

CONSERVATION IN PERSPECTIVE - EXTENSION

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I would like to set the "scene" of what farmers are presently faced with and how it may affect what we say and do about soil conservation.

"Soils, Society, and Sustainability" by William K. Reilly is an article in the Sept.-Oct., 1984 issue of the Journal of Soil and Water Conservation. The following is stated:

"Observers of American Agriculture characterize the financial situation of the past three years as the worst since the Great Depression. Even the shrewdest farmers have encountered profitability problems, and the near-term outlook is not promising."

The report went on to say that most farmers are well aware of the extent of erosion on their property and most know, at least in a general way, how to control it. Many, perhaps most, care about their land in ways that go well beyond financial advantage. But, farmers have other things on their minds as well. Increasingly, their number one priority is survival.

A farmer said in this report, "Your cost of production has gotten so high what you try to do is figure out some way to lower your breakeven level. The financial pressures today are so great that you don't think in the long-term like you should. Soil conservation gets put on the back burner because you're trying to figure out how in the world you're going to pay your bills."

On CBC Radio January 31, 1985, it was reported that 13,000 farmers in Minnesota are going to go bankrupt in 1985; 500 in Canada. There has to be some sleepless nights going on for someone. The 64 dollar question is--Are there short term economic constraints to conservation farming? (Remember the question reads short term) If there are, what do we have in the offering?

Conservation is defined in "Soil at Risk--Canada's Eroding Future", Sparrow, et. al. as:

1. The optimum rational use of natural resources and the environment, having regard to the various demands made upon them and the need to safeguard and maintain them for the future.
2. The protection of the soil against erosion or loss of fertility.

Who then is to carry out soil conservation? One could automatically say the farmer. He is the one that manages his soil, but are there not other people involved? Yes, there are other people involved with soil conservation. All we have to do is look at the agenda for the first morning of this workshop to come up with the "others". They are as follows:

- government - elected
- research
- extension
- economist
- agribusiness

Yes, we are all involved, besides the farmer. What we say and do depends on where and what we do in the work place. In the work place, I am an extension worker for Saskatchewan Agriculture as a Soils and Crops Specialist.

Land degradation is a concern to me and I'm sure to all the other people mentioned. This has been exemplified with the Western Premier's Conferences that have been taking place in the western provinces the last three years. Also, by the report Sparrow et. al. "Soil at Risk". What am I, as an extension person, doing or saying about soil conservation? The information that is passed along is the information that comes from research stations, universities, PFRA, agribusiness, economists, other farmers, and

policies that have been set down by governments. So, what this says is that all the people mentioned earlier are doing something in the area of soil conservation.

Soil conservation efforts by others and Extension have and will continue to work well together. However, we will have to strive to do more in getting the knowledge of soil degradation to more and more farmers. This comes out in Anderson, Knapik et. al, Sept., 1984 which states the following: It is evident that substantially more basic research is urgently required on the location and extent of historic and current soil losses, economic importance, risk, and rate of change as well as the private and public pay off of the various conservation methods. Increased awareness by extension services and the public is also required."

I would interpret the "extension services awareness" as the performance we are doing in prioritizing our extension efforts in the field. I agree more emphasis should be placed on soil conservation directly. Is it more important to talk about the production of winter wheat at an extension meeting than talking about soil conservation? Take a look at my meeting schedule for February and March as listed in Table I.

TABLE 1

<u>Topic</u>	<u>Number of Meetings</u>
Winter Wheat	7
Extended Rotations	4
Fertility	4
Chemicals, crop diseases	3
Crops - varieties, etc.	2
Salinity	1

Why does winter wheat rate the highest in the number of meetings? Winter wheat rates the highest because of its newness and farmers want to know more about the growing and marketing of it. The attendance at the first three winter wheat meetings was as follows in Table II.

TABLE II

<u>Location</u>	<u>Number in Attendance</u>
North Battleford	100
Waseca	40
Unity	110

If these meetings were labelled as Soil Conservation Meetings, would we have had the same attendance? My answer is that more people would attend the winter wheat meeting. Farmers want to hear something positive in production that will possibly make him more money than what he is making now. He does not want to hear someone tell him how bad he is treating the soil. He may realize deep down that is a fact, but is not ready to face that yet. The banker and his family are number one and the soil is further down his list of priorities. Soil conservation, if practiced, means change and we as human beings are not eager to enter into something that involves change.

The Extension Division of the University of Saskatchewan just completed an interesting study titled "Agricultural Knowledge Exchange and Decision Making". W.B. Whale, et. al. (August, 1984), U. of S. reported that during the past five years there has been a substantial increase in the volume of knowledge that has potential when applied to agricultural production for increasing production and improving productivity. Soil conservation, of course, would be included in this "volume of knowledge". Through the efforts of extension and other forms of educational activity, the knowledge has been made accessible to agricultural producers. This knowledge exchange and farmers' decision making from the exchange is what was studied by Brock, et. al.

The group of farmers selected for this study were randomly selected from the farmers involved with FarmLab. This included both the University of Saskatchewan and Saskatchewan Agriculture's FarmLab Programs. These

"cooperators" of FarmLab can be classified as innovators of their community and were evenly selected from all regions of Saskatchewan.

The study showed that the process of making a decision is complex. The decision process, in its simplest form (it could get more complex), is the following:

1. Identify a new idea
2. Obtain detailed information about the idea
3. Consult once, twice, or three times
4. Try it on a small scale.

What was identified was that the process of deciding about a new idea involved a combination of consultations. In the majority of cases, the consultations were with at least two and, in many cases, all three--an agrologist, neighbour, and family member. Three sets of hypothesis came from this study and are as follows:

1. (a) A major factor influencing the outcome of the decision process is theoretical and technical evidence of economic benefits to be gained through the new practice.
(b) A primary source for theoretical and technical evidence is the agrologist.
(c) The evidence is preferred to be obtained in person in order to obtain assistance in interpreting the evidence in terms of a particular farming situation.
2. (a) A major factor influencing the outcome of the decision process is personal confidence in ability to implement and manage the new practice.
(b) A primary source for information related to practical application is another farmer who has successfully implemented the practice under circumstances similar to those being considered.
(c) The information is preferred to be obtained in person on the site of the application to allow the farmer to compare specific factors and

project his or her own capabilities as a basis for making judgements about the practice in his or her situation.

3. (a) A major factor influencing the outcome of the decision process is that the new practice can be applied within the farmer's range of financial and labour resource capabilities; or that existing commitments can be adjusted to accommodate the new practice.

(b) Family members, or others with vested interest in the farm operation, are consulted to help relate theoretical and practical knowledge to the farmer's own operation and consider commitments already made for the financial, labour and management resources available.

With this study in mind, how then do we induce change? We induce change by not only talking about winter wheat production, but also the soil conservation aspect of winter wheat. Do we want this change of what is presently happening to our soil? Answer--Yes. Does the farmer realize that things should be done differently to protect the soil? Answer--Yes. Is the Saskatchewan farmer, in general, practicing soil conservation? Answer--No. This no answer is unfair because there are some farmers that are doing the right things to their soil. His neighbour at the same time thinks the opposite because he may feel that summerfallow every second year is the best thing we can possibly do in saving the soil.

Soil conservation is not a new idea. We have been aware of what has been happening to our soil for years. We have been looking at it, studying it, and talking about it since the 1930's. Wind erosion was noticed by everyone. How could you miss it with the sky full of dust for miles and miles. Fence lines were buried leaving just the top of the posts showing. In 1931, 50% of Saskatchewan people lived on farms. In 1981, 20% lived on farms. Nationally, less than 5% of the population live on farms. The shift of rural life to urban life reduced the public concern over soil

conservation. I'm sure it was said "somebody will find an answer someday and everything will be okay".

The answers have not come easy and they are still coming from scientists and researchers. I quote from the 1983-84 Saskatchewan Institute of Pedology Annual Report, Land Evaluation and Soil Quality, Henry, et. al.: "In addition, in 1983, two major deep drilling programs were completed, one in the Blaine Lake area and one in the Radisson area. These programs allowed the completion of studies in the Blaine Lake area and a meeting was held at the town to explain the causes of soil salinity to farmers in a broad belt of land from Leask through Blaine Lake to the North Saskatchewan River."

"Work carried out under the FarmLab/Salinity Program has been instrumental in changing our ideas on some of the causes of soil salinity within the prairie provinces, providing us with better means of dealing with them. This program has clearly shown that a proper understanding of the causes of soil salinity within much of Saskatchewan depends on a knowledge of the hydrology in the subsurface layers (below 2 metres) in addition to quality of soil and salinity at the surface. It is clearly obvious from this work that many of the remedial measures currently recommended to farmers within the province will have to be changed."

Dr. Don Rennie stated more than ten years ago that we must cut down on summerfallowing or else salinity will continue to increase at an alarming rate. Dr. Rennie was referring to excess water when he mentioned "don't summerfallow". Les Henry is working with underground water and how it contributes to salinization of our soil. These two people are working on the same problem from each end--top and bottom. This is creating a large interest in the country. Summerfallowing is being practiced less and favorable comments are coming forward on the reduction of salinity, particularly the field with no summerfallow.

Secondary salinity is salinity that developed after the land was broke. Anderson, Knapik, et. al., Sept., 1984 show estimates of secondary salinity in Saskatchewan as being much lower than some of the original estimates shown in Table 3.

TABLE 3

ESTIMATES OF SECONDARY SALINITY

SASKATCHEWAN

Rennie & Ellis (1978)	
Interpreting Crosson 1976 (map)	4.0 m ac.
Campbell & Biederbeck (1980)	
Interpreting Crosson 1976 (map)	4.1 m ac.
Holm (1982)	4.94 m ac.
PFRA (1983) referencing	
Vander Playm, et. al. 1981	4.0 m ac.
Rennie	
(Pers. Comm. 1984)	3.0 m ac.
This Report - Anderson, et. al.	1.54 m ac.
(using Ballantyne in press)	equal to 3% of land base considered

This data points out that we have to come to a common agreement on how many acres of salinity actually are in Saskatchewan. If the difference is because of different interpretations then that should be corrected. It is important that we are saying the same thing. Therefore, confidence is very important if change is going to take place.

Does the size of farm, kind of farm--that is, straight grain, combination of grain and livestock, etc.--play a role in soil conservation? A study done by Napier, et. al, May-June 1984, Journal of Soil and Water Conservation, "Factors Affecting Adoption of Conventional and Conservation Tillage Practices in Ohio showed that as the scale of farming operations increase, soil conservation practices were used less frequently. This was especially

true for grain farmers. Conversely, farmers who placed more emphasis on livestock production tended to use soil conservation practices more often. Thus, highly capitalized grain producers found it more difficult to integrate soil conservation tillage practices into their farming operations. I'm sure the same can be said considering the different types and different size of the farms we have in Saskatchewan.

CONCLUSIONS

Is the farmer doing anything about soil conservation? To answer, Ben Janostin of Hafford harvested 80 acres of winter wheat in August, 1984. He then planted 1,100 acres of winter wheat. This is what he said at a producer meeting--"I'm tired of having my soil washed away and blown away. I'm just going to sit back and have my neighbour's soil settle in my fields, what a cheap way to get land."

This is one example that is positive, however, if winter wheat economics don't turn out, Ben Janostin could easily change back. Are we all aware of what exactly is going to happen with freight costs when the 31.5 million tonnes are exceeded? When soil conservation is going well, production will go up and then the CAP on freight will be exceeded and we automatically lose approximately 50¢ per bushel.

Freight Example:

North Battleford to Vancouver	
Subsidized Freight	22¢ per Bus.
Full Rate	<u>70¢ per Bus.</u>
	<u>48¢ Extra</u>

So, what has happened is that a ceiling has been put on production--a disincentive to produce. The rail system is involved in soil conservation, but in the wrong direction.

Conservation groups are being started in various locations in Saskatchewan. Swift Current and Weyburn are good examples, to mention just two. A more recent one is the Wilkie Action Committee for Soil Conservation. These developments indicate that farmers are concerned about soil conservation and want to join together to stop soil degradation. The signing of the ERDA Agreement between the Provincial Governments and the Federal Government is another example of cooperation with soil conservation as top priority. The example of PFRA, Agriculture Canada, universities, agribusiness, conservation authorities, extension people, and farmers all working to one end is awesome. The effort will have to be integrated so that all know what everyone is doing. The lines of communications will have to be open at all times with the utmost of cooperation taking place.

Possibly, the most important communications will take place between farmers themselves (Ben Janostin), who share conservation experience with friends and neighbors and often agree to show tour groups what they have accomplished. Many enthusiastic farm producers are the best salespeople of all. (Hubert W. Kelley, Jan.-Feb., 1984, Journal of Soil and Water Conservation).

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