

SYSTEMS APPROACH TO NO-TILL IN THE FUTURE

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INTRODUCTION

The presentations I make are normally focus strongly on techniques used to improve crop rotations and other components of diverse no-till systems. In reality, all of this material can be found at our web site. Readers interested in this important material are encouraged to visit that site. I am often questioned as to why the Dakota Lakes Research Farm has put so much emphasis on developing the systems approach and what it tells us about the future. In this paper we will attempt to share some of our thoughts.

The track record of meteorologists and stock pickers in the last year demonstrates the danger of prognostication. Consequently, readers should interpret the contents of this paper with a great deal of skepticism. The author reserves the right to be wrong (and hopes you forget). He also hopes to have the ability to gloat if some of this material is prophetic.

THE SYSTEMS APPROACH

The terms system, systems approach, holistic management, etc. have become quite popular during the last few years. This signifies there is increasing awareness that management decisions and policy techniques need to be based on a broader perspective than has been common in the past. This awareness has developed as the result of continued frustration when seemingly good management decisions and sound policy lead to totally unexpected consequences. The logic is that, if seemingly good decisions consistently lead to bad or unanticipated consequences, either the decision and policy makers are incredibly stupid or the techniques used are flawed. Maybe there is a little of both involved.

Being aware that the approaches being used in the past have problems does not provide solutions to these problems or even indicate where they were flawed. Simply espousing the need to use a systems or holistic approach does not indicate how it should be done. Similarly, when it is stated that a systems approach has been used it does not mean that it has been used correctly.

The validity of decisions made using a systems approach must by definition be based on evaluation of the impacts these decisions have on the components of the system and the system as a whole. There are several excellent texts that outline this way of thinking and how it is developed and implemented. This paper will not try to compete with them in providing the basics. However, since most of these have not specifically focused on issues surrounding crop production or no-till, we will attempt to apply some systems analysis techniques to predicting what the future holds in store.

BASIC PREMUSES

Before making any predictions it is important to outline some basic “principles” upon which they will be based. Obviously, if these are not correct the predictions will be flawed.

PERCEPTION IS REALITY

It is not certain that the “real truth” ever triumphed over “perceived truth” other than in old movies. There is no reason to expect that to change in the future. In fact, as the complexity of issues increases (global warming/carbon sequestration) it becomes difficult for even well intentioned individuals to agree on what is the truth. (See the papers on global warming in these proceedings). This is complicated even more by the willingness and ability of special interest groups to impact public perceptions. Consequently, even when the truth is known, it isn’t important unless efforts are made to assure perception is the same.

NO ONE HAS YOUR BEST INTERESTS IN MIND EXCEPT YOU

It is very common for politicians, bankers, personnel from government agencies (CES, NRCS, USDA-ARS, and ABS), and company representatives to infer that they have your best interest in mind. They (including me) lie. They (we) have your best interests in mind only if they happen to coincide with ours. This should not surprise you. It does not make them immoral or unethical. Their first responsibility is, as it should be, to themselves and their organization. Your first responsibility should be to yourself and your family or organization. How many times have you bought ag. chemicals, fertilizers, or machinery because it would be good for John Deere, Monsanto, or the Co-op? Never. Why should they be any different?

IT’S THE ECONOMY STUPID

The laws of economics, like the laws of nature, work exceptionally well. Economic systems, like natural systems, will shift to relieve or offset a stimulus applied to them in a consistent and predictable manner. Agricultural subsidies and import tariffs eventually become capitalized into the price of land and other agricultural inputs. They then become subsidies to landowners and major corporations not to crop producers. If (when) the subsidy or tariff is removed, the producers find themselves in dire economic straights until land and input prices respond to the new reality (sugar

beet producers are an example). Similarly, excessive taxes and regulation eventually lead to lower costs for other production inputs.

Improved methods or new technologies are only an economic advantage until the increased efficiency provided is capitalized into the price of land and other production inputs. After this happens the new techniques become necessities. No-till has raised (or will raise) the price of land in South Dakota to a point higher than it would be without this technique. Established farmers who own a substantial land base can continue to operate and even expand without using no-till because they do not have to pay full land costs on all their acres. New producers will not be able to cash flow land purchases without using no-till or some other production system that gives them an advantage over traditional techniques.

Similarly, developing an improved product that commands a higher price from the buyer is only important until others also develop the same or similar products. Then it becomes a necessity to provide the improved product (it is not possible to sell the unimproved product). An analogy can be made with farm machinery. How many people would buy a tractor without power steering? A few of us remember when power steering, cabs, air conditioners, etc. were innovations.

TO THE CONSUMER QUALITY, CONSISTENCY, CONVENIENCE, AND CREDIBILITY COUNT- COST DOESN'T

The ultimate consumer of agricultural products is becoming increasingly less concerned about the cost of the finished product and more interested in perceived value. If you don't believe this go shopping with my wife. Convenience, food safety, wholesomeness, and other factors have become much more important than price. Processors of agricultural goods are interested in buying quality raw materials (inputs) as cheaply as possible so they can maximize their profits. You do the same thing. When is the last time you offered to pay more than the co-op was asking for fertilizer in order to assure they were making enough money? Owning processing capability will only be important if you create a "valuable" product from raw material produced in an economic manner. In other words, farmer owned processors must be as efficient as privately owned ones. This means obtaining the raw material at competitive prices. Trying to make up production deficiencies by adding value in processing will not work.

THERE ARE NO MIRACLES

We are not going to get rich producing drugs and pharmaceuticals. The quantity needed is too small. The requirements will be too high. And the value will be capitalized into land costs in the area where the companies choose to grow the product.

Carbon sequestration payments present more potential problems than promises. Even if other countries agree to allow use of this approach, the only people who will make substantial amounts of money from it will be lawyers, bureaucrats, and land owners. It will become another subsidy. It will be almost impossible to administer fairly. It will focus attention on other greenhouse gasses in agriculture (Ammonia,

nitrous oxides, etc.). It will produce more regulation. We will have difficulty being competitive with other areas of the world (and US) in sequestering carbon.

AGRICULTURAL PRODUCTION ISN'T IMPORTANT

Politicians (including those that run farm organizations and lobbying groups) like to tell farmers they are important because they feed and clothe the world. That is true, but nobody cares. If you didn't do it someone else would be happy to take your place. From an economic standpoint, production of raw agricultural products is almost irrelevant. Bill Gates's net worth exceeds the total value of agricultural production in the United States many times over. It is not as many times today as it was a year ago, but it still is many times.

Agriculture is important economically in terms of the amount of value generated by the final product, not the raw material. Agriculture is important on how it impacts the environment. This is not as obvious in sparsely populated South Dakota but the fact that Amendment E was passed more on environmental grounds than social and economic ones should serve as a wake-up call to us also.

THE FUTURE

TECHNOLOGY WILL BE A TOOL, NOT A SOLUTION

Technology has often been used to treat symptoms that should not occur in properly designed agricultural systems. In other words it has been used to replace management and cultural practices rather than augmenting them. In the future, technology will become more expensive both in economic costs but also from a public relations capital standpoint. This does not mean that it will not be used, but rather that it will become increasingly important to be sure that it is used appropriately to increase the value of the product to the consumer not to reduce the cost. Remember the cost is not important to the consumer.

The technology that will probably have the largest impact on agriculture may be in the electronic sector not the biological sciences. This does not mean that biological technology will not be important but rather that the ability to market directly to consumers using the web, the capability to manage inputs accurately on a site-specific basis, and other electronically based technologies may allow us to utilize the biological technology to its full potential.

COMMODITIES VERSUS PRODUCTS

Some farmers will continue to produce commodities. Producing these commodities at the lowest possible price will continue to be the driving force for these people. This will mean they need to be extremely efficient. Appropriate farm size, crop diversity, technology, etc. all play a role in that equation. Others will focus on making products that have enhanced value to the targeted consumer. This value will be gained

as much by how the raw material is produced as how it is processed. Organic farmers have done an excellent job of convincing some consumers that their method of production is better for the environment and results in a healthier product. Both of these perceptions are wrong, but since perception is reality, they can command a higher price for their products. No-till farmers need to capitalize on the environmental benefits provided by using diverse no-till systems by selling that value to the consumer. Carbon sequestration could be part of this value. This approach means the grower gathers the increased value because it is gained by management and salesmanship not by blanket subsidy.

FARMERS NEED TO TAKE CONTROL

The bottom line is that farmers need to take control of their own destiny rather than waiting for others to create this destiny for them. Value added co-ops are a small step in that direction. They are not an end but a means. They provide sufficient critical mass to allow producers to compete with large multi-national corporations. This does not mean they allow producers to use inefficient production practices. If production is not efficient the raw material will cost too much and the co-op will not be competitive. Producing products designed to sell into a subsidized market (sugar, ethanol, etc) contains substantial risks.

Farmers need to take a larger role in funding research. Research conducted by private industry is designed to serve their interests. Research at public institutions is designed to serve the public good. What is perceived as public good may not be good for the producer. Similarly, research funded by commodity groups (corn, soybean, wheat, etc.) is important from a commodity basis, but it in general is not focused on systems impacts. Getting the research you need may mean funding or doing it yourself.

CONCLUSION

THE LAWS OF NATURE AND ECONOMICS WILL NOT CHANGE

This is the prediction that I know will be true. Economic and natural laws will not change. In the past much effort has been put into trying to change these laws rather than on spending time in understanding how they work and how we can use this to our advantage. If we continue to try to change how these laws work through technology and legislation we will continue to fail. If, on the other hand, we concede that we (and our farming operations) are not independent entities but rather only a part of the system. Then we can begin the process of developing a niche for our operation. Not every organism in a system occupies the same niche. Quite the contrary they all strive to find the thing they can do better than other organisms. No-till farmers need to do that. I do not have to list the things we do better. Other speakers at this conference have done that. What we need to do is to focus on taking advantages of those strengths. The probable increase in environmental awareness, escalating energy and fertilizer prices, etc. position us very well to take advantage of the power presented by sound no-till systems.