

## Today's Speakers

**Jay Parsons**  
**Colorado State University**  
**RightRisk Founder**



**Rod Sharp**  
**Colorado State University**  
**RightRisk Founder**

**Jeff Tranel**  
**Colorado State University**  
**RightRisk Founder**



## **Managing Risk on Your Farm** **6 Steps to Effective Risk Management**

**Rod Sharp, Jay Parsons, Jeff Tranel and John Hewlett**

Webinar  
**February 20, 2014**



## What is Risk?

The probability of an event occurring  
that can impact your:

**Current Profit Level**

**Financial Situation (equity position)**

**Satisfaction and Well-Being**

*The uncertainty of not knowing what will happen in the future.*

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## Origin of the word RISK

RISICARE

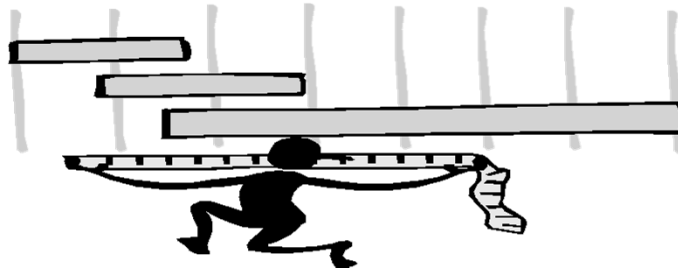
Italian word  
"TO DARE"



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## Relationship of Risk and Profit

Low Risk = Low Potential Profit  
High Risk = High Potential Profit



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## Risk Management

- The consequences of these decisions are not known when the decisions are made.
  - Is there a high probability of adverse consequences?
  - Would the consequences significantly disrupt the business?

### Managing Tradeoffs

How much risk and how much stress are you willing to endure to potentially achieve higher returns?



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## Why people don't manage for risk?

- Tradition – no history of managing risk
- Resistance to change
- Difficult – too many decisions, not enough time
- Memory of a bad experience
- Can it be done? What is the process?

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## A 6-Step Process to Effective Risk Management

- Step 1: Identify & Classify Your Risks
- Step 2: Measure Your Risks
- Step 3: Consider Your Ability to Bear Risk
- Step 4: Consider Risk Preferences
- Step 5: Write Risk Goals
- Step 6: Identify Tools and Strategies

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# Step 1: Identify and classify the risks you face



## Sources of Risk in Agriculture

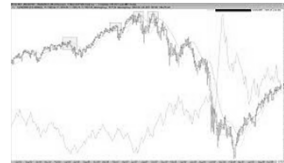
1. Marketing and Price Risk
2. Production Risk
3. Institutional Risk
4. Human Risk
5. Financial Risk



## Market Risk

- Any risk that impacts output or input prices after you commit to a plan of action.

- Weather
- Government action
- Consumer preferences
- Supplies
- Demand



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## Production Risk

- Any risk that impacts the expected outcome or yield.

- Weather
- Pests
- Diseases
- Technology
- Genetics
- Fire
- Timing of Operations



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## Institutional/Legal Risk

- Any risk that arises from disputes or disagreements or changes in the rules of the game.
  - Contractual arrangement
  - Business organization
  - Laws and regulations
  - Tort liability
  - Public policy and attitudes



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## Human Risk

- Any risk associated with the people involved in the farm business.
  - Human health and well being
  - Family and business relationships
  - Employee management
    - The possibility of losing a key employee
    - Moral or the mental state of the work force
  - Transition planning



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# Financial Risk

- Any risk that threatens the financial health and stability of the farm business.
  - Cost and availability of debt capital.
  - Financial shocks.
  - Ability to maintain and grow equity in the business.

	2012	2011	2010
<b>ASSETS</b>			
Current assets			
Cash	\$128,124	\$49,124	\$52,712
Trade receivables	89,447	74,724	73,204
Prepaid expenses	14,704	14,724	14,204
Other current assets	22,821	22,824	22,824
Non-current assets			
Land	10,124	10,124	10,124
Plant and equipment	1,124	1,124	1,124
Other non-current assets	1,124	1,124	1,124
Total assets	\$257,344	\$170,124	\$174,288
<b>LIABILITIES</b>			
Current liabilities			
Accounts payable	14,124	14,124	14,124
Other current liabilities	14,124	14,124	14,124
Non-current liabilities			
Long-term debt	128,124	128,124	128,124
Other non-current liabilities	1,124	1,124	1,124
Total liabilities	\$157,500	\$157,500	\$157,500
Total equity	\$100,000	\$112,624	\$116,788



# Workbook Activity

## Agricultural Risk Management

Step 1: List and Classify Your Risks		Step 2: Measure Your Risks	
Risk	Source of Risk	Probability/Impact	Management Priority
An uncertainty that can impact your: <ul style="list-style-type: none"> <li>• Profit Levels</li> <li>• Financial Position (equity)</li> <li>• Satisfaction and Well Being</li> </ul>	<ul style="list-style-type: none"> <li>• Production Risk</li> <li>• Market Risk</li> <li>• Financial Risk</li> <li>• Legal Risk</li> <li>• Human Risk</li> </ul>	<ul style="list-style-type: none"> <li>• Low Probability/Low Impact</li> <li>• Low Probability/Medium Impact</li> <li>• Low Probability/High Impact</li> <li>• Medium Probability/Low Impact</li> <li>• Medium Probability/Medium Impact</li> <li>• Medium Probability/High Impact</li> <li>• High Probability/Low Impact</li> <li>• High Probability/Medium Impact</li> <li>• High Probability/High Impact</li> </ul>	<ul style="list-style-type: none"> <li>• Low Priority</li> <li>• Medium Priority</li> <li>• High Priority</li> </ul>
Severe Weather	Production		
Serious accident or death	Human		
Weak Exports	Market		
Interest Rate Increase	Financial		
Compliance with laws	Legal		

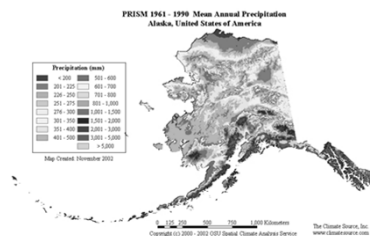


# Step 2: Measure your risks



## Steps in Risk Management Planning?

- Step 2: Measure your risks.
  - Probabilities of something happening.
    - Some are known by observation or measurement
    - Some must be estimated by the decision maker.
  - Impact of the risk.



# Risk Profiler



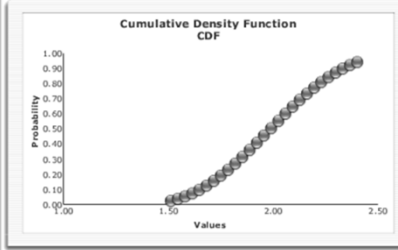
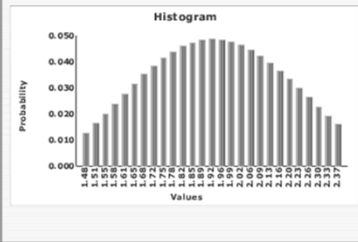
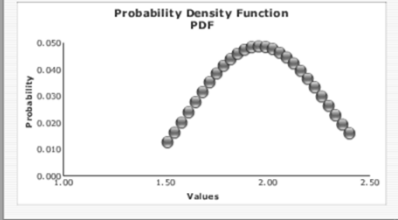
By: Dana Hoag and Eihab Fathelrahman  
Contact: dana.hoag@colostate.edu

Risk Profiler

Describe Profile Features   Describe Profile PDF   Build Profile w/Data   Help   Save, Load, Delete

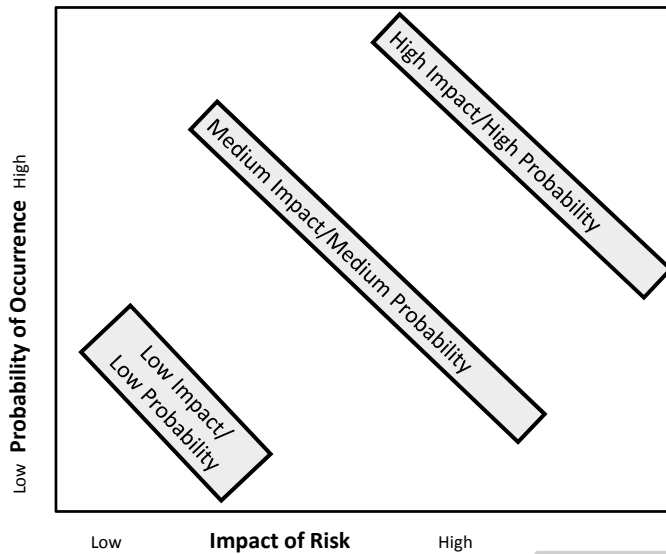
Enter the minimum, maximum and most likely values for your variable below.

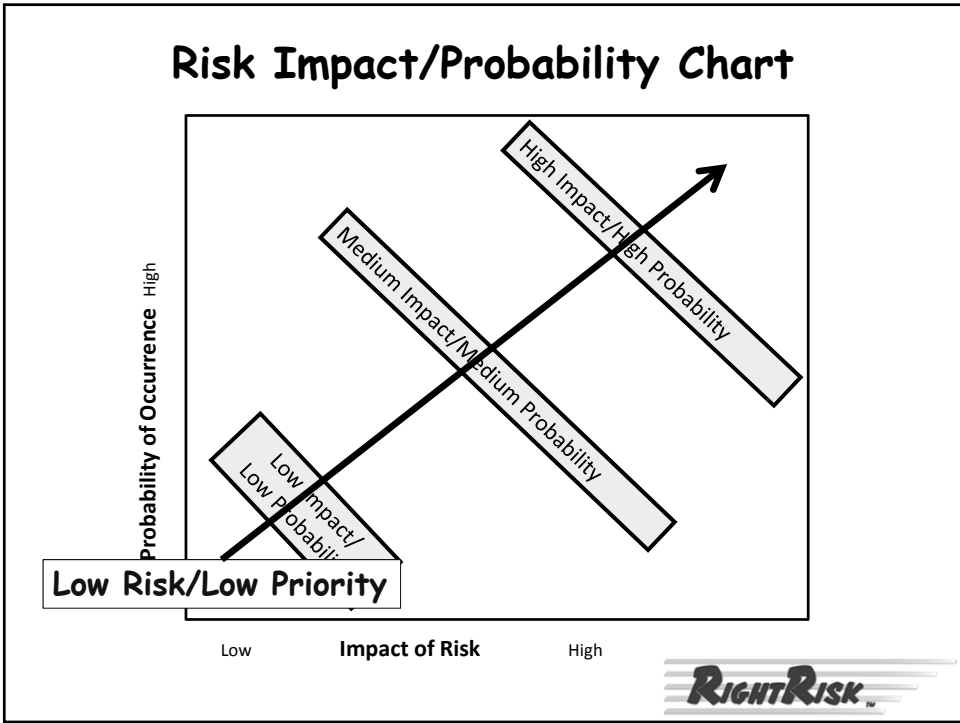
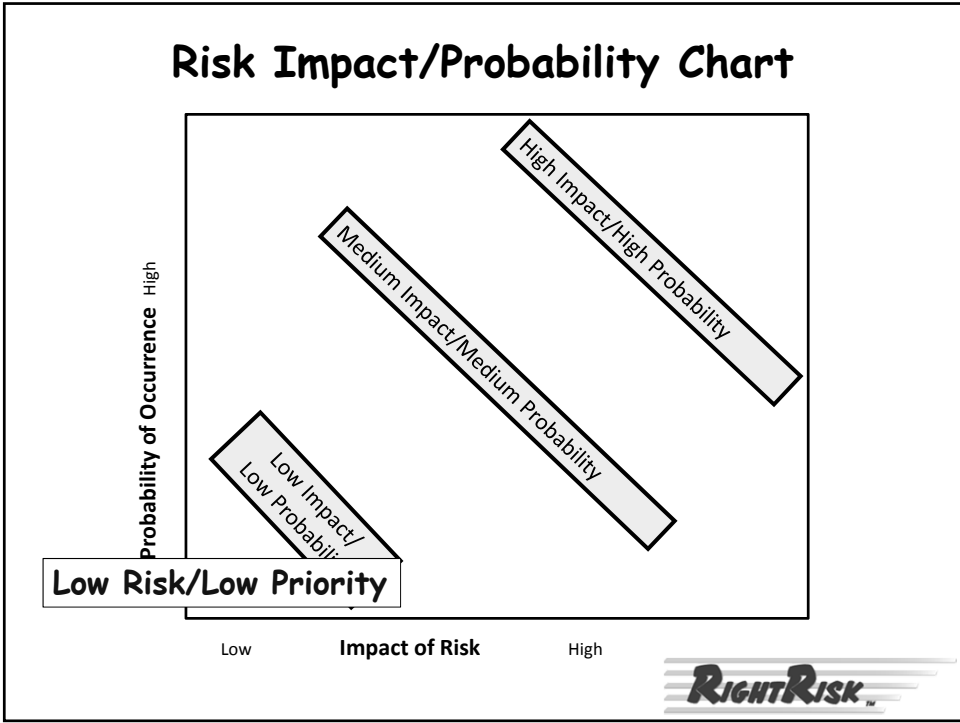
Statistics	
Measure	Value
Minimum	1.26
Most Likely	1.97
Maximum	2.80
Mean	1.99
Variance	0.07
Standard Deviation	0.26
Coefficient of Variation	0.13
Max	2.80
Min	1.26

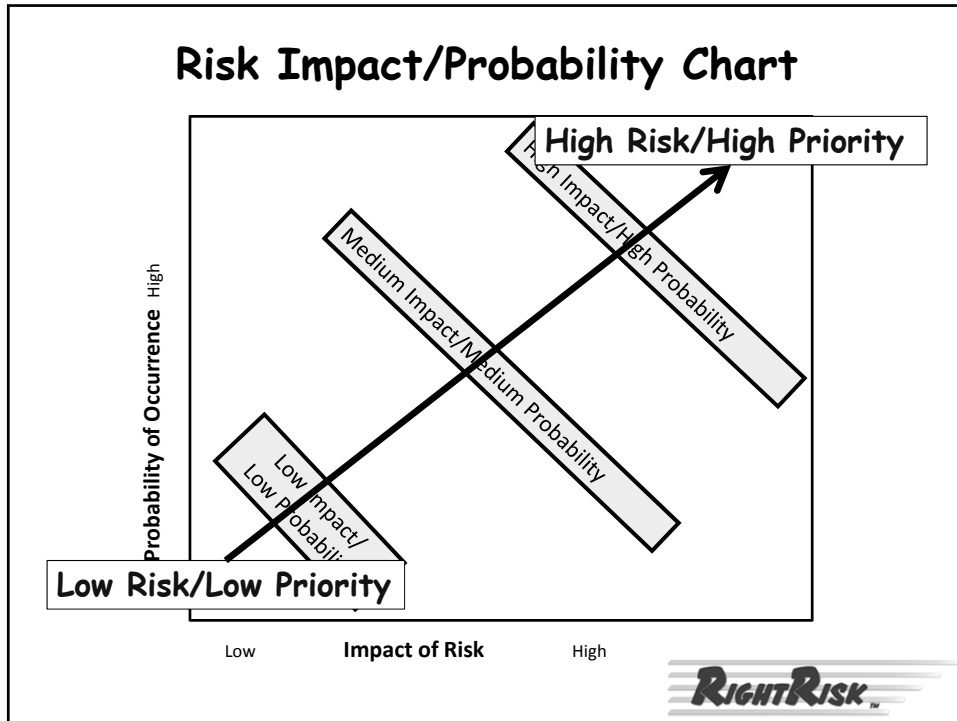


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# Risk Impact/Probability Chart



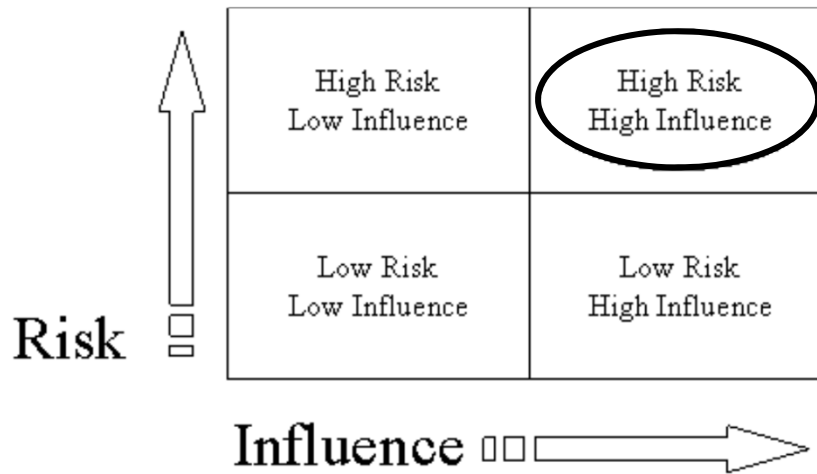




### Prioritizing Risk

- How big are they?
  - Probability they will affect me
  - Impact if they do
- What can I do about them?

## Risk Influence Calculator



## Workbook Activity

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Severe Weather	Production	Medium Prob/High Impact	High Priority
Serious accident or death	Human	Low Prob/High Impact	High Priority
Weak Exports	Market	Low Prob/Med Impact	Med. Priority
Interest Rate Increase	Financial	High Prob/Med. Impact	Med. Priority
Compliance with laws	Legal	Medium Prob/Low Impact	Low Priority

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**Step 3:  
Consider your ability  
or capacity to  
bear risk**



## Steps in Risk Management Planning?

- Step 3: Assess your risk bearing ability.
  - Risk management strategies are affected by an individual's capacity or ability to bear risk.
  - Risk bearing capacity is directly related to the solvency and liquidity of one's financial position.



## Measuring Capacity to Bear Risk

- **What is liquidity?**
  - The ability of a business to meet short-term obligations.

Symptoms of a Problem:

- Increasing carryover operating debt
- Selling productive assets to help pay bills
- Bills are not being paid on time



## Measuring Capacity to Bear Risk

- **What is Solvency?**

- the ability of a business meet its long-term financial obligations.

Symptoms of a Problem:

- Business has a difficult time withstanding any adversity
- Bank is reluctant to renew a loan
- Foreclosure and bankruptcy



## Measuring Capacity to Bear Risk

- **How do I measure my liquidity?**
- Calculate your "**Current Ratio**":

$$CR = \text{Current Farm Assets} \div \text{Current Farm Liabilities}$$

- Where to find the numbers: **Balance Sheet**





## Measuring Capacity to Bear Risk

- How do I measure my solvency?
- Calculate your “*Debt to Asset Ratio*”:

$$D/A \text{ Ratio} = \text{Total Farm Assets} \div \text{Total Farm Liabilities}$$

- Where to find the numbers: **Balance Sheet**



## How Do I Evaluate My Ratio Calculations?

- **Benchmarks**
  - Rules of thumb!!!

Green indicates a strong measure

(low risk) 

Yellow indicates a stable measure

(moderate risk) 

Red indicates a weak measure

(high risk) 

**Variations do occur!**



## How Do I Evaluate My Ratio Calculations?

- Liquidity Benchmark

Current Ratio

Low Risk	Moderate Risk	High Risk
> 1.5	1.0-1.5	< 1.0

- Solvency Benchmark

Debt to Asset Ratio

Low Risk	Moderate Risk	High Risk
< 30%	30-70%	> 70%



## Capacity to Bear Risk

### Operator One

- Beginning farmer
- Higher debt load
- Limited equity
- CR: 1.13
- D/A: 0.48



### Operator Two

- Established farmer
- Limited debt
- Significant equity
- CR: 3.6
- D/A: 0.08



Calculating Current Ratio and Debt to Asset Ratios							
CURRENT ASSETS				CURRENT LIABILITIES			
	Year 1	Year 2	Year 3		Year 1	Year 2	Year 3
Cash and Checking	1,572	4,387	12,389	Accounts Payable	620	0	0
Accounts Receivable				Notes Payable	1,568	1,789	1,100
Prepaid Expenses	860	500	1,200	Current Portion of Term Debt	2,669	2,572	2,480
Inventories				Accrued Interest			
Marketable Livestock				Taxes Payable			
Stored Crops and Feed	4,800	6,500	7,389	Ad Valorem			
Purchased Feed				Employee Payroll Withholding			
Supplies	1,287	3,478	5,328	Income Taxes	869	1,290	1,500
Other Current Assets				Deferred Taxes			
Non-Farm Assets				Other Current Liabilities	569	400	45
Savings				Non-Farm Current Liabilities			
Marketable Securities				Non-Farm Notes & Interest			
Other Non-Farm Assets				Other Non-Farm			
<b>Total Current Assets</b>	<b>\$8,519</b>	<b>\$14,865</b>	<b>\$26,306</b>	<b>Total Current Liabilities</b>	<b>\$6,295</b>	<b>\$6,051</b>	<b>\$5,125</b>
NON-CURRENT ASSETS				NON-CURRENT ASSETS			
Breeding Livestock				Notes Payable, Non-Real Estate	22,222	18,970	15,687
Vehicles	60,000	50,000	48,000	Notes Payable, Real Estate	125,000	123,500	119,430
Machinery, Equipment	28,000	24,000	23,000	Deferred Taxes			
Investment in Capital Leases				Other Non-Current Liabilities			
Contracts and Notes Receivable				Non-Farm Liabilities			
Investment in Cooperatives				Non-Farm Notes			
Real Estate, Land	290,000	290,000	290,000	Other Non-Farm			
Buildings and Improvements	85,000	83,000	81,000	<b>Total Non-Current Assets</b>	<b>\$147,222</b>	<b>\$142,470</b>	<b>\$135,117</b>
Other Non-Current Assets				<b>TOTAL LIABILITIES</b>	<b>\$153,517</b>	<b>\$148,521</b>	<b>\$140,242</b>
Non-Farm Assets				<b>TOTAL EQUITY</b>	<b>\$318,002</b>	<b>\$313,344</b>	<b>\$328,064</b>
Cash Value, Life Insurance				<b>CURRENT RATIO</b>	<b>1.35</b>	<b>2.46</b>	<b>5.13</b>
Investment in Other Entities					Yellow	Green	Green
Other Non-Farm Assets				<b>DEBT TO ASSET RATIO</b>	<b>0.33</b>	<b>0.32</b>	<b>0.30</b>
<b>Total Non-Current Assets</b>	<b>\$463,000</b>	<b>\$447,000</b>	<b>\$442,000</b>		Yellow	Yellow	Green
<b>TOTAL ASSETS</b>	<b>\$471,519</b>	<b>\$461,865</b>	<b>\$468,306</b>				

## Step 3: Summary and Comments

### Step 3: Consider your Ability or Capacity to Bear Risk

- Develop and maintain an accurate set of financial statements to use for making more informed management decisions.
- Calculate your liquidity and solvency measures annually to help determine your capacity to bear risk.
- Use benchmarks for comparison purposes, but remember they are just benchmarks and they may or may not represent your operation very well.
- Comparisons and trends from year to year are a good estimate of financial progress.



## **Step 4: Consider the risk preferences of operators and managers**



### **Steps in Risk Management Planning?**

- Step 4: Consider the risk preferences of operators and managers.
  - 3 basic types of risk tolerances or preferences
  - Risk averse producers
  - Risk neutral producers
  - Risk preferring or risk seeking producers



## Risk Preferences

- Risk Adverse Preference
  - Most cautious.
  - Expect the worst to happen.
  - Almost always choose the safer investment.
  - A guarantee has more stock than other possible outcomes.



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## Risk Preferences

- Risk Neutral Preference
  - Does not care about the risks involved, only concerned about the end result.
  - Understand they must take some risks to get ahead.
  - Chooses the result with the highest possible gains or returns without taking into account possible outcomes.



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## Risk Preferences

- Risk Preferring Preference
  - Willing to take higher risks to achieve above average returns.
  - Often look for chances to take risks and may take unnecessary chances.
  - Find risk to be challenging and exciting.



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## Why is it important to know your risk preference?

- Risk preferences should be considered when making management decisions.
- Helps you make management decisions consistent with your preferences.
- Better able to understand why business partners (and spouses) act like they do.

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## **Step 4: Summary and Comments**

### **Step 4: Consider your Risk Preferences**

- Everyone has their own risk preference and there is not a right/wrong or good/bad answer. You are what you are.
- The threshold of what is an acceptable level of risk varies considerably between individuals.
- How you feel about risk should influence the business decisions you make.
- If you and your management team are risk averse, do not take unnecessary risks or work to reduce risks to an acceptable level that makes you comfortable, even though you may sacrifice opportunities for greater wealth.

Comment

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# Step 5: Write “SMART” risk goals

**“Specific, Measurable, Attainable  
Relevant, and Time Bound”**



## Strategic Planning



1. Where are you?
2. Where you want to go?
3. How you get there?





## Where Do You Want To Go?

*A projected state of affairs  
that a person or system plans to achieve*

- Goals
  - Short term, intermediate term, long term
- Ask 'Why'
  - Sheds light on the true reason for the goal
  - Enhances reflection and discussion
  - Aids in determining "how to best get there"

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## Benefits of Setting Goals

- They reflect the values , interests, resources, and capabilities of everyone involved in the business.
- They provide a basis for all business and family decisions.
- They provide a means of measuring progress.

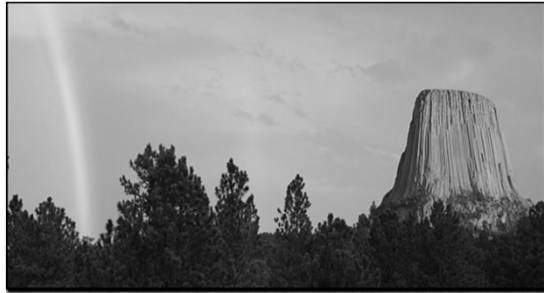


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## SMART Goals

### Specific

- What are you going to do?
- Why is this important?
- How/when are you going to do it?



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## SMART Goals

### Specific

### Measurable

- Establish concrete criteria for measuring progress
- Use objectives



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## SMART Goals

**S**pecific

**M**easurable

**A**chievable

- Remember to stretch



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## SMART Goals

**S**pecific

**M**easurable

**A**chievable

**R**ealistic

- Do-able



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## SMART Goals

**S**pecific

**M**easurable

**A**chievable

**R**ealistic

**T**ime Sensitive

- Timeframe for achievement of goals and objectives along the way



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## SMART Goals

**S**pecific

**M**easurable

**A**chievable

**R**ealistic

**T**ime Sensitive



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## SMART Goals - Examples

Goal	S	M	A	R	T
Generate more net farm income (profit).		X	X	X	
Generate net farm income (profit) of at least \$63,000 every year.	X	X	X	X	X
Increase wheat yields.		X	X		
Increase wheat yields by 2 bushels per acre per year (without increasing costs).	X	X	X	X	X
Cut family living expenses \$100 per month.	X	X	X	X	X
Save \$4,000 per year for retirement.	X	X	X	X	X



## Step 5: Summary and Comments

- Are a projected state of affairs to be achieved.
- Reflect the values, interests, resources, and capabilities of everyone involved in the business.
- Provide a basis for all business and family decisions.
- Provide a means of measuring progress.
- Should be S.M.A.R.T.
  - Specific, Measurable, Achievable, Realistic, and Time sensitive.



## **Step 6: Identify risk tools and strategies to help manage risk**



### **How to Get There?**

- Help is everywhere when it comes to deciding which enterprises, investments, input purchases, etc.
  - Family, friends, neighbors,...
  - Extension
  - Input suppliers (e.g. seed companies)
  - Web sites
  - Accountants, attorneys, consultants, .....
- Tools
  - Partial budgeting
  - Records
  - Financial analysis
  - Courses: e.g. "Feasibility of Alternative Enterprises"
  - Etc.



## Risk Tools & Strategies - Education



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Home Products Courses Resources Workshops People Sponsors

Welcome to RightRisk, risk management education products developed by the RightRisk Education Team. RightRisk is an innovative risk research and education organization that provides tools and resources to help you explore risk management decisions and evaluate your options.

Use the menus above to access the web products or click an image below to learn more about our operation.

- AG SURVIVOR
- Risk Navigator

- Feasibility of Alternative Rural Enterprises
- Taxes for Agricultural Enterprises
- A Lasting Legacy #1
- A Lasting Legacy #2
- AGR-Lite Training
- Getting on Track:
  - Better Management Through Basic Ag Records
  - Better Management through Financial Statements
  - Better Management through Financial Analysis
- Management Succession: Where Are We?
- PRF Pilot Insurance

**FREE!**

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## Risk Tools and Strategies - Diversification

- Diversification
  - Enterprise selection
  - Market timing (spreading your sales)
  - Geographic locations
  - Business structures
  - Investments
  - Vertical integration



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## Risk Tools and Strategies - Enterprises

- Grow/produce low-risk enterprises
  - Low variation in returns from year to year
    - Stable yields
    - Stable market prices
- Low-risk production practices
  - Irrigation
  - Vaccination programs



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## Risk Tools and Strategies - Marketing

- Forward Pricing
  - Use of contracting
  - Hedging using futures and options
- Multiple Markets
  - On-farm Sales
  - Farmers' Markets
  - Cooperatives
  - Exports (national/international)



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## Risk Tools and Strategies - Land Control

- Land lease arrangements
  - Negotiated land lease arrangements
  - Crop share agreements (land owner shares in the yield variability and market risk)



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## Risk Tools and Strategies - Business

- Business structure
  - Incorporating to isolate high-risk activities
- Good information
  - Records (production, financial)
  - Analysis



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## Risk Tools and Strategies

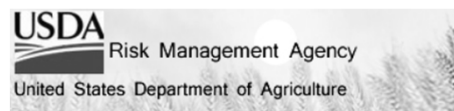
- Excess Capacity
  - Extra feed supplies
  - Excess machinery
  - Cash reserves
    - Cost of owning and maintaining excess capacity must be considered
- Off-Farm Employment
  - Additional cash flow
  - Take advantage of employable skills.



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## Risk Tools and Strategies - Insurance

- AGR-Lite
  - Protection from low revenues due to unavoidable natural disasters and market fluctuations.
- Other crop yield and revenue insurance
- Livestock insurance



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## Goal Setting / Strategic Planning

- Provides insights to you and the management team
- Helps a person or firm to move towards a 'desired state'
- Enhances relationship building and maintenance
  - Understand one's self
  - Understand others
- Tools provide opportunities for individuals to reflect and talk within a "safe" environment with an objective in mind

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