

## Key Indicators of Ranch Profitability

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It is always wonderful to be back in Nebraska where I spent a good part of 18 years while serving as General Manager of the Rex Ranch. During that time I was blessed to have four excellent foremen, one of whom was transferred to a ranch in Wyoming. They had very good people working with them. I was raised by a very good ranching family who started me out at a very young age and taught me much. I followed that with a good education and a few jobs that provided some wonderful mentors and experience. However, it was the Nebraska years that solidified my understanding of management and knowing how to ranch profitably. My co-workers at the Rex Ranch and a group of very good ranchers in the Sandhills became mentors and a sounding board providing new and good ideas and providing excellent feedback and improvement for some of my “crazy, out-of-the-box” ideas. To them I say, “Thank you. You have made my life and career enjoyable and rewarding.”

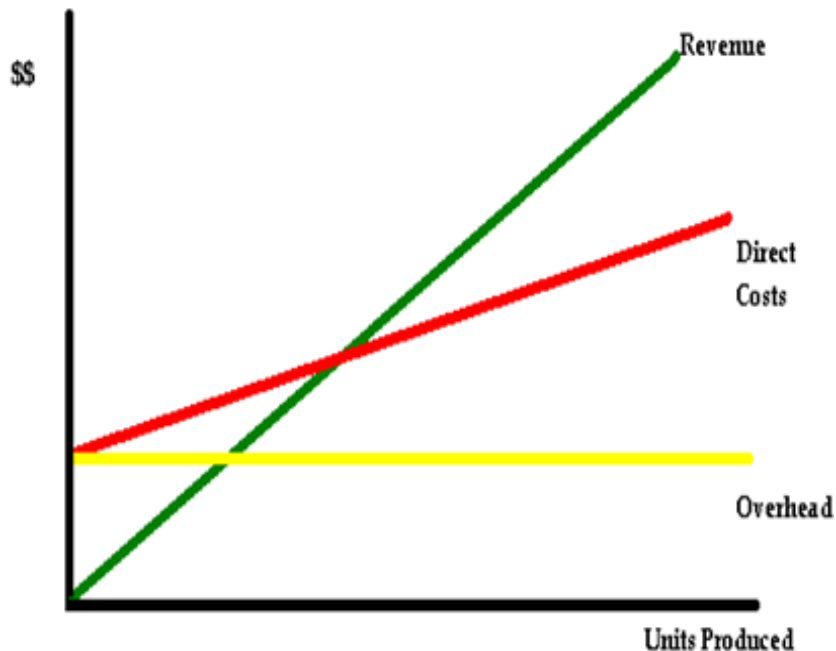
Anyone who has heard me speak gets, or is obliged, to see the following three slides:

- Four Areas to Manage
  - Production
  - Economics/Finance
  - Marketing
  - People

You really can't manage successfully without being able to manage all four areas. You and I are not excellent in all four areas. We need to depend on others for help. If you are part of a small operation with only close family members involved, perhaps you will need to find a neighbor or agricultural professional that can help you be more successful in your weak area. The problem in finding a neighbor to help is that we too often assume that, if they don't ranch pretty much the same way we do, they aren't very good. Be careful.

- Three ways to improve profit
  - Increase turnover
  - Reduce Overheads
  - Improve Gross Margin

Everything you do in your production, purchasing and marketing schemes will affect these in one way or another. Sometimes one will be affected positively and another negatively. The key is to have the balance be positive. This can best be explained by the following chart.



You can see that overheads are constant in the short run. Some people like to refer to them as “fixed costs.” I rebel at that idea because all costs can be changed or eliminated given the desire and the right amount of time. However, in the short term they don’t vary, even though the number of livestock might change. The graph clearly shows that, if you reduce overheads without changing direct costs or revenue, you will be more profitable. If you can produce and sell more units of output, you also improve profit. If you increase gross margin by increasing revenue and/or reducing direct costs, you will be more profitable.

The preceding led me to the following list of

- Five Essentials of Ranch Management
  - The approach must be both integrative and holistic
  - Continuous improvement of the key resources—land, livestock and people
  - Use of good planning and decision making tools
  - War on cost
  - Emphasis on marketing

So, the efficiency “indicators” or metrics that I will suggest today come from a desire (or mission statement) **to be profitable** while **improving the land, livestock and people**. That involves a lot of **systems thinking or holistic thought** combined with the use of **good planning and decision making tools** to determine how to wage **war on cost** and to place an **emphasis on marketing** to achieve the stated mission.

With profit as a main objective, let’s look at a way to select indicators or metrics that will help us gauge our progress. We will start with Total Revenue which is all of the total sales receipts from our business. For the sake of simplicity, in this exercise we will assume that the business is neither growing nor expanding. If size were changing or cattle were being purchased, those effects would need to be taken into consideration.

From Total Revenue we will subtract the Direct Costs. The result is Gross Margin. The direct costs are those that will change with the addition or removal of only a single animal. They are mostly feed, health related and some minor incidentals such as trucking.

Total Revenue (Ave. Wt. x Price x Head)  
Minus Direct Cost (Feed and Health)  
Equals **Gross Margin**

We then subtract overheads from Gross Margin to get Net Income or Profit. The overheads are mainly comprised of equipment, facilities and labor. Yes, labor is an overhead. Are you going to change the labor force every time you change the number of livestock by a few head?

Gross Margin  
Minus Overheads (Equipment, Facilities, Labor)  
Equals **Net Income or Profit**

Now we want to select some profit indicators or metrics that will help us know if we are making correct decisions. In the profit equation the first component is **Total Revenue**, which is determined by Average Weight times Price times Head. I think the best long-term indicators for weight are:

- Lbs. weaned per acre
- Yearling gain per acre
- Total gain per acre

Please notice that I didn't say "average" weight or gain per animal but weight gain **per acre**. This is a very important distinction. Good managers care much more about the total weight sold from their ranch or weight produced per acre than average weaning weight or average yearling gain. If increasing the total weight comes from having more animals that are a little smaller, you might even get another advantage from the price slide.

The next contributor to Total Revenue is price. The best indicator for price is price—the prices you have received over time. I like to have a listing of all sales for a year by class of livestock and indicate where sold, the average weight, the average price and total proceeds. A good record of sales over time becomes a very good decision-making tool and lets you see your progress in marketing.

The final contributor to Total Revenue is the number of head available to sell. Indicators or metrics to track are:

- Pregnancy rate (%)
- Weaned calf crop percentage
- Acres per cow and/or ada's

I like to track pregnancy rate and weaned calf crop percentage separately rather than combining the two into "calf crop weaned per cows exposed" for several reasons. First, I want the team to be focused on this year's events—a good pregnancy rate going into next year and a good weaning rate this year. Second, if you do much buying or selling, the adjustments that

must be made are time consuming and sometimes difficult. If you want, you can multiply this year's weaned calf crop percentage by last year's pregnancy rate to get "calves weaned per cows exposed." It isn't precise, but it's very close. Third, I want to know where the losses are occurring. Are we losing them as a result of poor pregnancy rate or through losses that occur after pregnancy diagnosis? These rates compared with costs can help you determine if you are spending too much or too little on feed and health.

Acres per cow or ada's (animal days per acre) help determine if your carrying capacity is growing over time. If cow size is increasing or decreasing, animal unit size adjustments need to be made for that.

Total Revenue (Ave. Wt. x Price x Head)  
Minus ***Direct Cost*** (Feed and Health)  
Equals **Gross Margin**

***Direct Cost*** is next in our profit formula. The Direct Costs are mainly feed and health related costs. I have come to be very sure that the best indicator for efficiency in this component is:

- Fed feed vs grazed feed

Yes, you may tweak your herd health program or your protein and mineral supplementation program and save some money; but, if you can replace a day of feeding with a day of grazing, you have, in almost every case, markedly improved profit. You have removed a lot of machine, fuel and labor cost. Throughout my management career and now in my consulting work, this is one of the highest priority items.

Gross Margin  
Minus ***Overheads*** (Equipment, Facilities, Labor)  
Equals **Net Income or Profit**

From Gross Margin we can subtract ***Overheads*** to get Net Income or Profit. Overheads are comprised of Equipment, Facilities and Labor. The single best indicator for efficiency in overheads is:

- Cows per man

Unless you are already running a lot of cows per person, it is very likely that you have as many costs that relate to the number of people on the payroll as relate to the number of cows you run. If you think of it, the other overheads are usually tools or equipment for the workforce to get their jobs done. If you have fewer people, you usually have less stuff. Then, when you start making good progress on the cows-to-man ratio by better organization and strategic planning, cut other overheads to the bone. I will allow that sometimes a few perks such as a nice four-wheeler, a better –than-needed pickup and trailer, a few more horses than needed, etc. are as important as income to some people. But recognize that, if you are losing money, this is a good place to start. Over my career as a manager, it is almost unbelievable the number of tractors, pickups, horses, buildings, housing, etc. that we have eliminated. Most of that has happened because we have markedly reduced the number of people to run the same and usually more cows.

It would be good to have an indicator or proxy for **Profit**. I don't think there is one. The following, if looked at holistically with the indicators already given, can provide a good indication of progress toward increasing profits:

- Cost per cow
- Cost per calf
- Cost per lb. of calf weaned
- Cost per yearling
- Cost per lb. of yearling gain

Please notice that the first three metrics are costs allocated to the cow herd(s). They are simply divided by different numbers. The next two are costs allocated to yearlings divided by different numbers. If you make a habit of comparing these cost metrics with your production metrics, you will make continually better decisions. You will start to know if you are spending too much or too little on feed and herd health.

There is one other indicator that can project profit potential into the future:

- Proceeds from cow sales compared to the cost of developed heifers.

This comparison allows you to see what your real depreciation is and how effectively you market cull cows, which I now like to call "market cows" or excess cows. The proceeds from market cow sales should cover the cost of developing heifers. With good marketing and low-cost heifer development, there can be a margin as big as \$200-300 per cow. If your cow sales don't cover heifer development costs, you should probably consider buying replacement cows. In that situation, you can carry more cows because of having no yearling heifers. That will pay for some of the premium you will need to pay for replacement cows.

A quick review of all the indicators:

- Production Metrics (Indicators)
  - Lbs. weaned per acre
  - Yearling gain per acre
  - Total gain per acre
  - Pregnancy rate (%)
  - Weaned calf crop percentage
- Financial Metrics
  - Cost per cow
  - Cost per calf
  - Cost per lb. of calf weaned
  - Cost per yearling
  - Cost per lb. of yearling gain
  - Average sale price of cows compared to the cost of developing a replacement heifer
- Three Very Important Ratios
  - Acres per cow or ada's (Animal Days per Acre)
  - Fed feed vs grazed feed

- Cows per man

Changes in these three ratios will drive changes in the other metrics. The ratios are all very dependent on well managed, time controlled grazing. Years ago as my co-workers and I began to plan and practice time controlled grazing, it became obvious that we had to become holistic in our processes and become systems thinkers. We knew we wanted to have a significant number of pastures or paddocks per herd for good grazing management. To keep fencing and water development costs reasonable, we recognized that we would need to have large herds so that we could have a large number of paddocks per herd without so much total fence and so many water sites. With larger herd size it became easier for one man to care for a large number of cattle. It also meant that our crossbreeding program might have to change or be simplified. We began to learn that each decision had more than one (or the intended) consequence.

## Resource Management and Monitoring

If you are going to have efficiency indicators, you need to begin to understand how to use them and how to move the three ratios (acres per cow, fed feed vs grazed feed, cows per man) in the desired direction. First you need to become a systems thinker. As an example, we might consider the process of selecting for high growth rate and high milking ability. When many in our industry did this, we got more growth and more milk. What else did we get? Bigger cows, lower stocking rates because of the increased consumption needed for maintenance of a bigger cow, and added milk production. Did some of us get reduced fertility and higher feed supplement bills to get those cattle to perform?

What about crossbreeding? We learned that the use of a composite breeding program where nearly any bull that we had could be used on any cow was more nearly optimum than a sophisticated, well designed program. Certainly we did not achieve maximum heterosis, but we greatly reduced our need for fencing and water development. We made it much easier for one person to care for a lot of cattle.

What about wormers and insecticides? Is it possible that, as we use them, the parasites become resistant to the parasiticides? Is it possible that the cattle lose their natural resistance because they don't need it as long as the wormers and insecticides are doing their job? Is it possible that we kill more than the target organisms and that we kill organisms (including some of the target organisms) that are important to the mineral cycle—organisms or creatures that eat, break down and carry manure and old plant material back into the soil to become food for a later generation of plant growth? I don't know the answers to all of these questions, but I make the best assumptions that the current science will help me make, and with those assumptions, make the best decisions that holistic thinking will let me make.

Systems thinking will lead us to a number of different (perhaps out-of-the-box) decisions. I have concluded the **planned, time controlled grazing** is the best way to **improve the land**. I have had the wonderful privilege of managing in a number of places including semi-desert, high mountains, irrigated pastures and the Sandhills of Nebraska. Grazing principles are the same wherever you are, but the practices will change to accommodate for differences in rainfall, temperature, irrigation, etc. On the semi-deserts and the high mountains, the recovery time (from end of last grazing to the beginning of the next) will almost always be at least a year and can be as much as two years. In the Sandhills we sometimes grazed two or even three times in a year, with one of those being a dormant season grazing. As we progressed, it began to feel like one grazing during the growing season, and a dormant season grazing allowed more appropriate recovery times—especially in drier years. The longer I watch (monitor), the more convinced I become that longer recovery periods are needed in the low to moderate rainfall areas. On irrigated or high rainfall pastures, the recovery time can be much shorter and still get very good recovery of all the plants.

I have also learned that, to truly **improve cattle**, we need to select cattle that can withstand the rigors of our climate and graze most or even all of the year with minimal supplementation. In my lifetime I have seen a lot of genetic change in cattle. I am quite sure that much of that change has not been “improvement.” Yes, I would like cattle to grow better and have better carcasses. But, I think we need to move slowly and monitor for unintended and undesired consequences so that we can back away quickly if needed. In my BEEF Magazine articles I have been quite critical of too much size, too much milk and lack of heterosis in our cattle. I want a crossbred cow that will have 50-80% of maximum heterosis, that is of moderate to small frame size (she can be heavy) with moderate milk production. I think fertility and body condition will eliminate cows that give too much milk unless you are spending a lot on supplement. There are two parts to the environment: the natural environment and what we managers add to it. I don’t want to add much to it—just take off the rough edges like severe winter storms, unusually tough and deep snow, drought, etc. Then I want a cow that will stay healthy, conceive, deliver and wean a good calf every year for many years in the rigors of my natural environment with very little help and attention.

If you want **people to improve**, you need to orient and train. You can’t assume that they understand your business and know how to do what you expect. After all, when you get this far out-of-the-box, you aren’t doing very many things like your neighbors. A manager’s job is “to create an environment in which people want to excel and then provide the tools, training, and freedom to do it.” Why did I say “freedom?” Most people can soon tell if they are nothing but a robotic extension of the boss OR if they are a valued team member whose thoughts and ideas are appreciated and welcomed. If they have freedom to use the tools and training that you have provided, they will be much more excited about their job and much more likely to do it well. Leadership is a difficult job, but it is so important. It is not even easy to define, but it “is best gauged by the **voluntary** response of those being led.” If the response is not voluntary, then it is not leadership; it is “pushership” or coercion. It is also resented. Being a good manager and leader doesn’t mean that you have given up your job to your team. You still have the direction, the final decisions, the accountability, but you develop the traits of a leader and use the talents and abilities of your people. You don’t just want to hire arms and legs and eight hours a day. You want to hire a heart and mind as well. In our business, workers and thinkers need to be housed in the same body. You will find that your family members or employees can be very valuable in your whole decision making process and implementation of ideas.

To expect **improvement of the key resources—land, livestock and people**—you need to use **good planning and decision-making tools**. It starts with a good grazing plan, an inventory - based budget, a drought plan and a deep-snow plan. A few good tools make this easy. I like to use a grazing planning chart for each herd. This is a chart with days of the year across the top and pastures down the side. You simply chart when you plan to use each pasture with that herd. An inventory based budget begins with a stock flow or inventory projection. It has events such as Beginning Inventory, Born, Bought, Transferred In, Transferred Out, Died, Sold, and Ending Inventory across the top with cattle classes down the left side. I like to start with calves in the middle of the page and have females work their way to the top and males work their way to the bottom as they change age or management groups. The drought plan primarily outlines



a destocking plan that relates to grass growth and forage production. It puts dates and rainfall amounts and the class of cattle that will be sold if rainfall and grass production is short.

Good cost accounting that will allocate direct costs to the appropriate enterprise is a must to really know what you are doing and to get valid cost metrics. A periodic inventory worksheet and a sales sheet that ties to the inventory completed at least seasonally or at the end of each month are necessary to get the production metrics that you need. A grazing record that relates directly to your grazing plan that records the date in and out of pastures along with the number of head adjusted to standard animal units is necessary to get pasture-by-pasture “ada’s.” It is also important to make sure you avoid using the same pastures at the same time in successive years, and to know if you should use a pasture a little heavier or a little lighter in the next grazing. So, good cost accounting, good inventory-based cattle performance records and good grazing records will give you all the efficiency indicators and allow you to calculate the key ratios. If done each month, it is not difficult or time consuming.

Good records also help wage **War on Cost**. Actually, it is more of a mindset or attitude than anything else, but once started, the records are a big help in knowing just how much you can do. A good grazing plan works toward lengthening the grazing season and reducing the number of days you feed. You may plan to graze land that you had heretofore hayed. On a Wyoming ranch that I managed, we completely stopped haying and started grazing the land that had always been hayed. We soon found that we didn’t need much hay, so we bought the hay we needed. This increased our carrying capacity, plus brought in a little fertility that we could place where needed as we fed. By grazing more, in this case a lot more, we were able to eliminate all of the equipment except the feed tractor, which was old. We simultaneously began to calve in June and bought replacement cows bred to calve in June, thus eliminating the need for calving barns and labor and all that goes with it. With these changes we were able to run about 1500 cows and 1300 yearlings with two full-time men and a couple of seasonal helpers. All of this started with a good grazing plan. I count hay and supplemental feed as part of the grazing plan because my goal is to minimize supplementation and feed as few days as possible. When feeding is mainly supplemental and “cows-per-man ratio” is high, overheads can be cut significantly.

Sometimes there is a need for hay, but usually not nearly as much as we are in the habit of feeding. If we cut hay feeding as much as possible, we often find that we can purchase our hay needs and increase carrying capacity by the amount of the purchased feed and eliminate most of our equipment and quite a bit of labor. If we can’t buy hay, it is often advantageous to hire a contractor to put up the amount of hay we really need. There are lots of reasons I like to do this, but the first is to eliminate a lot of equipment, and also, I want to focus on grazing rather than a haying operation.

Once you have the decision-making tools described above and the efficiency indicators, you should ask, “How do I get to efficient?” The answer in summary is:

- Minimal, low-cost development of replacement heifers
- Right calving season

- Reduce fed feed—increase grazing
- Increase cows per man
- Decrease acres per cow
- Use inputs wisely
- Cut overheads—really cut!

I hope you can see that well managed grazing and getting the calving season right are the catalysts for so many other changes that will make operations more efficient and profitable. Just being efficient is not enough. You must be efficient doing the right things.

It is also important to place an ***Emphasis on Marketing***. Many ranches do well selling their calves or yearlings. Odds and ends and small groups seem to make more chores at home; so too often they are loaded and hauled to the first and closest available sale. Often there are ways to upgrade our opportunities to sell the cull cows, open heifers, etc. We need to always think of time, form and place. We ought to know seasonal trends and which class of cattle sells best. We should know if a pregnant cow or heifer bred to calve out of our season will sell better than an open cow or heifer. We want to know which auction is best for each type of cattle and which order buyer usually pays the most for what we have to offer. Can we make small changes that will increase the value?

In the previous talk we quickly looked at:

- Four areas to manage,
- Three ways to improve profit, and
- Five essentials of successful ranch management.

They are very interconnected. We have just gone through the five essentials, and together they comprise a complex system where changing one thing results in a number of other changes. Monitoring becomes very important to make sure that your decisions are getting the desired results with minimal undesired results. Most monitoring can be done from your production and financial records. However, land and range monitoring require observation and the recording of what you see. You monitor grass utilization and regrowth for the current and next grazing plan so that proper time adjustments can be made. You also want to develop a history of the changes to the land and the plants. Photo points and transects where you actually measure and count what is observed are very important. I especially want to know the percent of bare ground, plant spacing, plant species variety and evidence of other organisms.

While systems are complex, are there some simple steps that can be taken to make progress without a lot of risk? The following ideas will help bring some simplicity to managing a very complex system:

- Alignment of people, livestock and land. Do the best you can to fit the right people to the right livestock and then the livestock to the land. Some people do better with younger animals while others do better with older animals. Some classes of cattle fit one part of the ranch better than others. Sometimes it doesn't matter too much. However, good alignment will give each class of cattle the best possible opportunity to

produce well while giving people a chance to develop and use their talents while improving the land.

- Large herds. The main advantages are cows per man and less infrastructure for grazing.
- Every man has his own herd. This will provide great incentive for top performance. I wanted every full-time employee to have his own herd or herds.
- Information feedback so each person knows how their responsibility is progressing. This is where the “indicators” that we have discussed become so useful.
- High cows-per-man ratio.
- Careful coordination of reproduction, genetics, grazing and marketing. It is much better to see these relationships holistically than as separate identities. It is very difficult, if not impossible, to make changes in one without needing to make changes in one or more of the others.
- Short-duration grazing—with lengthy recovery.
- Increase grazing. Reduce fed feed.
- Take advantage of heterosis.
- Calve in sync with nature.
- Small or moderate cow frame size.
- Cows with moderate milking ability.

With profit and resource improvement as our objective, we put metrics or indicators in place that help us keep moving in the right direction. Then we have a never ending round of planning, executing our plan, monitoring the results, and replanning. We will never be perfect, but as we improve, we get a nice reward. I have loved the challenge of improving land, livestock and people. I hope I have provided ideas that will be helpful to some who are trying to improve. I am the “father” of only a few of these ideas. Most of them have come from other successful ranchers and my co-workers.