

Weakest Link

Imagine, slippery clay soil with a continuously running seep, deep mud, and the tractor dug in. Stuck. Clear goal—pull the tractor out of the mud.

You get your strongest chain and park the truck on dry ground. Hook the truck to the tractor with the chain. Of the chain's 20 links, 19 of them, the vast majority, are rock-solid strong; you could tow a house with them. They won't break. Only 1 link—a mere 5%—is weak.

You know where this is going. A chain is only as strong as its weakest link. If the weak link breaks, the tractor won't be pulled out. It is irrelevant that 95% of the links are strong. The goal will not be accomplished.

Likewise, your farm is only as strong as its weakest link.

“One, and only one, weakest link accounts for the strength of the entire chain, regardless of how strong other links might be. To strengthen a chain one must always attend first to the weakest link. Other links, no matter how frail they appear, are essentially non-problems until the weakest link is first fixed.” – Allan Savory, Jody Butterfield, Holistic Management

Farm Weakest Links

A process of continuous improvement that identifies and addresses the weakest link for your farm is a critical practice to accomplishing your goals and financial viability.

For example, one farmer is taking in less money than he is spending. He has exceptional soil health, reliable access to water, and the production skill and experience to consistently produce high yields of quality produce. However, he doesn't return buyers' calls, and is inconsistent with delivery dates. Buyers can't count on him or his product. His goal for the following season is a 10% profit. His plan to accomplish this is to increase production by 30%. However, his weakest link is customer relationships. Increasing production will also increase costs. If his weakest link of selling the product he grows is not addressed, he will likely be less profitable with this strategy, rather than more.

Another farm has excellent demand for their product and healthy buyer relationships. They have consistent production and high quality. But some of their product is wasted; they can't get it out of the field quickly enough and it is difficult to hire harvest help. Because of this they often can't supply demand even though they have the product. Their time and money is best spent on increasing harvest and packing efficiency.

Sometimes our weakest link is something we aren't good at, or don't like to do. While we could address this with training to be better at it, we might be best served hiring someone else to do the task, or bring in a partner who is good at it, or change our farm plan so it doesn't even need to be done.

Other times the weak link may be a limitation based on geography or weather, such as sandy soil, frequent hard rains, or blossom damaging spring frost. In these situations it may be a more productive strategy to have enterprises that work best with our situation. Battling non-viable systems can make success an elusive mate.

Risk Assessment

Some weak links are risk-based decisions. Things that could happen—such as a barn fire or drought—or they might not. We can't know in advance. We can take precautionary measures to minimize the impact on our

lives and businesses if they do happen. For fire we can purchase property insurance. For drought we can install irrigation.

Sometimes we want to take multiple precautionary measures and can't afford them all. We must evaluate and choose. Two critical questions to help evaluate risks are:

- How Likely?
- How Serious?

For most farms, a barn fire is unlikely. However the financial loss could be large. Without insurance, a barn fire could put a farm out of business—that would be very serious. For another farm, a barn fire might not be serious because they don't use the barn and it's in very bad condition. Lack of insurance on the barn might not be a weak link for this farm.

<u>EXAMPLE RISK</u>		Probability				
		Very High	High	Medium	Low	Very Low
Conse- quence	Very High	Very High	Very High	Very High	High	High
	High	Very High	High	High	Medium	Medium
	Medium	High	High	Medium	Medium	Low
	Low	High	Medium	Medium	Low	Very Low
	Very Low	Medium	Low	Low	Very Low	Very Low

For drought, an extended period of drought with high temperatures is likely in my climate, but I grow tomatoes and the impact on them has never been of consequence. Tomato roots grow 8-10 feet deep and have been able to access their water needs in my soils without irrigation. I might decide irrigation for my tomato crop is not a weakest link at this time. However my broccoli crop is shallow rooted and a prolonged drought would be a high-risk issue for this crop. I wouldn't grow broccoli without access to irrigation to minimize the risk of drought.

Identify Your Weakest Links

You will need to identify your weakest links at the **big picture** level of farm and personal life management and also the **micro** level of different enterprises on your farm or a break down of macro-management areas.

Big Picture Of Farm And Personal Life Management

Consider all the areas of management on your farm from start to finish, from idea to table.

Below are examples. Be specific for your operation.

- Production: Fertility, water, disease, weeds, pest, seeds, soil quality, knowledge/experience . . .
- Harvest and Post Harvest: Harvest and pack efficiency, temperature management capacity . . .
- Quality Control: Food safety, temperature management, grading, packaging . . .
- Livestock: Stock health, grass management, breeding, supplies . . .
- Mechanical: Equipment operation, maintenance, and repair, building construction and maintenance . . .
- Business: Record keeping, legal matters, sales communication, contracts . . .
- Financial: Access to capital, cost of production and profitability, accounting and financial planning . . .
- Employees: Training, expectations, efficiency, communication, longevity, access to skilled labor . . .
- Communication and Decision Making: Facilitation, skill level, systems and processes. . .
- Market: Access to, development level of, quality of buyer relationships, sales, brand identify . . .

If you and your farm partner also have a personal relationship or family together, include areas that need to function well for your farm and personal relationship to function well (i.e. taking care of the house or kids.)

- Personal: Personal needs, cooking, cleaning, child care, social/emotional management,

Include elements that may be difficult to change. Consider:

- Weather, soils, access to water, access to affordable equipment, access to land . . .

Social structure of your farm and market and community:

- Cultural expectations, prevailing attitudes, family relationships, community support

Micro Level

For production decisions consider the weakest point in the life cycle of the organism you're trying to control or promote. For example to kill a thistle by cutting it, you must understand it's life cycle and weak point, cutting it when the energy is largely out of the roots and into the seed bud. To produce tomatoes profitability in my humid environment I'll have to address their weak link of vulnerability to fungal disease.

If you have different enterprises you'll want need to consider the weakest link for each. For example, I can produce kale and manage the pest, disease, fertility, and water needs relatively inexpensively in our climate. However picking and packing kale on our farm costs significantly more per carton than producing it does. Further reduction of our production costs will not make kale sufficiently profitable. We must manage the harvest and packing for efficiency. One way we do this is to over produce the crop so the harvesters don't have to search the field for good leaves. Their cases harvest per hour is much higher. This drops harvest cost from \$5-\$6 per carton to \$2.00 per carton. If we did not have enough land to over produce and the access to compost that we have, land or compost might be the weakest link, rather than harvest cost. Over production would not be an effective strategy for our carrot crop as weeds are a weak and expensive link in their production chain.

If you've identified a management area as problematic, it can be helpful to break the management area into micro links. For example, if you know you need to address your employee management, you might consider all the aspects of employee management and determine if there is a particularly weak area. Perhaps employees are well trained and a good system for communicating what must be done is in place. However, morale is low because the employees do not have a sense of how their work is benefiting your customers.

Testing Strategies To Address Your Weakest Links

Once you've identified weakest links you will develop strategies to address them. It is important to have a testing system for your strategies to be sure you are effectively addressing the weak link.

Root Cause or Symptom

It is important that your strategies address the root cause of a problem rather than just treating symptoms.

The 5 Whys

One system to find a root cause is to keep answering *why* questions until you find the cause. In the example in the side bar of a tomato crop with fungal disease, finding the root cause leads to a more effective and longer-term strategy.

Example: You may have decided that fungal disease is the weakest link for your tomato crop. If the disease is a symptom of growing in wet soil, using a fungicide treats the symptom not the cause. The problem will likely continue. Improving drainage through soil building addresses the cause. It strengthens the weak link and is a more effective strategy long term. You might still need to treat the symptom in the short term.

Keystone Management

A keystone species is a plant or animal that plays a unique and crucial role in the way an ecosystem functions.

Without keystone species, the ecosystem would be dramatically different or cease to exist altogether. For example, beavers build dams and create flooded areas—an environment that many other species depend upon but can't create. Removal of beavers affects the species dependent upon the beaver-made environment.

Applying this thinking to farm management can be more efficient than reactive single strategies. Targeting a keystone management area allows a farm to address several problematic areas simultaneously.

For example, effective recordkeeping creates an environment of order and structure and information sharing. This “recordkeeping environment” supports communication with employees and creates accountability, creates a farm memory that informs decision-making, purchasing, task assignment and so much more.

Testing Strategies:

The below questions can be helpful to evaluate your proposed strategies.

-- From *Holistic Management: A New Framework for Decision Making*

1. Cause and Effect: Does this action address the root cause of the problem, or merely a symptom?
2. Weak Link:
 - Social: If you take this action, will you encounter or create a block to progress?
 - Biological: Does this action address the weakest point in the life cycle of the organism you're trying to control or promote?
 - Financial: Does this action strengthen the weakest link in the chain of production?
3. Gross Profit Analysis: Which enterprise contributes the most to covering the overheads of the business? How does this decision affect it.

5 Whys

Why did the tomato crop have fungal disease?

- Because the field was consistently wet.

Why was the field consistently wet?

- Because the soil doesn't drain well.

Why doesn't the soil drain well?

- It's compacted.

Why is it compacted?

- It is lacking in soil microbial life and healthy aggregation.

Why is it lacking in soil microbial life and healthy aggregation?

- Because it's been over-cropped and mono-cropped and needs a soil building crop.