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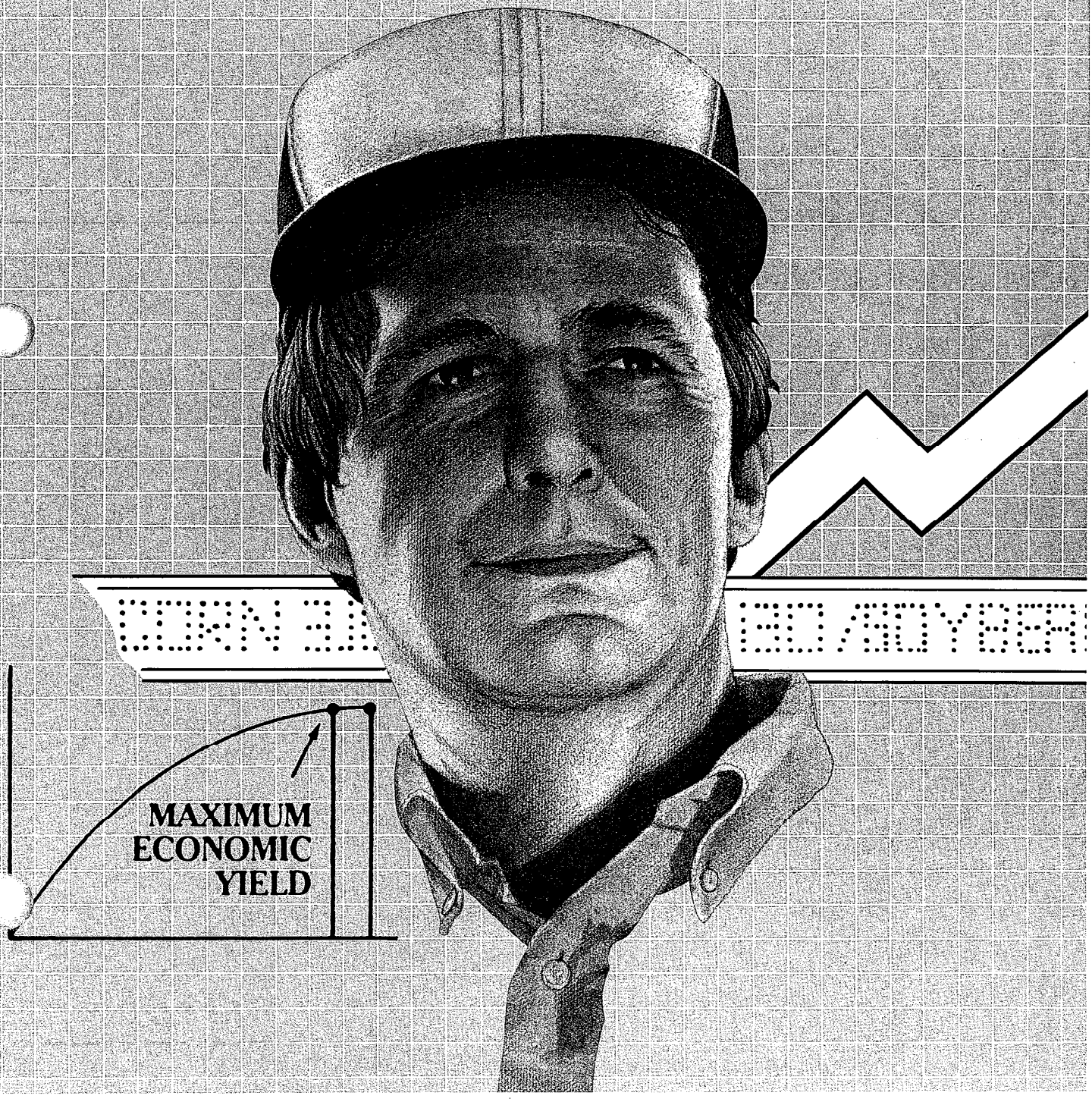
SECOND EDITION

RISK MANAGEMENT

Success Key of the 80s



FOREWORD
Risk Management — Success Key of the '80s

Throughout American history, families have chosen to move from rural areas to the cities. But today, that movement is involuntary—forced by economic conditions that farmers cannot control. For those who stay, new forces will shape their destiny.

That's why International Minerals & Chemical Corporation (IMC) invited leaders in agricultural education, research, finance and communications to a series of national conferences—to identify these new challenges and determine how to meet them successfully. A key area that stands out is "risk management."

These experts agree that a farmer's degree of success in managing risk—including production, financial and marketing risk—may be the difference between success and liquidation. Because of the relationship between yields and solvency, IMC believes that targeting maximum economic yields (MEY) and maintaining a management program designed to reach that yield level is the only acceptable long-term approach to successful farming.

The future of agriculture rests with those willing and able to make a commitment to MEY and managing risk. IMC is dedicated to assisting these farmers with information and products designed to help them reach these goals.

This publication is a good example. It contains the latest available risk management advice from leading agronomists, soil scientists, economists, bankers and other agricultural leaders. More than 100,000 copies have already been distributed. Now, in its second edition, the information is as vital as ever, as you approach the tremendous opportunities ahead.

CHAPTER 1
Managing Risks in The Field

Maximum Economic Yield: Best Way to Minimize Production Risk

There are three kinds of people—those who make things happen, those who watch things happen, and those who wonder what happened.

That's always been true. But it'll be doubly true in the near future. Farming is on a fast track now. And it'll get faster. To succeed, you'll need to move into the "fast lane," if you're not already there. Staying in the middle lane will only assure economic survival, say economic specialists. You'll perish in the slow lane.

Why?

Rising costs will gobble you alive except at the higher yield levels. Ironically, it's the fear of high costs, though, that is causing many farmers to approach the edge, economically speaking, say experts.

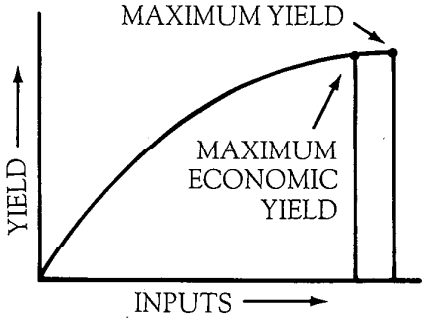
These farmers, are first of all, overlooking the critical factor of risk management in today's faster track agriculture. Secondly, they're overlooking the relatively new "economic truism" that it's maximum economic yield that counts—not how high input costs are.

If that sounds like a whole lot of "economic hogwash" to you, don't quit reading—unless you're already rich.

"While some persons may shout 'doom and gloom' and preach that we must not spend for inputs, I think the choice we have is clearly between two strategies. One is short-sighted and only considers reducing expenses. The other removes emotion, concentrates on good principles and maximizes the profit," declares Marty Thornton, vice president and senior farm manager of Peoples Bank of Bloomington, Bloomington, IL. "Really, there is no choice. We must use more effective inputs and be willing to encounter more costs as long as they generate more profit."

So what really is Maximum Economic Yield (MEY)? Simply put, it's using a high level of inputs required for high yields in your area and situation, which may increase per acre costs, but increases yields at a faster pace. That cuts cost per unit. In short, it's producing a commodity at the lowest, most efficient unit cost, which produces the most net profit.

You're right if you believe that some of those super-high, record-breaking yields may not be maximum economic yields. Estimates vary, but all scientists agree maximum economic yields are equal to or slightly lower than maximum yields—somewhere around 95 to 96% of maximum yields. (See Figure 1).



Source: Potash and Phosphate Institute

Maximum economic yield is slightly lower than maximum yield.

Crop scientists agree with banker Thornton's philosophy on costs versus profits.

"In our high yield studies, per acre production costs go up, but cost per bushel goes down," says Dr. Sterling Olsen, USDA scientist at Colorado State University. "In other words, if you were at a 100-bushel yield level on corn under our assumptions, the cost would come out about $3 per bushel. So if you don't get more than $3 a bushel, you're losing money.

"On the other hand, we've had a number of irrigated yields in our studies go over 300 bushels. If you're in that yield area,

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"Reducing unit cost of production is the key to more profits..."

86% of production costs are already spent at the 100-bushel level. The extra 14% production costs adds 75 bu/a more corn.

say 305 bushels, your per-acre production costs are up considerably, but your cost per bushel is only about $1.50. That allows a much wider profit zone, depending on the price of corn."

Dr. Fred Welch, University of Illinois soil scientist, seconds that evaluation: "Reducing unit cost of production is the key to more profits, and the best way to do that is to go for high yields, because fixed and variable costs don't rise percentagewise as fast as yield."

Example: A corn yield rising from 100 to 175 bu/a can slash production cost per bushel by about one-third. Study Table 1, based on University of Illinois data. Note the $6 per-acre loss with 100-bushel yield, $186 per-acre profit at the 175-bushel level with a corn price of $3.25, in both instances. Over a period of 5 years, this could amount to a great deal of money.

Key point is this: 86% of production costs are already spent at the 100-bushel level. The extra 14% production costs add 75 bu/a more corn. Obviously, many improved management practices enter into this yield increase; some, such as timeliness of operation, cost little or nothing.

Table 1. As corn yields go up, production costs per acre increase, but production costs per bushel go down and net profits increase.

Corn Yield	Production Costs		Net Profit
bu/A	$/A	$/bu	$/A
175	383	2.18	186
150	359	2.39	129
125	343	2.74	63
100	331	3.31	-6

Source: Potash and Phosphate Institute

Geography or different crops make little difference when it comes to the MEY principle, say scientists.

"It has been true for a long time that average yields, average production costs and average market price are not going to make you much money with soybeans," declares Dr. Jim Dunphy, North Carolina State University soybean specialist. "You have to plan and work to beat the averages in all of these areas to make good profits."

With forages, crop quality, the companion to high yields, is a more critical element than with grains, especially when that forage is fed through high-potential dairy cows.

"It's critically important today to shoot for maximum economic forage yields, and we need to underline the word economic," asserts Dr. Neal Martin, University of Minnesota forage specialist. "We not only have to get high yield, but our forage quality, which can vary tremendously, dictates the value for feeding or price. As yield increases, production costs go up, but cost per ton drops, and that's the name of the profit game."

In the wheat country of the Great Plains, where moisture changes yield levels across the board, the principle still holds.

"We've been promoting maximum economic yield because you want that whether you're in a poor priced market or a good priced market, since it lowers unit costs," concludes Dr. Bill Tucker, Oklahoma State University agronomist.

"Currently, many management systems operate at, or above, maximum levels for some inputs and at yield-limiting levels for others," adds Dr. Joe Touchton, Auburn University agronomist in Alabama. "Too often, high-cost inputs are optimized while low-cost inputs are ignored. For maximum economic yield, all inputs must be optimized."

No-cost inputs, Touchton reminds, include such things as timeliness in operations, equipment adjustments and crop rotation. High-cost inputs include such items as fertilizer, fertilizer application, variety selection, plant population, row width and irrigation.

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"Although optimizing these inputs may increase costs, they actually should be considered no-cost items because of the increased net returns that accompany their proper use," Touchton reminds.

Fertilizer Use

No farmer in his right mind would deny that adding plant food does good things to crop yields. Yet fields showing fertility stress by mid-summer are as common as hot weather in August.

That number always expands in times of higher fertilizer prices and/or lower crop prices. But that knee-jerk reaction is like cutting off your nose to spite your face, say crop and economic specialists.

"Even though wide differences in crop prices and fertilizer prices are used, the most profitable fertilizer rate turns out to be the one that results in yields being near the top of the yield response curve," says Dr. Welch.

That doesn't mean that pouring on fertilizer way beyond soil test recommendations is smart or profitable.

"Certainly, there is a point where enough fertilizer is enough," the scientist acknowledges. "Then, instead of spending more money for fertilizer, those dollars should be invested to manage some other input more effectively.

"It's not good economic sense to add large amounts of unneeded fertilizer—and even more unwise to suffer economic loss from too little fertilizer," Welch adds. "Inadequate fertilizer is a risk too costly to afford. High, profitable yields are impossible without good fertility."

Even some soil scientists are changing their thinking on what is and what isn't enough fertilizer as other management inputs are sharpened, agreed Neal Martin, University of Minnesota agronomist.

"A top fertilizer program is an absolute must for top forage yields and profits," challenges Martin. "And most farmers are not fertilizing alfalfa, for example, enough, nor liming enough where lime is needed. It's old hat, but lime is one of the major factors limiting yield. We've just got too many soils low in pH."

Ironically, scientists in Wisconsin, Iowa, Kentucky and North Carolina reported low pH problems on corn and/or soybeans in parts of their states in a spot check in 1983. Lack of cost-sharing for liming (general cost-sharing for liming for ASCS ended in 1977), high use of ammonium nitrate on corn, rented land, and the poor economy for an extended period were blamed.

Currently, Martin says Minnesota thinking on alfalfa fertilization, for soils capable of high yields, is to fertilize up to soil test recommendations at seeding time for P and K, then resupply all P and K that's removed by each crop.

Supply 12 lbs/a of P_2O_5 and about 50 lbs/a of K_2O for each ton of alfalfa removed. "If you don't top dress, you'll mine the soil and won't maintain the high economic yield level," Martin says.

With all the droughts in certain areas of the country in recent years, some farmers cut fertilizer rates drastically—forgetting that fertilizer stretches moisture.

How? Good fertility stimulates deeper root growth. Potassium reduces the crop's water requirement by lowering transpiration rate and aiding the closing of the leaf pores where plants expel water. Good fertility compensates for lower nutrient uptake efficiency in dry times. And, good fertility speeds maturity, which can enhance silking performance, for example.

"We always look at soil fertility management as a way of maximizing water use efficiency—thereby reducing risk of moisture stress," declares Dr. Paul Fixen, South Dakota State University soil scientist.

In South Dakota tests, water use efficiency was 7.3 bu/inch for unfertilized

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oats, 8.8 bu/inch for fertilized oats, 4.0 bu/inch for unfertilized corn, and 6.2 bu/inch for corn receiving 100-30-0 lbs of plant food per acre. No K was called for in these tests.

"So we go from 4.0 to 6.2 bu/inch as we add N and P," Fixen says.

In Kansas, scientists found an adequate rate of N, P_2O_5 and sulfur (S) hiked unirrigated winter wheat yield 22 bu/a (from 14 to 36 bu/a) and irrigated wheat yield 31 bu/a (from 68 to 99)—a 157% hike under dryland production and 45% under irrigation.

Fertilizer Placement

Low crop prices and higher fertilizer prices teamed up to suddenly make fertilizer efficiency the by-word in about 1981. Farmers started looking for ways to get more bang from their fertilizer bucks.

Those factors, combined with the new push toward conservation tillage by many farmers, brought back some old methods and created some new ones concerning fertilizer placement.

Example: In those better times, speed and convenience of broadcast applications ruled the day. And most farmers still apply most of their nutrients that way. But, especially where soil tests aren't in the high range, banding near the seed is more efficient on a pound-for-pound basis and is catching on again.

Today, banding also can mean deep banding or knifing in P or K, "dribbling" on the surface in wider bands which can be incorporated with a plow or disk. Band placement reduces contact between fertilizer and soil, which can be more efficient than broadcast applications.

"The deep knifing, dribbling on the surface and plowing it under where you have a rather high concentration deeper in the soil profile does have potential for us in South Dakota," says Paul Fixen. "Reason is the soil surface quite frequently dries out. Some of these placement alternatives are going to be more important in the future."

"Banding of phosphorus or nitrogen or both on winter wheat can be a risk-reducing factor," says Dr. Dave Kissel, Kansas State University agronomist. Banding with the seed can give the crop a fast boost in a cold, wet spring, especially on soils testing low in phosphorus. And the dual placement of both N and P preplant, 6 to 7 inches deep, will reduce risks if top soil later dries out.

A point to remember, however: banding tends to be more efficient; however reduced rates simply due to band placement may, in fact, jeopardize yields on a long-term basis. A high-producing crop will utilize a certain amount of nutrients regardless of placement. One must carefully consider efficiency and rates because high yields and reduced rates due to row placement can quickly "mine" soil nutrient reserves.

Final verdict isn't in yet on whether P and K need to be injected when using conservation tillage systems, say scientists. But it is certain these elements stay close to the surface if not injected.

Dr. Gyles Randall, University of Minnesota soil scientist, personally favors having the P and K test high in the top 8 to 10 inches of soil, especially in drier soil areas. "Skin-deep fertility is more risky under those conditions," he says. He also favors some band fertilizer for continuous corn and heavy residue situations in northern areas to insure that earlier "kick" under cold soil conditions.

"Placement is much more important when you're talking about a low soil test than when you're talking about a high soil test down to plow layer depth of the soil profile," adds Dr. Bob Hoeft, University of Illinois soil scientist.

Growers using conservation tillage can solve the problem of getting P and K

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deeper by using one of three methods, say Hoeft and Randall: 1) Moldboard plowing every few years after broadcasting fertilizer; 2) Using some row-placed starter fertilizer; 3) Injecting liquid, suspension and dry fertilizer materials or manure.

"In drier areas such as Nebraska, where nitrate nitrogen tests are offered, farmers need to go to deep sampling to reduce risks of over or under fertilizing of N, the most costly fertilizer input," says Robert Olson, University of Nebraska soil scientist. Probe a minimum of 2 feet, preferably 3 feet or deeper, Olson advises.

"Without this kind of testing, the farmer is either going to use less than he needs or more than he needs," Olson states. "So we consider this one of the critical items in reducing risk."

"Increasing fertilizer efficiency through soil tests is the big need," agrees Oklahoma's Billy Tucker. "There are just a lot of farmers not bothering to test their soils yet. And they're often using too much fertilizer, too little fertilizer or the wrong grade for the best profits."

One of the newest efficiency-boosting techniques for applying nitrogen on winter wheat in high-moisture areas of the eastern U.S. is splitting the application as is done in Europe, says Dr. Daniel Brann, Virginia Polytechnic Institute & State University.

"Splitting the nitrogen application in the spring reduces the risk of losing nitrogen through leaching and denitrification and boosts yields," Brann explains. "In our studies, we've gotten about a 10 bu/a yield increase by splitting nitrogen, with some going on in Growth Stage 3, in late winter, and the remainder near heading time."

Setting High Yield Goals Helps Control Risk

If you're not a goal setter, you'll never become a top achiever in anything. In short, you can't score a bulls-eye if you don't have a target.

Setting high yield goals is the first step to insuring high yields, and getting high yields is the best way to insure the profit zone that can keep you in black ink even if prices drop lower than expected. That's risk management at its finest, say crop scientists.

Yield goals force you to put your plans in writing, provide a basis for executing your plan and help you crystallize the input management to get you there.

Yield goals should challenge—yet be realistic enough to reach with good management. Top growers increase yield goals and actual yield levels a step at a time. "Inch by inch, anything is a cinch" is their realistic motto.

"Here's a revealing example of how higher yield goals can be your best risk management technique," says David Dibb, southeast director of the Potash & Phosphate Institute, Atlanta, GA.

Table 1. Corn production costs as yield goals increase.

Yield goal	Fert. rec.	Fert. cost	Total cost*	Cost/bu
bu/A	lb/A	$/A	$/A	$/bu
100	120-99-89	$51.74	$350.74	$3.51
110	132-103-92	54.65	356.65	3.24
120	144-106-95	57.57	362.57	3.02
130	156-110-98	60.48	368.48	2.83
140	168-113-101	63.39	374.39	2.67
150	180-117-104	66.30	380.30	2.54
160	192-121-106	69.21	386.21	2.41
170	204-124-109	72.13	392.13	2.31
180	216-128-112	75.04	398.04	2.21
190	228-131-115	77.95	403.95	2.13
200	240-135-118	80.86	409.86	2.05

*Total costs include an additional 30¢/bu to cover costs of harvesting, etc. the extra yield.

Table 2. Soybean production costs as yield goals increase.

Yield goal	Fert. rec.	Fert. cost	Total cost*	Cost/bu
bu/A	lb/A	$/A	$/A	$/bu
25	0-85-98	$34.54	$282.54	$11.30
30	0-89-106	36.63	286.13	9.54
35	0-94-113	38.73	289.73	8.28
40	0-98-121	40.82	293.32	7.33
45	0-103-128	42.91	296.91	6.60
50	0-107-136	45.01	300.51	6.01
55	0-111-144	47.10	304.10	5.53
60	0-116-151	49.19	307.69	5.13
65	0-120-159	51.29	311.29	4.79

Source: Potash and Phosphate Institute

"Increasing fertilizer efficiency through soil tests is the big need."

Top growers increase yield goals and actual yield levels a step at at time.

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"A doubling of the yield goal can be accomplished with a total investment increase of only about 7% for soybeans and 17% for corn."

Conservation tillage may just turn out to be the biggest agricultural risk reducer to ever come along.

"Minimum tillage is the first real transformation we've had in agriculture, as I see it, since introduction of fertilizer nitrogen."

Using typical Midwest inputs for a corn and soybean farm (central Illinois grower), Dibb illustrates how changing yields and prices can make a big difference in the risk picture. Expected selling price for corn: $3.25/bu; soybeans, $7.00/bu. Costs per-acre rise with yield, but here are per-bushel costs: 100 bu/a yield, $3.51 breakeven; 150 bu/a, $2.54/bu, 200 bu/a, $2.05. Soybeans: 25 bu/a, $11.30; 45 bu/a $6.60; 60 bu/a, $5.13.

"A doubling of the yield goal can be accomplished with a total investment increase of only about 7% for soybeans and 17% for corn," Dibb declares. "If doubling of yield can be accomplished, breakeven selling price is almost cut in half."

Sometimes weather reduces yield for even the best farmers. But, points out Dibb, if a farmer has a 120 bu/a yield goal, he can withstand a yield reduction of about only 8 bu/a before he starts to lose money. On the other hand, if a farmer has the capability, invests the extra money and management for a goal of 160 bu/a, he can withstand a drop of 41 bu/a before he drops out of the profit zone.

On that same yield example, if price drops more than expected, the 120 bu/a yield level farmer can only withstand a 23¢/bu drop and still break even. With the 160 bu/a yield, prices can drop 84¢/bu before he drops out of the profit zone.

"Cutting out needed inputs simply to limit the capital at risk or the amount of money a farmer has to lay out there will substantially increase the risk that the yield produced cannot be sold at a profit," concludes Dibb.

How New Farming Methods Are Helping

Conservation tillage may just turn out to be the biggest agricultural risk reducer to ever come along.

That's the evaluation of many scientists, even though they readily admit it takes sharper management to avoid potential extra risk, and that kinks need to be worked out for some situations before the system earns such high accolades.

Conservation tillage is any reduced form of tillage which leaves a substantial amount of crop residue or grass cover on the surface to reduce wind and water erosion and conserve moisture.

The practice, which has grown rapidly during the past few years with the coming of high diesel costs and interest rates, has the potential to save time, cut costs, conserve moisture and—most critical in the long-run—conserve soil, say scientists.

"Minimum tillage is the first real transformation we've had in agriculture, as I see it, since introduction of fertilizer nitrogen," declares Robert Olson, University of Nebraska.

"With all the demands that exist costwise and energywise to the farmer, this practice is important for its potential to cut costs," Olson adds. "It also provides the best erosion control measure that the farmer has accessible to him, especially on sloping land. With some management changes, there's no reason to take any yield loss either, and in some cases it can better the yields."

At the North Platte Station, Nebraska, scientists find up to a couple of extra inches of moisture can be stored with this method as opposed to conventional tillage. That can make a big difference in July and August. It can change the percentage of moisture stored from the 20 to 25% which is usual for conventional tillage, to the 40 to 50% with reduced tillage where soil isn't stirred at all, says Olson.

"The jury is still out on conservation tillage overall in the Western Plains," adds Billy Tucker, Oklahoma. "But if you find ways of making the practice work really well, it has the potential for doing more for agriculture than most anything you can think of because of reduced erosion and moisture conservation."

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Soil conservation per se doesn't excite farmers enough to want to change, but neglecting it could be "absolutely the most risky thing a farmer could do, long-run," adds Kansas agronomist Dave Kissel.

Weed control, especially in more arid areas, is the biggest challenge with conservation tillage, say these scientists. It takes the newer equipment to handle the residue, too. But innovative farmers are making some form of conservation tillage work in all parts of the U.S. Look before you leap by checking with a farmer who is already making it work well, and with state research and extension personnel. That'll give you your best shot to manage your risks and gain the benefits with conservation tillage.

An important point to remember: those same production inputs and management practices that conserve our soil, water and natural resources are the same ones that help to achieve maximum economic yields.

Irrigation

Irrigation, though costly, has been one of the premier crop risk reducers for years, in situations where it fits.

Skyrocketing energy costs, and water problems in some places, have blemished that track record in recent years. But new energy conservation techniques, starting with low-pressure sprinkler systems, have again made irrigation a more attractive risk reducer on some soils and where pumping costs aren't too high.

It fits best on sandy or coarse-textured soils, drouthy, heavier soils underlain with a fragipan (a layer of naturally-occurring dense soil through which moisture doesn't readily penetrate) or in arid areas where quality water is available at reasonable cost.

Those rules apply in the midwest, east coast, southeast, southern and more arid western areas like Texas, Kansas, the Dakotas and Nebraska.

Space limitations preclude an in-depth discussion of this complex subject. But if moisture shortages affect your yields more years than not, it'll pay you to dig into irrigation possibilities, even in states like Illinois, say agronomists.

"If you're able to irrigate, you can also incorporate higher levels of management in several other input areas, which add to total costs but cut risk and produce greater net return in the long-run," says John Peverly, University of Illinois irrigation specialist.

"In most cases, we're needing from 40 to 60 extra bushels of corn and 18 to 20 bushels of beans under Illinois conditions to cover the cost of putting in an irrigation system," adds Duane Erickson, U of I ag economist. "And in most situations where moisture is a yield-limiting factor, we have been able to justify the investment, where we have adequate underground water supplies."

Most growers who have irrigation systems look at the investment as a form of insurance to provide uniform yields and income from their farm. In short, average per-acre net involved may be less, but it assures a crop and income to meet cash flow and living expenses every year—something that keeps lenders much easier to deal with.

Without an investment in irrigation, some lenders today won't even finance farmers on land where moisture risk is generally high and yield limited.

Good Labor Management Lowers Risk

Ask any larger-scale farmer what his biggest challenge is, and he'll tell you quickly. It's managing and inspiring people, not raising crops or livestock.

No experienced farmer needs to be told that high-quality employees, or family help for that matter, can cut his repair bills, increase timeliness of operation and make

If moisture shortages effect your yields more years than not, it'll pay you to dig into irrigation possibilities, even in states like Illinois.

Innovative farmers are making some form of conservation tillage work in all parts of the U.S.

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farming more fun and profitable. Or that lower quality in employees can cause the opposite.

So how do you find and then keep those high-quality people on your team?

In a nutshell, management consultants suggest:

- Interviewing people more carefully. Ask more questions about their background, qualifications, attitudes and goals.
- Selecting from a wider pool of talent. Check with university or "tech" schools for graduates with training that'll fit your area. Try using magazine ads, also.
- Offering some kind of incentive program—a "piece of the action" so to speak—rather than straight wages. And remember, you usually get what you pay for. A cheap employee may turn out to be the most expensive one you hire.
- Making sure the bonuses or incentives are tied to specific factors to reward excellence, or they won't accomplish much. Results have to be easily measured, and the employee has to have definite control over the results. So plans based on year-end profit, over which the employee may have little control due to prices, for example, won't excite him or her.
- Figuring out a non-economic program to provide the "ego strokes" that everyone needs. It's no substitute for money, but for many people a little praise and appreciation can be equally important to performance levels.

A cheap employee may turn out to be the most expensive one

Here are some key factors in motivating people that you'll want to keep in mind:

1) Communicate clearly and frequently on a two-way basis. Ask an employee or family member for his or her ideas.
2) Appeal to pride. Praise good performance, letting them know their performance is superior to the average.
3) Praise good performance in front of everybody, but praise the act of performance, not the person per se if other employees or family members are involved. Otherwise the praise can cause more problems than it solves.
4) Critique or criticize an employee or family member strictly in private. Tell him or her that "we have a problem," and you need their help to solve it.
5) Listen to people intently. It's a big compliment because they feel you're actually interested in what they have to say.
6) Use their names as often as possible. They'll love you for it—even more than they'll admit.
7) Use words they like to hear. They include "you" and "your." It'll get you a lot farther than a lot of "I," "my," "me" or "mine."

Communicate clearly and frequently on a two-way basis.

Such management techniques can make a big difference in performance today, warn management specialists, because the day of the "big boss" management approach is over. Motivation through fear simply won't get results that it did a decade or so ago.

Motivation through fear simply won't get results.

CHAPTER 2
Risk Management in Financial Planning

New Agriculture Era Demands New Rule Book

The hammer has dropped. The rule book for farming has changed—timed almost perfectly with the start of the decade of the 1980s.

Those farmers who fail to recognize that dramatic switch, in which risk management will become critical, likely will be listing a new occupation on their tax forms in a short time.

That's the warning bell being sounded by most financial experts who have earned a reputation in this high-stakes game of agricultural finance planning.

Inflation, fluctuating interest rates, high energy costs, and yo-yo commodity prices have all teamed up to produce the drastic changes, say financial experts.

"The agricultural sector has entered a third major era—namely a financial and business revolution," declares Dr. John Gamble, agricultural economist for First Alabama Bancshares, Inc. of Montgomery.

"The rule book has changed for agriculture," adds Dr. Michael Boehlje, noted Iowa State University (ISU) finance specialist. "The business of farming is complex enough without having to cope with changes in the 'rules of the game.' But managing with an outdated rule book can be disastrous."

Marty Thronton, vice president and senior farm manager of Peoples Bank of Bloomington, IL, sums up the importance of risk management in the 1980s in just one word—"survival."

Just how much the financial ballgame has changed is driven home in these eye-popping statistics from Boehlje: In the '60s, debt-to-income ratio in agriculture averaged 2-3 to 1. In the '70s, the ratio went to 4-5 to 1—almost doubled. Now the ratio is almost 10 to 1.

"This rising debt-to-income ratio means that farmers must commit more of their future income to debt servicing," Boehlje reminds. "Thus less income will be available for expansion and reinvestment in the farm or for an improved standard of living."

Boehlje feels high interest rates—a lot of money borrowed in the 13 to 15% range—will continue most of the decade of the '80s. There'll be "opportunities" to borrow money at much higher rates, and he doesn't expect farmers will see much money at 10% or less. The finance specialist offers these "survival tactics" for the tougher short-run swings during the '80s:

- Understand the difference between cash flow and profit. Cash flow is a short-run concept, profit a long-run concept. For heavily leveraged farmers, price-per-unit of production needed to cover cash flow in the early stages may be substantially higher than the long-run, break-even price needed for profitable operations.
- Emphasize cost control and efficiency rather than volume. The go-go volume and growth strategy of the '70s will fail in the '80s.
- Lock in reasonable profit when available as risk insurance.
- Insure against risk if you're leveraged—in property and casualty, crops, government programs and life insurance areas.

Is this financial specialist totally pessimistic about farming's future? In a word, "no." He's only cautious about the next few years.

"If you understand the new rules, manage with a focus on risk control, fine-tune your financial management and focus on being efficient rather than big, you will have the opportunity to make money in the years ahead," Boehlje assures.

Bank economist Gamble agrees that long-run opportunities in agriculture will be excellent. But, he warns, steps need to be taken now to assure being in

Those farmers who fail to recognize that dramatic switch, in which risk management will become critical, likely will be listing a new occupation on their tax forms in a short time.

"The rule book has changed for agriculture..."

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the game then.

"All of us, lenders included, must work together to gain control of our production, marketing and finance abilities so we can stop this foolishness of running out of control and seemingly always betting on the come," Gamble cautions. "All of us should turn our attention to the 'net' rather than 'gross' dollar concept. Cash flow is the name of the game now."

He offers these risk management tips for the balance of the '80s:

- Start with an economically-feasible game plan that "makes sense, not 'non-sense.'"
- Take a hard look at your resource base to be sure you're capitalizing on the right crops or livestock for your particular area or specific land base.
- Go cautious on future expansion. If you decide to expand, do it within your capital structure—not outside of it.
- Develop a total plan that includes financing decisions with contingency plans in place to handle the unexpected.
- Consider your total debt, not just operating loans, as has been a common practice in the past. Lenders will be turning that direction, if they haven't already, Gamble predicts.

Farmers need to remember that they're really becoming no different than any non-agricultural business or corporate situation.

Minimize Risk With a Long-Range Farm Plan

Playing the farming game in the near future without a long-range plan will be like playing Russian Roulette—only with a fully-loaded gun.

"Without a long-range plan it's very difficult to know where you're going," declares Richard Bonewitz, first vice president of Indiana National Bank, Indianapolis, IN. "The plan should be written down, too, not just in your head.

"One of the first things to do," Bonewitz adds, "is to determine where you are today, and where you want to go. Then that plan is definitely going to help you figure out how to get there. That has become particularly important today in the financial area because of what we've been through in the last few years."

"One of the first things to do is to determine where you are today, and where you want to go..."

Most farmers, even those who do have written plans, don't look beyond the current year, says Bonewitz. And in making the plans, they often fall victim to a pitfall called "greed."

"One of the biggest pitfalls we encounter is being overly aggressive and not making allowance for the possibility of a problem coming up—always having our 'blue sky glasses' on," Bonewitz adds.

Farmers need to remember that they're really becoming no different than any non-agricultural business or corporate situation, cautions Marty Thornton, Peoples Bank of Bloomington, IL.

"You're only going to hit goals if you set them." Thornton challenges. "That's an iron-clad success principle. And to be financially sound, you're going to have to set some one-year goals and some five-year goals, and then examine strategies as to how you're going to get there.

"Most farmers have long-range goals that are less than six months, and they frequently aren't written down either," Thornton continues. "This goal technique hasn't been used much in agriculture yet, but you're never going to achieve more than the goals you set. You just don't. You just sort of fritter your opportunities away if you aren't careful."

Alabama economist, John Gamble, is succinct and forthright about the necessity for a long-range plan: "Simply to do a job out there on the farm, without a game plan, has got to cease... to avoid a debt structure that will throw a lot of people into chaos."

Michael Boehlje, ISU finance specialist, sees more and more of the sharper farmers planning for the next 12 months using seasonal cash flows. That's good. But it

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needs to be extended.

"We feel they should be developing a longer three to five-year horizon as well as using annualized budgeting," Boehlje urges. "It's also important to do contingency planning. We're a little concerned when we see a farmer develop a single plan that has not built in alternative options which could be needed in situations that could occur."

In making plans, particularly short-run plans which will impact on the long-run plan, the finance specialist suggests putting together three scenarios for cash flow budgeting for the next 12 months. A farmer should put together an expected situation, a pessimistic situation and an optimistic situation, so he'll be prepared for any outcome without having to make new, hasty plans.

"Use conservative estimates," Boehlje cautions. "We worry about situations where they not only use optimistic price expectations but optimistic yield expectations as well."

What's The Best Farm Business Arrangement?

Without being foolish at all, the answer to that question is as individualized as asking three men what makes a woman beautiful.

So say financial and management specialists.

"I don't know that there is one best business organization for a farmer," says Richard Bonewitz, Indiana National Bank. "I believe it varies with situation . . how many people are involved, size of the operation and financial status to name a few circumstances."

Illinois farm manager Marty Thornton thinks the choice of single proprietorship, partnership or Subchapter S corporation should be tied somewhat to your goals.

Long-range goals could be to bring in several family members, possibly some not participating in the operation or bring in non-family members; to transfer property among family members; to sell the farm out after a certain time period; to manage high-income volume from a standpoint of tax consequences.

"I think you could build a case for any of these business entities very easily when you find out what the long-range goals are," Thornton declares.

One of the most commonly heard benefits of incorporation is the so-called limited liability feature for Subchapter S corporations for farmers. Ideally, that protects personal assets, such as home or car, etc., from being taken in a lawsuit or bankruptcy. ISU finance specialist Michael Boehlje prefers that be called an "alleged" advantage.

In practice, most farmers "throw everything they can" into the corporation to get tax deductions. So they obliterate that supposed advantage. Properly set up, a corporation can provide the limited liability feature, Boehlje reminds.

A comparison of the three types of business entities is far too complex to accomplish in these pages. But if you're "chewing on the idea" of leaving a sole proprietorship or partnership for a corporation, check with your state extension service office for booklets and/or your attorney or financial counselor if they have expertise in that area.

How Much Can You Afford To Borrow?

You can afford to borrow more in good economic times than in poor economic times. The trap that many farmers fell into was to think those good economic times of the '70s would last forever.

So what are the economic "red flags" you ought to watch for and heed in your borrowing?

A farmer should put together an expected situation, a pessimistic situation and an optimistic situation . . .

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"In the current economic environment, we have noted that farm businesses which have much over 35 to 40% debt-to-asset ratios are encountering cash flow problems," notes ISU's Michael Boehlje.

"That doesn't mean they can't borrow more than that in better times," Boehlje adds, "or that they can't restructure their debt so more of it is long-term, but when we see a leverage position of 40%-plus today, that's when inabilities to service debt problems start to show up. He might be able to handle a 50% debt ratio in good times but only 25 to 30% in tight times."

Richard Bonewitz, Indiana National Bank, has his own figures, which vary with situation of course, but in general agree with Boehlje.

"Currently, when you start approaching that one-to-one, or 50% level, you see some difficulties develop," Bonewitz says. "The problem that often enters is a greed factor that pushes one toward higher risk.

"It's sort of 'if I'm okay at 50%, I'll push to 60'," adds the finance specialist. "Then things can change, and he'll wish he were at 20% and can't get there. Once you're committed, you can't get back out overnight."

To answer the "how much can I borrow" question, Illinois farm manager Marty Thornton, reminds that there is a whole host of banking formulas to apply. But, a simple starting point would be this. Figure how much debt you can cash-flow with today's prices and your projected prices and then build in a "fudge" factor. Ask yourself what would happen if you had a 25% drop in gross income due to weather or prices moving against you. Could you still cash-flow it?

"Don't use too optimistic income projections, a common problem." Thornton warns. "Wishful thinking and betting on higher prices to justify your desired plan of attack, as opposed to what the situation really is, can get you in trouble. In my opinion, you have to discount your assumptions along the line somewhere to give yourself a safety margin for survival in the agriculture of the 1980s.

"In assessing your risk-bearing ability," Thornton concludes, "you should be able to sleep at nights. If you wake up thinking about it, it's more risk than you can handle."

Figure how much debt you can cash-flow with today's prices and your projected prices and then build in a "fudge" factor.

"To buy land you have to demonstrate capacity to perform with a little slippage figured in there, too."

Sharing Risk Through Leasing or Renting

Deep down inside himself every red-blooded farmer wants to own his own land—a "piece of ground" he can stand in the middle of and call his own.

Nothing wrong with that dream. Despite temporary dips, long-term land prices have steadily increased because "there ain't no more land being made," point out proponents of the "own your own" philosophy.

The fact that farmers, especially younger, more heavily-leveraged farmers, need to remember is that the mid-1980s may not be the time to take the plunge.

"It's still far cheaper to rent, at least in the southeast, than it is to own land with rental rates what they are," says John Gamble of First Alabama Bancshares. "To buy land you have to demonstrate capacity to perform with a little slippage figured in there, too."

Richard Bonewitz, Indiana National Bank, agrees that leasing or renting can lower the risk equation in today's economic climate.

"That way, if things don't work out as planned, you can walk away from it and not be tied into a fixed debt payment for the next 30 years, or something that you can't service in the short-run," Bonewitz explains. "So I think that's a good way to build some flexibility into your operation and reduce risk, especially in these high

risk times."

Tax consequences of renting versus buying need to be taken into consideration, adds Marty Thornton, Peoples Bank of Bloomington. Cash flow needs to be considered, as does balancing short-term income versus long-term appreciation. For those meeting the cash-flow and asset criteria, there's no denying that there is a certain satisfaction in owning land, Thornton points out.

The ultimate in risk sharing, of course, is the share crop lease, notes Michael Boehlje. That's getting the big play since those "good old days" of the '70s evaporated. That's when the seemingly insatiable appetite for land made cash rent the king in many areas.

"Cash rent makes the land operator the full risk taker," says the ISU finance specialist. "So recently we see interest from some farmers in going to various types of crop-share rental arrangements as one possibility to share the risk between landlord and tenant."

Problem with these simple crop share rental arrangements, according to Boehlje, is that some landlords don't want to be responsible for providing the inputs and come up with the cash to do so.

So another way to share the risk is through what is called flexible or variable cash leases. In these arrangements, cash rental payment is tied either to yield or price. As yield or price increases or decreases, the cash rental fee goes up or down accordingly. Frequently, those leases involve some base payment, plus the flexible payment factor on top.

"This reduces the risk exposure of the tenant and, at the same time, it enables the landlord to obtain some higher profit potential in good years," Boehlje explains.

Rental arrangements seem to vary by geographic area in states. But interest in the latest cash rent method—the rental auction where land is put up for bid on a cash rent basis—has "cooled down" since 1981, when things started to get a little on the "tough side."

What To Expect From a Lender and Vice Versa

The day of the simple "I'll handle it all myself" approach is over in agriculture—or should be, say management specialists. Today's agriculture calls for more of the team approach used by industry.

That doesn't mean a farmer can't still pretty much "be his own man." It does mean nobody can know everything about production, marketing and financing in today's complex, risk-laden world. So a farmer needs advisory members on his "management team."

"What the borrower needs to expect from his lender is someone who, first of all, has an understanding of agriculture and a commitment to it and is going to be there in good times as well as bad so long as the farmer does his part on the management end," says Richard Bonewitz of Indiana National Bank. "A good example is the bad times we've just been through and are hopefully coming out of now."

Today's farmer should expect some expertise from his banker to help in financial management, not somebody who is simply going to approve a loan and put dollars into the borrower's checking account.

"A farmer should expect someone who can be a financial partner, so-to-speak, in the business," Bonewitz declares. "Farmers should be able to look at the banker as a partner on the management team just as they do their CPA and their attorney."

Teamwork implies a two-way street of communication, and because size of loans is so much greater today lenders obviously want to avoid ulcers by eliminating as much miscalculation and risk as possible.

"Expect your lender to ask you more questions as they relate to your goals and your planning process, especially where

"Cash rent makes the land operator the full risk taker."

"What the borrower needs to expect from his lender is someone who, first of all, has an understanding of agriculture..."

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"Expect your lender to get a little more personal than he has in the past because he's got a lot more at stake."

"Take a real objective look at the qualification of the lender and of yourself in the finance area."

"These people are often cut out when economics are tight and margins get closer..."

you want to be farther down the road," says Marty Thornton.

"Expect your lender to get a little more personal than he has in the past because he's got a lot more at stake," the banker says. "Look for him to be less willing to lock himself into such long terms as he used to do."

Thornton and other top lenders agree with Bonewitz that a farmer should expect agricultural finance and risk management expertise from his lender as well as commitment to agriculture.

On the other side of the coin, lenders will expect more from farmers.

"Your lender is going to expect you to look for more ways to minimize your risk," Thornton declares. "He's going to expect a farmer to look for more ways to take a decent profit, or to cut losses short in those times when there isn't an opportunity to lock in a profit. He's not going to be as willing to let you shoot the dice."

Bonewitz seconds that planning aspect that lenders will be looking for, such as cash-flows on an annual basis, the overall business and financial plan and goals and objectives.

"We need to know he has a plan and has some idea of where he's headed and how he's planning to get there," Bonewitz says. "Planning helps to manage risk. You can't avoid all risk, but you can manage some aspects of it."

Lenders will look even beyond documentation a farmer should provide to make a sound decision and "sell" his credit worthiness, says Michael Boehlje. This documentation includes such things as net-worth statement, repayment ability, profit-making track record, cash-flow budgets.

"Lenders will also want to document, in some fashion, a farmer's awareness of risk, making sure he has the mental or psychological capacity to handle risk, looking at the entire area of risk-bearing ability," the ISU economist concludes.

When Do You Bring In a Paid Consultant?

That's a slightly touchy question in the financial area, obviously, because sharp lenders are going to feel that's their responsibility.

Nevertheless, the idea of hiring paid consultants is catching on in the production area as operation size and management loads increase. And it also has a place, in some cases, in the finance areas, agree some lenders and finance experts.

"First question you need to ask yourself is 'what is the magnitude of my business and what resources have I got in terms of people I'm already working with," says Illinois banker Marty Thornton. "Take a real objective look at the qualification of the lender and of yourself in the finance area. If one or the other is lacking in that area, then a consultant may be in order."

Thornton warns that you ought to consult the lender and ask his opinion in order to get his cooperation before bringing in an outside consultant, whether it's your accountant or whomever. Otherwise the move could prove counterproductive.

"In essence, you're building a three-way marriage, and if it isn't compatible, you're just throwing money down a rat hole," Thornton warns. "If you can harness the ability of a good CPA who understands the farm business, for example, it could prove a good bet. I think we will see more of this as we get into larger operations.

"These people are often cut out when economics are tight and margins get closer," Thornton adds, "but that's when you really need them to pick up that little extra here or there that can be saved or earned."

Michael Boehlje, ISU, sees financial consultants being brought in more frequently today. That's especially the case when a specific expansion project is being evaluated. This is clearly a situation where a financial consultant can play a very

important role, Boehlje says. They can also be helpful where there is financial pressure from lenders encouraging liquidation or restructuring a business.

"Interest in consultants is increasing because it's being recognized that the successful manager today needs production, marketing and financial capabilities to make decisions in all three areas," Boehlje reminds. "And it's pretty difficult for one person to do all three very well, either because of time or knowledge limitations."

"Interest in consultants is increasing because it's being recognized that the successful manager today needs production, marketing and financial capabilities to make decisions in all three areas."

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The Critical Need To Master Greed

Greed. It's an ugly word. But let it burn into your mind.

Why? Because it's the single biggest culprit when it comes to farmers ending up with "egg on their face" in pricing their crops, say marketing specialists.

We all have a little of it in us, some more than others. It's written into the law of human nature.

The greed factor wasn't such a critical one before the new era of yo-yo crop prices. Today the market produces wider swings in a month-or-two period than was seen over several years in the days of $1.10/bu corn.

In today's environment, smarter marketing—which means disciplining greed as one factor—can mean the difference between Hawaiian vacations in winter and "just making it," even if you're a reasonably good crop producer.

Sound alarming? You bet. An overstatement? Hardly. We always hear about the farmer who sold at the market high. But consider this: Most grain sold is sold in the lower one-third of the market price range.

Here's the irony: If you did nothing more than sell part of your crops every month, you would move into the upper half of the yearly selling price range, say market analysts at Professional Farmers of America, a nationally-respected commodity advisory service.

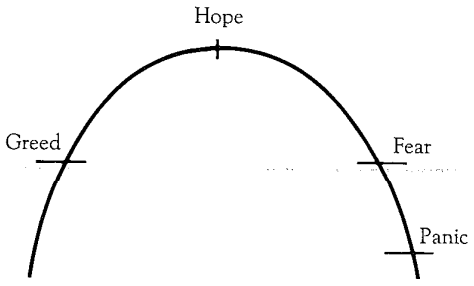
Your goal as a business-minded, risk-managing farmer ought to be to price your crop in the upper one-third of the selling range. It would easily add $10,000 or more to your net profit in a not-too-large operation, say Pro-Farmer analysts.

First, one needs to understand that only "fools" and speculators try to pick only the price top out of the marketing year. The odds for your success are poor to none.

In short, that old sage who first said, "You can't go broke taking a profit," was a smart fellow.

Even more sophisticated marketers readily admit that discipline to stick with predetermined plans and goals, mostly because of the inherent greed factor in all of us, is the biggest problem they fight.

Here's a diagram to help you remember the "traps" and thought process that the typical marketer goes through. That's true whether marketing out of his own bins in a straight cash sale, using forward pricing or using the futures market.



Source: Professional Farmers of America

In other words, often as the price moves up, we start getting excited and greed sets in. We hope and hold for more as the price trend flattens out. It drops lower, and fear that it will go to the bottom for good this year sets in. So we panic and sell before it goes lower—and before the market turns up again, which it surely will.

The starting point for higher profits from marketing starts with knowing your unit production costs and developing a written marketing plan, with contingencies built in. Then you need to consider all of a farmer's marketing alternatives—not just the cash market or a forward contract, the two choices most farmers are familiar with and use.

In today's environment, smarter marketing—which means disciplining greed as one factor—can mean the difference between Hawaiian vacations in winter and "just making it."

If you did nothing more than sell part of your crops every month, you would move into the upper half of the yearly selling price range.

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"I'm a firm believer that in our part of the country, and probably most of the U.S., a farmer in the near future is going to have to be much more like the corporate decision maker," declares Stan Herren, vice president of Agri-Business, Deposit Guaranty National Bank of Jackson, MS.

"To minimize risk, he's going to have to make marketing decisions that require him to use the total range of alternatives and flexibility of the market place. Whatever it is out there that offers him the best deal at that point in time, he's going to have to use it.

"He's got to be knowledgeable in futures contracts, forward contracts, basis contracts and even something new that's just coming on stream, and that's commodity options," Herren adds. "It'll be just one more tool that's available."

"He's got to be knowledgeable in futures contracts, forward contracts, basis contracts and even something new that's just coming on stream, and that's commodity options."

Marty Thornton, Bloomington, IL, farm manager-banker, agrees. He feels that earning those alternatives, or paying somebody to do your marketing, could mean the difference of farming or going under in the next few years.

"I think that those who don't learn to use all the marketing tools available effectively, including hedging in the futures market when applicable, are going to be sorted out," Thornton declares.

"I think that those who don't learn to use all the marketing tools available effectively, including hedging in the futures market when applicable, are going to be sorted out."

Most farmers who fear the futures market have heard the tales about the farmer who "lost the farm"—and don't understand it. It's human nature to shun what we don't understand. If understood, and properly used, however, the futures market, in many years, is one of the very best tools available to transfer risk or reduce price risk. But, if you don't understand it, don't go to the broker and just "jump in."

"It's like many other things," says John Gamble. "A little bit of knowledge makes it very dangerous."

First step to take if you aren't knowledgeable about futures is to go to a beginner's seminar for "hedgers" this winter, put on by a private company or possibly your state university. If you don't know a farmer who successfully uses futures, ask your county agent or lender, or look for ads in farm magazines. Several firms offer books or booklets on the subject.

Attending those seminars, where you can ask about things you don't understand and studying books written especially for farmers, could be the best time investment you'll make this winter—or any winter!

How and When to Use Price-Setting Techniques

Knowing when to pull the "price trigger" on your crop sales is one of the most difficult decisions farmers make all year. And one far too many farmers make unsuccessfully.

Starting point to optimize marketing profits, and manage or reduce risks, is to develop a marketing plan . . . a written marketing plan. Then tell somebody about it, advise some marketing specialists. It'll help keep you "honest" when temptations arise.

"In effectively managing risk, you absolutely have to have a formal marketing plan, and most farmers don't," says Marty Thornton, Bloomington, IL, farm management specialist. "In that plan, the time element should be at an 18 to 24-month period over which to market your crop. Don't deviate from this plan unless conditions have drastically changed from the time you designed it, as in the case of the 1983 drought."

Your aim should be to develop a plan that will increase the *average* price you sell all your grain at—not to try to pick out only the top of the market. That's really speculating.

If you *must* speculate, do it with only a small portion of your production, whether

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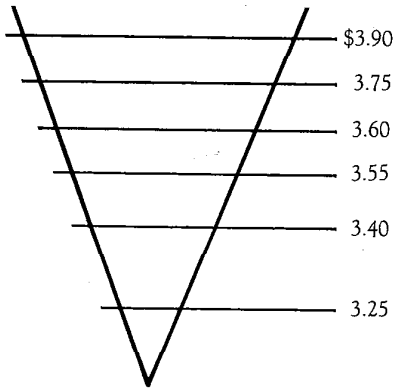
it's grain held in storage for a possible run-up in the cash market, or taking a position in the futures market. Speculate, if ever, only after your production costs and living expenses are covered, warn many marketing specialists. Others feel speculation is justified when evidence is overwhelming that additional down-side risk is limited—for example, if prices are at the government support level.

To develop your marketing plan, you'll need information on the "fundamentals"—information about supply and use of the crop, typical price patterns and localized differences that normally occur. Good sources include USDA reports, state universities, farm publications and market information advisory services, all which help put raw information in perspective.

Next, determine your production costs (see section on records), so you know where your breakeven point is and where potential profit starts. Now set an overall price target that will meet your profit goals, if opportunity exists for a profit, which is not always the case. In that instance, you should reduce your risk by trying to lock in lower losses, rather than just riding along and hoping for the best.

Safest, and probably the most widely recommended approach to carrying out your marketing plan in a rising market, is to use the "scale-up" procedures. In a scale-up program, you sell more bushels than the time before each time the price moves, say, 15¢/bu for corn, or 50¢/bu for soybeans (in a falling market, use the opposite strategy).

In a scale-up strategy, it takes strong discipline and sticking to your plan to avoid the trap of greed. But it's a scientifically-sound way to get you there. Following is an example of an inverted pyramid scale-up plan that could apply to potential corn price prospects. Subtract local basis for cash-bid equivalent.



Inverted Pyramid Scale-up Plan: Professional Farmers of America.

"It is possible that prices may go higher after your price targets or goals have been reached, and some additional profit that could have been made will be foregone," admits Michael Boehlje, Iowa state ag economist. "But in this period of higher risk agriculture, profit opportunities should be exploited when they occur. It is difficult to go broke taking a guaranteed profit."

It is only that successful middle-aged or older producer, one with little or no long-term debt and low leverage in short-term debt, who can afford to keep his own risk and shoot for those highest prices, rather than transfer price risk to someone else, say financial and marketing specialists.

Often, however, they remember and talk about the high price they got by holding even into the next marketing year, but forget to account for their storage costs, which continue to mount.

To become a complete marketer, one needs to understand the fundamental or supply-demand facts that affect the market and also the technical side of the market. That gets into the psychology of what market traders think of those fundamental factors.

This means you need to become familiar

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with commodity price charts, and/or you need to buy market expertise through a market advisory service or two. They'll interpret price charts and other factors and provide specific marketing advice, and some offer to do your total marketing for a fee rather than only give advice.

Many top market advisory specialists recommend you use their advice as input, then make your own price decisions based on your particular set of circumstances. Any decision that important should be made by the "boss"—you!

Chart Formations— Your Risk-Reducing Price Triggers

Commodity price charts can be your marketing "roadmap." And the chart formations, or "pictures," your pricing trigger. They can provide you with short-term, risk-setting guidelines to help keep you out of red ink.

Charting is a pricing tool which provides definite signals that aren't based on your emotions . . . greed, hope, fear, panic. The chart formations provide cues to help you more effectively time your sales or purchases for greater profit.

A word of caution: interpretation of what charts are telling you is more of an "art" than a science, remind veteran chartists. It'll markedly improve your odds. But it's not 100% accurate in predicting timing or extent of price moves.

You can't become an expert chartist by reading one article or book, or attending one charting seminar, more than you could become a doctor by reading one book. But you can pick up the basics and go on from there.

There are several kinds of price charts, but the most commonly used is a bar chart. It provides the daily or weekly futures price of a commodity contract at a central market.

The solid vertical lines, or bars, indicate each day's trading range by connecting the highest and lowest price paid each day. A small horizontal "tick mark" crosses the solid vertical line to indicate the price at trading session's close.

You can develop your own price charts based on quotations from the radio or newspapers, or subscribe to a charting service for roughly $300 per year.

Main use of a price chart is to determine trends, either up, down or sideways. To put charts to work, if you're keeping your own, draw trend lines with a straight edge or ruler. Draw up-trend lines by connecting two or more lows. Preferably those lows should be at least 15 to 20 trading days apart. Similarly, to draw down-trend lines, connect two or more highs, which signal market resistance.

Consider a trend ended when prices "violate" the trend line by crossing it. More specifically, consider direction changed with two consecutive market closes below an up-trend or two consecutive closes above a down-trend line. Caution: very steep trend lines, that is much steeper than 45 degrees from horizontal, become invalid in runaway markets.

To interpret specific market cues on price charts, you need to recognize chart formations and what they mean. Here are just a few important ones to recognize, for starters, along with thumb rules from Pro Farmer chartists and others. The illustrations are "classic" artist versions. On actual charts, formations will generally be less perfect and will be a little more difficult to spot. So practice.

Head-and-shoulder top or bottom: This frequently seen chart formation is regarded by the "pros" as one of the most reliable. It boasts about 70% reliability in correctly predicting distance of the next price move.

The formation, which resembles the head and shoulders of a person, may signal

either a major market top, or if it is inverted or "standing on its head," a bottom. It signals strong price moves either up or down.

In projecting distance of a predicted price move, measure distance from neckline to the top of the head. At least with 70% reliability, prices can be expected to move that far in the opposite direction.

It doesn't predict timing of a price move. But as a rule of thumb, sell when the second shoulder is completed on a head-and-shoulder top.

Double tops and bottoms: At the point where prices move to equal an earlier high, which is a resistance area, a double top is formed. Conversely, when the second move downward equals an earlier low, it indicates a support area, or a double bottom. Double tops frequently appear on soybean charts. Triple tops or bottoms also are seen.

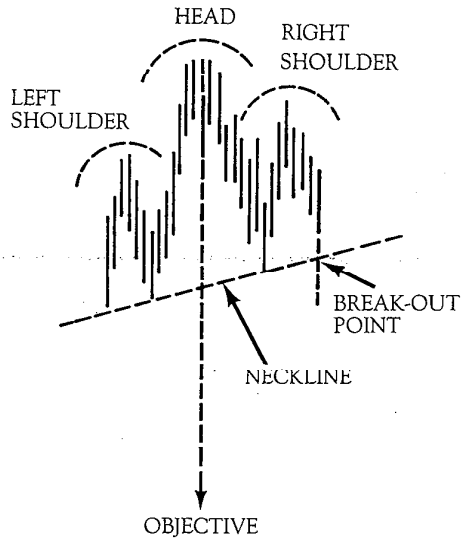
As a rule of thumb, when you see a contract hitting the same price area a second or third time, but failing to exceed it, it generally spells a good selling opportunity. What the chart formation is saying is that particular price move up has "run out of gas." A significant price reduction is due. If a farmer hedger acts on that warning with dispatch, it could add thousands of dollars to his crop sales for the year.

Key reversal: Both price tops and bottoms are also red-flagged by this formation. It's the climax of either a buying or a selling spree in the market. As the name indicates, it dramatically signals the end of a price move.

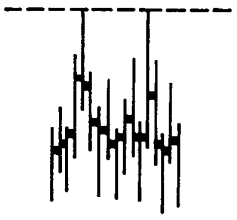
"Reliable" key reversals are formed on high trading volume days. So they characteristically plot an extremely wide trading range. A key reversal is formed in an up-trend when prices set a higher high than the previous day and a lower low, with a close significantly lower—near the bottom of the day's trading range.

Key reversals are indicators that the near-term top (or bottom) of the market has been reached and that prices will rally (or decline) in the near future. On average, key reversals have about an 85% reliability in predicting the end of a price move.

These are just a few basics of charting. Master them, then get yourself a good book on charting and attend a series of charting seminars. It'll help you smile about your market record rather than complain about your "bad breaks."



Head and shoulder top. Trading volume low in neckline. If price breaks and closes below neckline, expect move down equal vertical distance from top of head to the neckline.

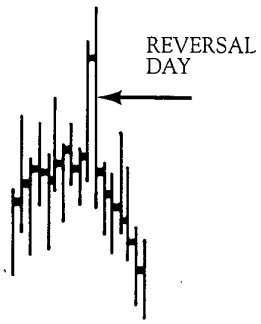


Double top. Second move up to the level attained earlier fails. Can also have triple tops.

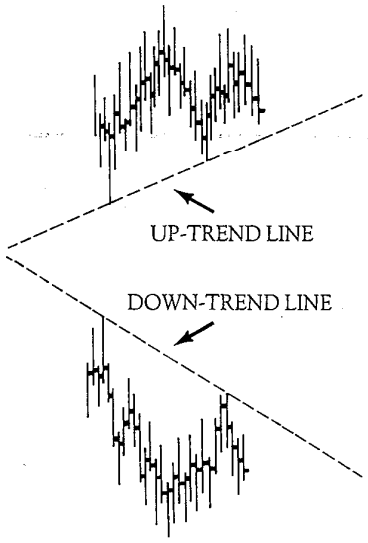
CHAPTER 3
Managing Risk In The Market Place

Trying to do a good job of marketing without knowing your production costs is like trying to drive your pickup truck with no tires.

"Once you have established your normal cost of production, then you know what price levels you've got to get to cover your fixed and variable costs..."



A key reversal. Trades to new high, back below the low of the previous day, and then closes significantly lower.



Rules:
(1) Not much steeper than 45°
(2) Prefer two points at least 15-20 trading days apart

Direction changes when market closes two consecutive days below an up-trend or two consecutive days above a down-trend.

Crop Enterprise Records —What You Need to Keep Up in Today's Economy

Trying to do a good job of marketing without knowing your production costs is like trying to drive your pickup truck with no tires. Yet many farmers can't tell you within 50¢/bu what their costs are.

"You cannot do a competent marketing job unless you know your cost of production —period," declares Stan Herren, Deposit Guaranty National Bank, Jackson, MS.

"That is the basic premise of marketing," Herren adds. "Once you have established your normal cost of production, then you know what price levels you've got to get to cover your fixed and variable costs and produce a decent return on your investment. Once you know your production costs, you can operate more in the realm of science rather than in terms of taking unneeded risks by not knowing."

What about those times when prices all year are too low to offer you a profit?

Production costs are then used to determine where your losses start and to limit your losses as close to breakeven as possible.

State average production costs put out by your state university may be substantially higher or lower than your costs. Think back to the wide range of production costs mentioned in chapter 1 on maximum economic yields.

Enterprise analysis is a must, adds Marty Thornton, Bloomington, IL, banker-farm manager. But you need a total farm management record system of some kind. There are a flock of them available, including the new computerized systems which some innovative farmers are using. As a starting point, you can't go wrong with the system offered through your state university.

Some farmers keep or get the records through a service by sending in the raw data, but don't spend enough time analyz-

ing them. They use the records to see where they've been, without using them to guide them to where they want to go, adds Iowa State's Michael Boehlje.

"Some kind of a record system that features the profit-center concept, enterprise analysis, breaking it down into components, is really essential, I believe, in today's high risk financial and economic environment," Boehlje explains.

Make the records work for you by monitoring financial performance over a period of time by comparing actual cash flow to budgeted or projected cash flow.

"I think it's important to make periodic checks comparing actual performance to planned performance, rather than just waiting until year's end to see how we come out," Boehlje asserts.

That goes for your written marketing plan, too, Boehlje reminds. You need to keep a market record and compare that against your market plans, which should include your objectives. Those should include marketing strategies: when you expect to price your crops, how much you expect to price per sale, how you are going to price it, etc.

"Keep a record to see how much you deviated from your plan, and why. It can be very enlightening," Boehlje concludes.

Afterword

Much of what we have discussed on preceding pages leads to an unavoidable conclusion. The reading of economic signposts, calculating the risks they present, and acting upon them to your greatest advantage—is one of the toughest challenges any farmer-businessman comes up against.

It was not by accident, then, that approximately one-third of this risk management discussion has been on managing production risk, while two-thirds was devoted to managing risk in financial planning and in the marketplace. As crucially important as are sound crop production practices—including the setting of Maximum Economic Yield goals—the total management of the commodities you produce, with particular attention to analyzing market opportunities, will tell the final success story in the years ahead.

In the foreword of this booklet, we stated that International Minerals & Chemical Corporation strongly believes that farmers' profits can best be enhanced by joining the efforts of our own industry together with financial experts, educators and communicators.

We intend to continue that effort through events such as the Managing Risk Workshop, which provided the forum for generating the information presented in these pages.

IMC's pledge to help improve the profitability of American farmers is not new, and recently, we committed $1 million to fund high-yield research projects, in cooperation with land-grant university plant and soil scientists. Our goal is to seek out and overcome the impediments to higher economic yields and to provide through all available avenues, the high-yield technology needed by today's farmer. Yields of 200 to 300 bushels of corn, 100-bushel soybeans, 14 tons or more of alfalfa per acre and 150-plus bushels of wheat per acre are providing evidence that high yield goals are readily attainable.

We believe that when those yield potentials are combined with calculated, systematic risk management, you will have found your success key to the eighties—and beyond.

"Keep a record to see how much you deviated from your plan, and why. It can be very enlightening."