers (SDA)*

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***

Farm Service Agency: Noninsured Crop Disaster Assistance Program (NAP)

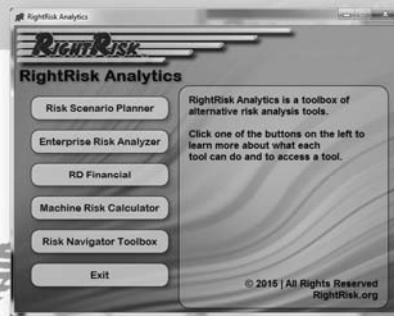
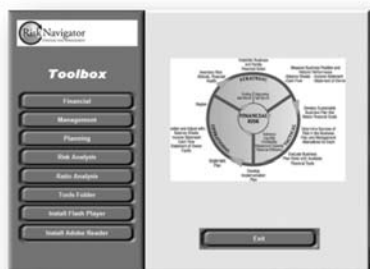


www.fsa.usda.gov/nap



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Evaluating Alternatives



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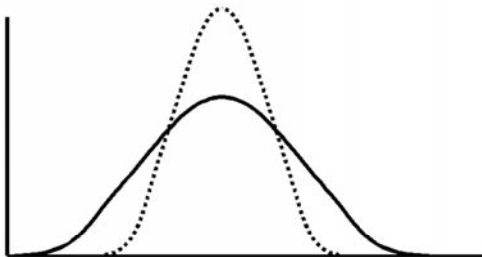
Risk Treatment

- Selecting one or more **options for modifying risks** and implementing those options
- Involves a **cyclical process** of assessing a risk treatment and deciding whether residual risk levels are acceptable
- If not, then selecting a **new risk treatment** and assessing the effect of that treatment until the residual risk matches the risk goal(s)

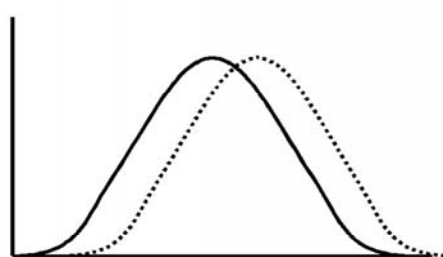
LIKELIHOOD (Probability)	CONSEQUENCES				
	What is the Severity of injuries / potential damages / financial impacts (if the risk event actually occurs)? (Logarithmic Scale, property industry specific matrix)				
	Insignificant	Minor	Moderate	Major	Catastrophic
	No Injuries First Aid No Envir Damage +/- \$1,000 Damage	Some First Aid required Low Envir Damage +/- \$10,000 Damage	External Medical Medium Envir Damage +/- \$100,000 Damage	Extensive Injuries High Envir Damage +/- \$1,000,000 Damage	Death or Major Injuries Toxic Envir Damage +/- \$1,000,000 Damage
Almost certain - expected in normal circumstances (100%)	MODERATE RISK	HIGH RISK	HIGH RISK	CRITICAL RISK	CRITICAL RISK
Likely - probably occur in most circumstances (75%)	MODERATE RISK	MODERATE RISK	HIGH RISK	HIGH RISK	CRITICAL RISK
Possible - might occur at some time (7%)	LOW RISK	MODERATE RISK	HIGH RISK	HIGH RISK	CRITICAL RISK
Unlikely - could occur at some future time (0.1%)	LOW RISK	MODERATE RISK	MODERATE RISK	HIGH RISK	HIGH RISK
Rare - only in exceptional circumstances (0.01%)	LOW RISK	LOW RISK	MODERATE RISK	MODERATE RISK	HIGH RISK

Strategy Impacts

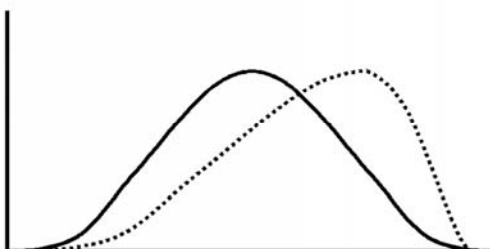
Panel 1: Same Mean, Less Dispersion



Panel 2: Same Dispersion, Higher Mean



Panel 3: Skewing the distribution



Panel 4: Truncating the Distribution



Risk Navigator Tool Box

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RightRisk Analytics



- Risk Scenario Planner
- relatively minor changes
- Enterprise Risk Analyzer
- larger changes
- RDFinancial
- whole farm budget, substantial changes
- Machine Risk Calculator
- estimating machinery and field operation costs

Account	Balance	Debit	Credit	Balance	Debit	Credit
Assets						
Cash	100,000			100,000		
Accounts Receivable	200,000			200,000		
Inventory	300,000			300,000		
Land	400,000			400,000		
Buildings	500,000			500,000		
Equipment	600,000			600,000		
Liabilities						
Accounts Payable		100,000			100,000	
Notes Payable		200,000			200,000	
Equity						
Owner's Equity			1,500,000			1,500,000
Total	1,600,000					1,600,000

<http://RightRisk.org/tools>

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Enterprise Risk Analyzer

Enterprise Risk Analyzer
Version 1.06
Click Here to Begin

By: John P. Hewlett, University of Wyoming
Dr. Jay Parsons, Colorado State University
Dr. Stuart Halverson, University of Hawaii

	Cow-Calf	Native Hay	Oat Hay	Alfalfa Establishment	Alfalfa - Baled
FARM REVENUE					
TOTAL FARM INCOME - CASH	121,759.00	12,380.00	2,802.00	2,306.00	25,040.00
TOTAL NON-CASH INCOME ADJUSTMENTS					
GROSS FARM REVENUE	121,759.00	12,380.00	2,802.00	2,306.00	25,040.00
FARM EXPENSES					
FARM EXPENSES - CASH	86,843.00	6,557.00	1,756.00	2,297.00	12,072.00
FARM EXPENSES - NON-CASH EXPENSE ADJUSTMENTS	98,550.00	11,245.00	2,709.00	2,536.00	15,331.00
GROSS FARM EXPENSES	185,393.00	17,802.00	4,465.00	4,833.00	27,403.00
NET FARM INCOME FROM OPERATIONS	(63,634.00)	(5,422.00)	(1,663.00)	(2,527.00)	(2,363.00)
Break-Even PRICE Analysis					
YIELD PER ENTERPRISE UNIT	Cow-Calf	Native Hay	Oat Hay	Alfalfa Establishment	Alfalfa - Baled
Maximum	400	1.75	4	4	4
Most Likely	373.97	1.5	3	2.54	3
Minimum	350	1	1.5	1.5	1.5
BREAK-EVEN PRICE - CASH EXPENSES					
Minimum	0.59	32.30	33.77	44.17	29.02
Most Likely	0.64	37.68	45.03	69.56	38.69
Maximum	0.68	56.53	90.05	117.79	77.38
BREAK-EVEN PRICE - GROSS EXPENSES					
Minimum	1.27	87.69	85.87	92.94	65.87
Most Likely	1.36	102.31	114.49	146.37	87.83
Maximum	1.45	153.47	228.97	247.85	175.66
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"/>	<input type="button" value="Graph"/>

RIGHT RISK **RMA** **USDA**

Enterprise Risk Analyzer

Net Return Analysis

EnterpriseRiskAnalyzer_v1.11_BHCC - Application

Net Income Analysis **Whole FARM**

FARM Gross Revenue - Gross Expenses **FARM Cash Income - Cash Expenses**

Probability of Net Revenue Listed

Probability of Net Cash Income Listed

Probability

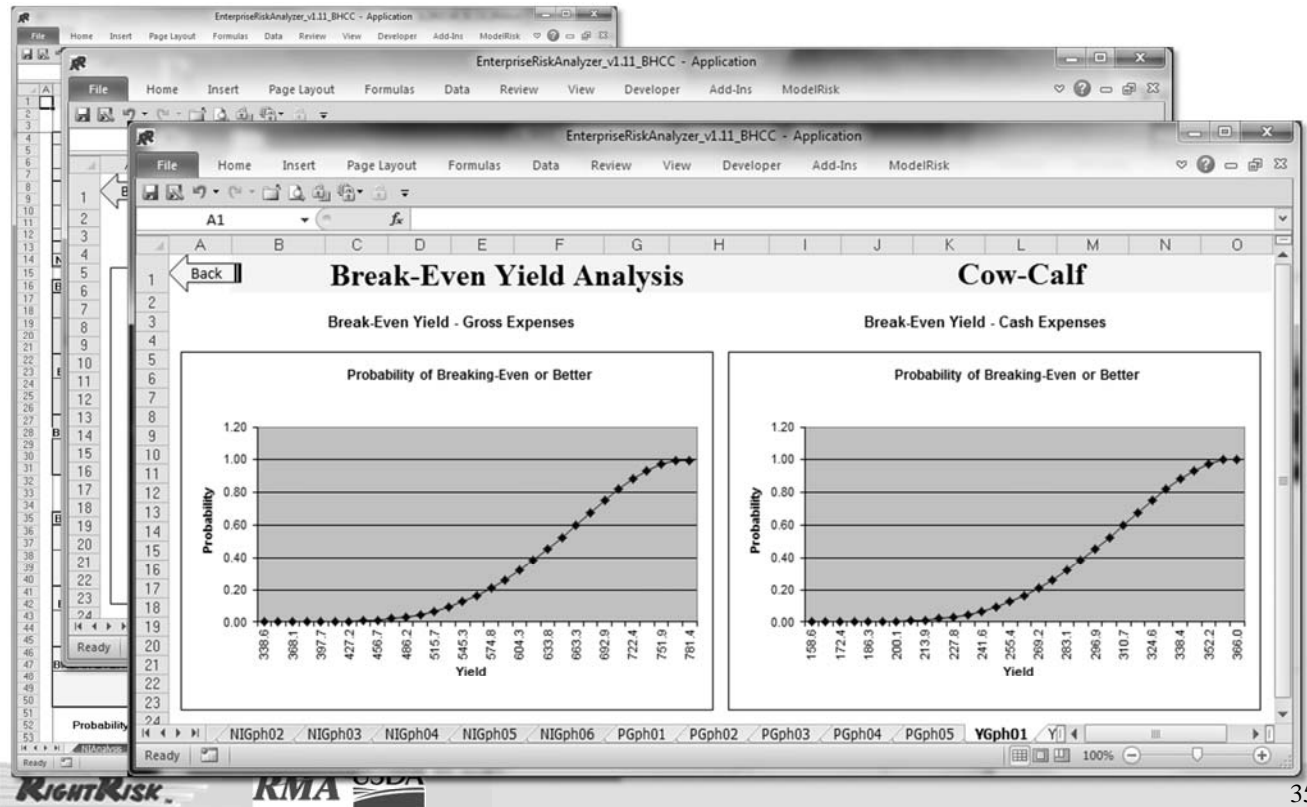
Net Income (\$1,000)

Ready

RIGHT RISK **RMA** **USDA**

Enterprise Risk Analyzer

Breakeven Analysis



Machine Risk Calculator

Power Unit

Machine Risk Calculator

By: John P. Hewlett, University of Wyoming
Dr. Jay Parsons, University of Nebraska

USDA RMA UNIVERSITY OF WYOMING NEBRASKA EXTENSION

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View Results

POWERED EQUIPMENT

Equipment Name: **WHEEL TRACTOR - 150 PTO HP**

Equipment Options: CAB, AIR, STR, PWSFT

Purchase Price: \$95,096.00

Year Quoted: 2007

Useful Life (Hours): 12,000

Annual Use (Hours): 1,000

Maximum Life (Years): 20

Cost Factor 1: 0.976

Cost Factor 2: 0.119

WHEEL TRACTOR - 150 PTO HP
CAB, AIR, STR, PWSFT

Purchase Price:	\$ 95,096	Year Quoted:	2007
Hours to Wearout:	12,000	Maximum Life:	20 Years
Cost Factor 1:	0.976	Annual Use:	1,000 Hours
Cost Factor 2:	0.119	Repair Factor 1:	0.007
Cost Factor 3:	0.0019	Repair Factor 2:	2.00
PTO Horsepower:	150	Fuel Price:	\$3.50 Per Gal.
Fuel Type:	DIESEL	Percent Load Factor:	60.0 percent
Fuel Consumption:	8.22 Gal/Hr	Oil Consumption:	0.04 Gal/Hr

Percent of Average Investment Charged for Opportunity Interest: 5.95 percent

Percent of Average Investment Charged for Tax, Housing & Insurance: 2.00 percent

ESTIMATED ANNUAL COSTS AND COST PER HOUR													
Annual Use HOURS	YRS TO TRADE	ANNUAL COSTS						COST PER HOUR					
		TOTAL COST	DEPR	OPP COST	THI	REPAIRS	FUEL & OIL	TOTAL COST	DEPR	OPP COST	THI	REPAIRS	FUEL & OIL
1,000	12.0	\$51,727	\$5,914	\$3,547	\$1,192	\$7,988	\$33,086	\$51.73	\$5.91	\$3.55	\$1.19	\$7.99	\$33.09

RIGHT RISK™

Machine Risk Calculator

By: John P. Hewlett, University of Wyoming
Dr. Jay Parsons, University of Nebraska

USDA RMA UNIVERSITY OF WYOMING

Field Capacity	Width (feet)	Speed (mph)	Efficiency (overall)	Rate Acres/Hour
Operation Accomplishment Rate	12.0	4.5	85%	5.56

Cumulative Probability Distribution For Field Operation Costs Per Acre With Risk Analysis By Varying: *Depreciation Expense*

Probability

Run

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RIGHT RISK™

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Risk Management Tools

- 1. Partial Budget Analyzer**
- Use this tool to evaluate smaller changes in the operation.
+ [Click here for a guide on using a partial budget.](#)
- 2. Risk Scenario Planning**
- Use this tool to evaluate the risk or uncertainty in your partial budget projections.
+ [Click here for a guide on using the Risk Scenario Planning tool and examples of its application.](#)
+ [Click here for a version of the Risk Scenario Planning tool depicting the Cow/Calf "Raise Bred Heifers to Sell" example outlined in the guide linked above.](#)
+ [Click here for a version of the Risk Scenario Planning tool depicting the crop farm "Replace Corn with more Dry Beans acres" example outlined in the guide linked above.](#)
+ [Click here for a version of the Risk Scenario Planning tool depicting the Cow/Calf "LRP Insurance Decision" example outlined in the guide linked above.](#)
- 3. Enterprise Risk Analyzer**
- Use this tool to evaluate larger changes or changes in enterprise mix for the operation.
- [Click here for a 32bit version of the Enterprise Risk Analyzer tool.](#)
- [Click here for a 64bit version of the Enterprise Risk Analyzer tool.](#)
+ [Click here for a guide to use the Enterprise Risk Analyzer tool.](#)
+ [Click here for a version of the ERA populated with Wyoming Big Horn Basin Cow/Calf Ranch data.](#)
+ [Click here for a version of the ERA populated with Wyoming Big Horn Basin Farm data.](#)
- 4. Machine Risk Calculator**
- Use this tool to estimate the cost of individual machinery services, the cost of a field operation (power unit + implement), or to estimate the cost of performing a custom operation.
- 5. Whole Farm Budget**
- Use this tool to evaluate more substantial changes, adding ranches/farms, whole enterprises, etc. to the operation.
- [Click here for a guide to use the RDFinancial tool.](#)
- 6. Risk Navigator Toolbox**
- Access the extensive risk management library (20+ tools) designed to implement a strategic risk management strategy
- 7. Price Risk Analysis: Futures, Options, LRP Comparison**

<http://RightRisk.org/tools>

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VOLUME 1, ISSUE 11
NOVEMBER 2013

RIGHTRISK NEWS

DATES TO REMEMBER

- November 15, 2013: Pasture, Rangeland, Forage Insurance (PRF)
- November 15, 2013: Apiculture
- November 15, 2013: Noninsured Crop Disaster Assistance Program (NAP) acreage reporting deadline for covered crops including grazing
- December 1, 2013: NAP application deadline for fall seeded crops and forage

How Much Risk is Right for You?

Risk Management Strategies for Livestock Producers

Livestock and bee producers have several risk management options to manage forage production risk. Given recent periods of extreme drought and price variability, managers might consider addressing forage risks using one or more insurance tools. Programs are available and can help protect against serious production losses, while helping to guarantee revenue levels.

Pasture, rangeland, forage (PRF) and Apiculture insurance protect against a decline in an index. The index is designed to serve as a proxy for pasture, range, and hay production in a specific area of land or grid.

The Noninsured Crop Disaster Program (NAP), administered by the Farm Service Agency (FSA) is designed to provide low cost catastrophic loss coverage to producers when federal crop insurance is not available.

NAP coverage may be used separately but not in conjunction with PRF and Apiculture insurance to provide protection against low yields, loss of inventory or prevented planting insurance for a typical ranch such as grains planted for hay (and that occur due to natural disasters for a typical ranch such as grains planted for hay (and that insured as grain), native (grass) hay and certain mixed forages, and greenland.

Coverage begins 30 days following sign-up. NAP covers losses of 50 percent or greater of expected production, at 55 percent of the market price (set by the state committee).

The 2008 Farm Bill required that livestock and apiculture producers enroll under either NAP coverage or crop insurance for all pastures, rangeland and native hay forage crops to qualify for certain disaster assistance programs, including the Livestock Forage Disaster Program (LFP) and Emergency Assistance for Livestock, Honey Bees, and Farm-raised Fish Program (ELAP). These requirements are expected under the new Farm Bill (or extension program (ELAP)). These requirements are expected under the new Farm Bill (or extension of the 2008 Bill) but are uncertain until new legislation is passed by Congress.

Recent bulletins that outline how these programs may work for operators include "Production Risk Management Options for Wyoming Ranches: Crop Insurance and Federal Disaster Programs" and "Risk Management Programs for Honey Bee Producers in Wyoming" and may be found in the Western Risk Management Library located under <http://riskmg.usdawe.org>.

More information is available for the programs mentioned in this article on the Internet at: www.rightrisk.org, www.rma.usda.gov, or www.fsa.usda.gov.

RISK MANAGEMENT PROFILE

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, Wyoming. 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.



To read more see:
RightRisk.org > Resources > Risk Mgt Profiles

HIGHLIGHTED COURSE

The Pasture, Rangeland, Forage (PRF) Pilot Insurance Program course available at RightRisk.org offers a step-by-step approach to learn more about PRF insurance and how PRF can be applied. The course includes audio and interactive features, while example farm profiles demonstrate application to real-world examples.



Course materials provide maps to assist in first deciding the type of PRF insurance available in the area. Links to appropriate Web pages help determine the grid identification numbers for individual grids. The next two sections in the course go into greater depth on Vegetative and Rainfall Index profiles.

A section of the PRF course explains how to go online to the RMA website and make the most of the cost estimator. Finally, users are encouraged to compare their own yield/historical experience for their grids with that presented in the online decision tool/cost estimator Web pages.

RightRisk helps decision-makers discover innovative and effective risk management solutions.

RightRisk News is brought to you by the RightRisk Team

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How much risk is right for you and your operation?



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Risk Management Profiles



RISK MANAGEMENT PROFILES

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.

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>

RightRisk
WHERE DO WE WANT TO GO? A SELF-ASSESSMENT

Applied Risk Management in Agriculture
Dana L. Hoag, editor
James C. Aleshell II, PhD
Shab Patten/Simon
Dennis Griffiths
John C. Hewlett

RightRisk Analytics
RightRisk Analytics is a toolbox of alternative risk analysis tools.
Click one of the buttons on the left to learn more about what each tool can do and to access a tool.

- Risk Scenario Planner
- Enterprise Risk Analyzer
- RD Financial
- Machine Risk Calculator
- Risk Navigator Toolbox
- Exit

Risk Navigator
STRATEGIC RISK MANAGEMENT

http://RightRisk.org > Courses

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Questions?

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