Farmers told SFA and UofM

researchers how their practice of various soil health principles contributed to farm economics:

This and other details can be found on https://www.sfa-mn.org/soil/

- ☑ Reduced fertility expense, eliminated chemical expenses, premium markets for grass-fed beef and organic crops, and increased pasture production.
- Elimination of labor, fuel and equipment costs, yields 20-25 percent higher than county average, elimination of fungicide and pesticides, reduced herbicides use, and reduced fertility costs.
- I Reduced fertilizer expenses, reduced fuel, labor and machinery expenses, reduction in lost fertility, and diversification in income streams.
- Elimination of labor, fuel and equipment costs, improved retention of nutrients, reduced equipment costs, reduced health issues on stocker cattle from grazing, reduced nutrient expense from manure.
- Stopped using pre-emergent herbicide, do not have stalk rot, reduced their nitrogen inputs.

🗹 Etc . . .

From the 2019-2020 National **Cover Crop Survey:**

- ☑ Of the farmers using cover crops, 68% reported better soil moisture management.
- ☑ 70.5% of the respondents said cover crops improved their weed control.
- While the drought year of 2012 showed the biggest yield increases from cover crops, farmers in 2019 still reported modest boosts in soybean, corn and wheat yields of 5.0%, 2.0% and 2.6%, respectively.
- ☑ In terms of fertilizer savings, 49% of corn producers reported reduced fertilizer costs, as did 41% of soybean producers, 43% of wheat farmers, and 53% of cotton producers.
- Meduced herbicide costs in soybeans (38.7% of producers), corn (39%), wheat (31.9%) and cotton (70.6%)

Source: 2019-2020-National-Cover-Crop-Survey.pdf

From the Mail Box:

My Story

"I grew up in Minnesota, not living on a farm, but living adjacent to a farm (and the Minnesota State Prison Farm, too.) Farm children were collected from miles around to attend my elementary, junior high and senior high schools. At the county and state fairs, I was fascinated by the animals, the 4H exhibits and the farm implements, but the process of farming, raising animals, and managing natural resources always stayed peripheral. As an undergraduate at the U, I crossed the fairgrounds and walked along the fields and barnvards of the Agriculture Campus in Saint Paul in order to catch the bus to the Minneapolis campus: my mind was on other things.

Living out of state for the next decades, I relished visits back to the Land of 10,000 Lakes to see family and to explore the wonders advertised by Minnesota tourism.

When I returned for retirement, I looked forward to exploring the State and enjoying its lush possibilities. I have had wonderful experiences, but I also have started learning there is another side to the mythology: 1/3 of the State water resources have been destroyed beyond recovery, another 1/3 have jeopardized water resources on the verge of destruction, and the last 1/3 could be lost without rigorous oversight. I was appalled. That was just beginning of new learning about the mismanagement of natural resources in Minnesota.

Your Sustainable Agriculture and Forestry Scholarship offers hope, not only for what sustainable approaches can accomplish, but for what people who care can accomplish. I am so grateful for an opportunity to get on board with your vision. This is a step in the right direction for me and for Minnesota." All best, Cheryl B.

(Cheryl has included a bequest in her will).

"I just now got to reading your newsletter from May, 2020, and I don't think I have ever told you how wonderful I think it is that you do this. It gives me hope, when I see so many problems in the world, that good really is being done and that there are young people who get it and are focused on doing something about it.

Love. Michelle"

The purpose of this scholarship

is to provide financial aid to individuals growing up in southeast Minnesota who are committed to sustainability in the fields of agriculture and forestry, have demonstrated leadership and

communication skills, and are interested in pursuing a career in fields related to and advancing practices of sustainable agriculture and/or forestry. Sustainable practices ensure clean water, healthy regenerative soils, and vibrant rural communities for future generations.

The scholarship fund seeks to find the next generation of professionals who will learn how to manage our environment on a completely sustainable basis, provide food, fiber and shelter for people, and in the process protect our precious natural resources for our children and those yet to come.

If you too are concerned about the indiscriminate use of chemicals which are killing our pollinators, polluting our water, and negatively effecting our food supply, then JOIN US by donating today. Contributions to the Fund are fully tax deductible.

Methods of contributions are numerous:

- \checkmark A check or credit card is wonderful.
- \therefore Matching funds from employer.
- ☆ Direct transfers from an IRA.¹
- ☆ Endowments through your Estate Plan, wills or life insurance policies.¹

1) See website for method and be sure to contact your financial advisor, accountant or lawyer for advise.

The Scholarship Endowment Fund is structured such that only earnings from the invested capital are used to pay for scholarship(s) and Fund operating expenses. This rule assures that the Fund will operate in perpetuity. The Rochester Area Foundation (RAF) is the steward of the Fund. RAF's administrative fees are 1.25% of the annual fund balance and are amply covered by RAF's investment performance. Neither scholarships nor fees are reducing the endowment equity! * There is a cost for credit card donation

Each stamp used on the envelopes in this mailing also represents a donation to the "Save the Vanishing Species" Conservation Fund.



To access the website with all its references, current and past newsletters, scholarship information, donor list and more, use your smart phone to scan the QR code.

For more details and references related to articles in this newsletter, visit our website:

www.protectourresources.org

Printed on at least 30% post consumer recycled paper. Forest Stewardship and Rainforest Alliance Certified.



NAME AND ADDRESS OF TAXABLE

How a Farm-Business Paradigm-Shift Achieved Significantly Expanded Use of Cover Crops

in 2017 Brian DeVore, author of Wildly Successful Farming, traveled in Indiana to learn how a public private partnership called the Conservation Cropping System Initiative (CCSI, formed in 2009) had helped get 8% (around 1 million acres) of the Hoosier' State's crop fields blanketed in rye and other soil-friendly plants throughout the fall, winter, and early spring—times when corn and soybean fields are normally bare. Indiana's success has farmers, soil scientists, and environmentalists across the country excited about the potential CCSI holds as a national model for bringing our agricultural landscape back to life.

Most people in

agriculture agree that cover cropping is a smart practice from an agronomic, economic, and environmental perspective, but frustratingly few farmers have adopted it. One recent estimate is that nationally only around 2% of U.S. farmland is

consistently cover cropped. That means for some seven months out of the year, most of the Corn Belt's rural landscape is devoid of living life, both above and below the surface.

On paper it doesn't make any sense, but Indiana is leading the way in cover cropping. It does make sense when one takes a closer look at Indiana's intensive team effort to get more of its land growing plants (and roots) for more than a few months out of the year. The Conservation Cropping Systems Initiative consists of federal, state, and local natural resources agencies working with farmers and an array of private businesses from fertilizer and seed companies to implement dealers.

CCSI has made progress in getting people to stop viewing soil as merely a plant stand and temporary holder of chemical fertility. Farmers now say, "feed the soil, not the plant." But to make the changes permanent the CCSI members realized they had to team up with the players with which the farmers are comfortable working on a daily basis: fertilizer suppliers, seed dealers, co-ops, crop advisers, and implement companies. At first it was a bit of a hard sell to get input suppliers on board with promoting cover cropping, since it's a technique that can eventually result in reduced demand for fertilizer, chemicals, and other products they are in the business of supplying. One CCSI member visited businesses throughout Indiana and talked about how helping farmers build healthy soils can open up new markets—they need to purchase cover crop seed from someone, for example,

All Human Life Depends On It:

"Upon this handful of soil our survival depends. Husband it and it will grow our food, our fuel, and our shelter and surround us with beauty.

Abuse it and the soil will collapse and die, taking humanity with it." From Vedas Sanskrit Scripture 1500 BC

A company offering agronomic, grain handling, fuel and crop insurance services got into offering an array of cover cropping services, from soil tests and species selection advice to planting and termination of the plants in the spring. The owner stated that they now keep their applicator drivers busy at a time when they would normally be idle or underutilized.

Another key player in CCSI's success has been implement companies, which not only sell the planters to put on cover crop seed, but can offer custom field work or modify equipment for seeding. One equipment dealer mentioned that the interest in modifying tillage equipment so that it could plant cover crops "exploded."

100%

ofyour

donation

goes to

build this

endowment

fund!*

and chemical application equipment can be modified to spread seed, he suggested.

It worked. Here are some examples.

The 2021 Scholarship Applications **Open on January 15** Please help us find qualified candidates

Tell friends and neighbors about the scholarship. Two of our recipients did learn about it this way. Feel free to send us contacts to whom we can send information. The scholarship is for \$5,000 and recipients are free to apply again in following years. The purpose of this scholarship is to provide financial aid to individuals growing up in southeast Minnesota who are committed to sustainability in the fields of agriculture and forestry, and have demonstrated leadership and communication skills.

> Details are available on our website: www.protectourresources.org

This new custom enterprise made up 30 to 40 percent of his firms business. As farmers were reporting back major benefits from planting cover crops he could see his business expanding further to become half of his business. He was excited about the development.

CCSI is holding field days and workshops and farmers are reporting on their experiences. One farmer explained that he had doubled his organic matter to 4 percent which meant that the resultant nitrogen from increased biological activity is basically a source of fertility he now does not have to purchase, amounting to a savings of \$40.00 per acre. He also pointed out that each percent of organic matter in the top 12 inches of the soil profile is worth an inch of water storage. And all this results in increased yields and reduced input costs which translates into increased dollars. \$120.00 an acre for him.

One farmer reported that his use of cover cropping and other methods that build soil health have resulted in a net per-acre value of around eighty dollars, a return on investment of over 320 percent.

How does this pertain to Minnesota. Well, the Land Stewardship Project and the Sustainable Farming Association of Minnesota both conduct workshops and provide guidance to farmers right here in SE Minnesota. Help them replicate the Indiana success story.

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The Harmful Linear Economy is Based on One-Way Extraction From Nature & Society



Tilling and bare ground kills microbes that give soil its life. The result is lifeless dirt.

The soil, the very basis of our life on Earth, and our humanity is under threat. False perceptions guide our actions:

- + Humans are separate from the Earth;
- + The wealth creation in the market is separate from the contribution of others - nature, workers, women, ancestors:
- + Actions are separate from consequences, and rights are separate from responsibilities.

These false perceptions separate humans from nature, soil from society, ecology from economy. The paradigm of separation and fragmentation leads to the law of one-way extraction from nature and society, of taking without giving. Its practitioners ignore the responsibility of giving back to nature and society and in so doing foment ecological crises and perpetuate social and economic injustice.

The last century has been dominated by an industrial agricultural model that came out of the war industry and focused on chemicals and fossil fuels. It has destroyed the soil, uprooted farmers, produced illhealth, created waste at every level, including 30% of food waste. It is a major culprit in the destruction and erosion of water, land and biodiversity, as well as greenhouse gases and large scale unemployment. It extracts the fertility of the soil and the value created by farmers

and gives nothing back. Farmers are being forced to spend more than they can earn, using more energy than they can produce as food.

This has led to the crisis faced by family farmers, the crisis of debt and suicides. Industrialized agriculture is no longer a food system but a commodity production system, where grain production goes for biofuel and animal feed, and not for feeding people.

In the perspective of the linear economy, what counts is costs and revenues in the business cycle. Artificial inputs, land and water are the costs, and marketable products are the revenues. Ecosystem services, biodiversity, nutritional value of food and feed have no value as they cannot be measured as costs or revenues within the business cycle.

The text and graphics on these two pages are derived from the publication TERRA VIVA. Our Soil, Our Commons, Our Future: A new vision for Planetary Citizenship published by Navdanya International, Firenze, Italy, used with permission. The full copy of the manifesto is available on their website www.navdanyainternational.it and on our website www.protectourresources.org

Soils are one of the most diverse habitats on earth and home to over one fourth of all living species on earth. The millions of organisms found in soil are the source of its fertility. One acre of soil contains 6 tonnes of organisms, which translates to 0.37 pounds of life per square foot.

Soils provide critical ecosystem services for life such as storage, filtration and transformation of nutrients and water, carbon storage and cycling, provision of habitat, species and genetic biodiversity. The greatest biomass in soil consists of microorganisms, fungi and protozoans. Soil microorganisms maintain soil structure, contribute to biodegradation of dead plants and animals into nutrients, and fix nitrogen. Earthworms, ants, termites and some small mammals help create habitats for smaller soil organisms by building resistant soil aggregates and pores and also regulate the availability of resources for other soil organisms since soil structures become hot spots of microbial activities.

Soils are the largest sinks of carbon and help mitigate climate change. Soil is at the same time both a source and a sink of greenhouse gases. It contains worldwide twice as much carbon as the atmosphere and stores more than 4000 billion tons of carbon.



The United Nations dedicated 2015 as the International Year of Soils "to make people aware of the crucial role soil plays in food security, climate change adaptation and mitigation, essential ecosystem services, poverty alleviation and sustainable development."

Industrial civilization has distracted us from considering our relation to the soil, based on the arrogant belief that the more we conquer and destroy nature the more 'developed' we are. This has led to the severing of our relationship with the land.

We need a new pact with the earth and the soil. A pact that recognizes that we are the soil, we grow from the soil, we are sustained by the soil. This is the new renaissance-a new awakening that soil is alive and that taking care of the soil is of fundamental global importance and the most important work that humanity can do.

> is also an ecologically intensive and productive agriculture. The intensity of production is not built on an elevated

agriculture.

of Giving Back to Society

The new agriculture . . .

- Joint begins with giving back fertility to the soil through organic methods, and ensuring a fair and just price to the farmers to enable them to stay on the land and continue their work of providing bountiful and nutritious food to citizens and communities.
- replaces the linear law of extraction and exploitation of the soil and resources, with a circular law of return that guarantees resiliency and permanence, sustainability, justice and peace.
- is an Agroecology. Regenerative agriculture is today emerging across the world as an alternative to industrial
- is strongly grounded on healthy and living soils. The fertility of the soil is well-cared-for and helps considerably in reducing the dependency on fossil fuels.

use of external inputs but is rooted instead on diversity, multiple cropping, rotation, mulching and well coordinated agronomic cycles that combine soils, crops and animals into a balanced whole.

- is rooted in important land-labour institutions such as the family farm, the rural community and commons.
- is basically self-provisioning. The main resources needed for production are produced and reproduced within the farm itself or at the level of the rural community.
- The new economy is a circular economy.
- ☑ Its first objective is to take care of our planetary home, the soil, the biodiversity, water, rivers, oceans.
- ☑ Its second objective is to ensure that all human beings are able to participate in a living economy as creators, producers and beneficiaries.