

Resource Management in a Dynamic World: The Economics of Soil and Water Conservation: Soil and Water Conservation: What Would it be if Hugh Hammond Bennett Had Been An Economist ?:

Good morning. It's been a decade since retiring from the USDA SCS, after forty years of public service. However, because of options offered by both AFT and SWCS, I've been privileged to continue working for soil and water conservation. Also, I've had the unique experience of being one of the five governing Board members of my local Soil Conservation District in MD. My county--Anne Arundel--begins at the South side of Baltimore. Our Eastern boundary is the Chesapeake Bay. Although pollution attributed to use of land, along with the loss of farmland to a growing population, are important issues, we help agriculture continue as a viable industry, as it has for over 300 years.

As a Charter and Life member of SWCS, along with the honor of being a Fellow and Hugh Hammond Bennett Awardee, I'm pleased that your Program Committee invited me to be one of many to speak, at this, our 47th Annual meeting. I would have been more at home addressing one of the other two subthemes, i.e. values or policy, but I suspect the role of economics was assigned as a challenge. What it made me do is to think through the proper role of all disciplines required in conservation programs.

I did labor for several months on a paper that my time slot precludes using this morning. I admit my "rear-view mirror of fifty years" made a short paper impossible in a dynamic world. Some questioned the title. Hugh H. Bennett wasn't an economist. He would have resisted being boxed-in by definition. Louis Bromfield observed that Bennett was "simple and direct, with no time for pomposity--one who translates research and knowledge into action and achieves results". During his time economists did not have a comprehensive tool, the Epic model, to analyze erosion's effect on productivity, nor any of the other modern capabilities for use today by resource economists.

I have assumed (as an act of faith) there would have been a national presence, at some time, in some form, to bring soil erosion under control. History cannot be changed. The Nation is grateful that Bennett, with his knowledge of soils and the zeal and persistence required, was able to lead the Nation to enact and implement a national conservation program, in time. He created a distinctly new profession: Soil Conservationist. Bennett was concerned about the long-term productive ability of soils that were eroding. The per acre yields of his time, had not yet experienced hybrids, mechanization, chemicals, and other technologies that mask the impact of erosion. He was pioneering the concept of a sustainable agricultural system. Did the soil and water conservation programs, of the early 1930's, fully utilize the knowledge of farm economists ? What were the practical options for early direction of soil conservation? Has that history influenced the future of soil and water conservation programs ? In what way ? Are the present conservation programs adequate ? How do we know ? An SWCS Conference, scheduled for March, 1993, has a timely theme,

The Next Generation of Agricultural Conservation Policy.

As a soil conservationist I, and many others were trained to recognize the value of other disciplines, the variety of knowledge needed to provide options for solving problems of the users of land and water in the field. If we felt the need for assistance we called on a network of offices established by SCS to provide technical assistance for complex problems. These highly skilled people were (still are) the leaders in soils, agronomy, biology, engineering, forestry, economics, and included all disciplines needed in soil conservation work.

Paul A. Samuelson in writing, "What economics is" lists five definitions, but ends with a generally agreed statement: "Economics is the study of how men and society choose, with or without the use of money, to employ scarce productive resources, which could have alternative uses, to produce various commodities over-time and distribute them for consumption, now and in the future, among various people and groups in society. *Economics is one among many, by bordering on other important academic disciplines. Sociology, political science, psychology, and anthropology are all social sciences whose studies overlap those of economics. Economics also draws heavily on the study of history.*" For this talk I reviewed history, for indeed we do stand on the shoulders of many who have gone on before.

Elie Wiesel, Professor of Humanities at Boston University and Nobel Peace Prize awardee in 1986 says, "To learn means to accept the postulate that life did not begin with my birth. Others have been here before me, and I walk in their footsteps. The books I have read were composed by generations of fathers, sons, mothers and daughters, teachers, and disciples. I'm the sum of their total experiences---and so are you".

Thus, when I ask how Bennett, and other responsible leaders, viewed the *Economics of Soil and Water Conservation*, I have to draw some conclusions about their views from the history of their time. Several books list Bennett as author. There have been interviews with some who were close to Bennett. Many good books have been written about the soil conservation movement. In 1942, Arthur C. Bunce in his excellent work, *Economics of Soil Conservation*, dedicated to Bennett, wrote, "In broad terms social action to achieve conservation is desirable when:

- (1) It would be economic for the individual to conserve but does not,
- (2) Conservation is not economic for the individual but is economic for society, and
- (3) The intangible ends desired by the majority in a democracy can be attained only by collective action.

He went on to say, "Since the government is concerned with both conservation and prices of farm products, these inter-relationships should be studied to avoid spending funds for conservation while increasing prices of erosive crops". He recommended use of soil conserving crops as an alternative.

In 1965, Robert J. Morgan's *Governing Soil Conservation, Thirty Years of the New Decentralization*, carefully documented the several soil conservation programs after twenty-five years of implementation. This text should be required for any who assume that national conservation programs were implemented without controversy, including the views of some economists.

It was my good fortune to have met Chief Bennett, in his SCS Washington office, prior to leaving the Marine Corps, soon to resume my conservation career in Idaho. We did not talk about economics. He had recently been abroad and said, "Young man your task is to help landowners know the value of having their own soil conservation district". He waved a new bulletin about soil erosion and wished me well as a WWII veteran returning to SCS in Idaho. I had left three years earlier as a P-1 (now GS-5) soil conservationist (\$2000/year). Little changed, including my grade or salary (\$2,540/year). Ruth and I had our first daughter, Susan. We left D.C. May 1, 1946. In July, 1946 the Volume I, No. 1 issue of the *Journal of Soil and Water Conservation* was published. It had Bennett's article, *A National Program of Soil Conservation*. This writing was of his estimate of the factors essential to a national soil conservation program. He wrote, "From the beginning, one cardinal principle dominated and guided this new land program for a permanent and more fruitful agriculture. --- This was, and is today, as follows: Effective prevention and control of soil erosion and adequate conservation of rainfall in a field or on a farm or ranch, over a watershed, or any other parcel of land, requires the use and treatment of all the various kinds of land comprising such areas in accordance with the individual needs and adaptabilities (or capabilities) of each different piece of land having any important extent". He went on to say, "The use and treatment of a given area must, of course, be determined not only by its physical characteristics, but also, wherever possible, by such other considerations: available facilities, implements, power, labor, and market facilities--as well as by the preference of the farmer, an ability to learn, a willingness to try new methods, his financial means, size of farm, type of farming he wants to follow, and his persistence. Furthermore the land to be treated must be considered in whatever pertinent physical relation it may have to any adjacent or neighboring tract, and to the entire farm, ranch, or watershed".

When the preliminary program for this meeting was examined by Melville (Mel) H. Cohee at his Wisconsin Green Vista Farm, he wrote to me saying, I have serious doubts that any other SCS employee knew Bennett's thinking and perceptions about the economics of conservation as I did". I value his six page letter. Mel pointed out that in the May, 1945 SCS magazine, he stated that basic guiding principle, as written later in the 1946 *Journal of Soil and Water Conservation* by Bennett. Economist Cohee also believed this paper an opportunity to strengthen even a somewhat struggling SCS program today by endorsing a realistic, coordinated conservation program,

wherein the economic and the physical ingredients are meshed together (as any creditable economist would do).

Bennett spoke of soil conservation as including any and all measures that will in any way increase the productivity of the land and cause the land to keep producing satisfactorily.

On February 15, 1951, Secretary of Agriculture Charles Brannan stated "The basic physical objective of soil conservation activities by Department agencies shall be: The use of each acre of agricultural land within its capabilities and the treatment of each acre of agricultural land in accordance with its needs for protection and improvement".

Bennett recognized that the physical specialist needs to understand the economic implications of physical changes, just as the economist needs to understand the physical factors which underlay the problem. He had a vision, that the importance of the land to national welfare demands consideration of the future and recognition of the land as a resource to be defended--forever--in order that it may remain productive and continue to support the population. The land is owned and used by many--National conservation action must spring from the people on the land, and to a large extent, be advocated by them as individuals, with the help of the government.

Prior to retiring (1951), Bennett visited Idaho and contributed to their early efforts to form a State Association for SCD's. In 1959, at the Society annual meeting in Rapid City, South Dakota, Bennett joined the Postmaster General in introducing the first soil conservation stamp. That was August 26, 1959. The stamp cost 4 cents. I chaired the SCSA Publicity Committee.

If you are still with me, want to follow my thinking, it will be in three brief steps:

First, what about the earliest American conservationists? What role did economics play in their thinking?

Second, what were the options, for the leaders of the agency created, first by the Administration, and then by Congress for a national soil conservation program? Why were the programs that are now labeled as basic or traditional adopted? Would they be as we know them now had Bennett been an economist?

Third, what does the past imply for future direction of soil and water conservation policies and programs?

First, in colonial days nearly everyone was a farmer. Even the preachers and the doctors farmed part-time. Farming developed near here in the 1600's. Later, the more adventurous explored the backwoods and carved out farms.

The best soils were in river valleys, formed inland towns. So vast was the land to the West, it did not seem possible that there could ever be a shortage. However, there are early references to "worn-out" land in the 18th century.

Farm publications told that the economic causes of soil erosion was a system of farming dominated by clean-cultivated row crops. Efforts were made to disprove the fallacy that it was profitable to waste land, and the destruction of the soil had results beyond personal interests by reducing moral, social, and intellectual advantages. SCS publication No. 449, tells of John Taylor. A Virginian (1753-1824) he was a wealthy farmer, who like Thomas Jefferson, wanted to preserve the old order of agriculture. The "Utopia" of Taylor's dreams was a nation where the soil was well-cared for and the farmers controlled the government. He stated a view that later was to become one of the principles of Bennett's conservation program. It was that the well being of farmers and the preservation of soil were necessary to the well-being of the country.

In 1910 Charles Van Hise noted that, "Conservation means the greatest good to the greatest number--for the longest time". To many the term conservation became a synonym for the good life, in many ways a moral issue. My review of early U.S. history reveals little about the influence, or the role of economics, in support of a national soil conservation effort.

L.C. Gray had suggested in 1913, that the heart of the conservation problem is, "the determination of the proper discount rate on the future with respect to the utilization of our natural resources". This is still the challenge, even today.

Second, Bennett, after graduation from the University of North Carolina in 1903, took the Civil Service exam for Chemist in the USDA Bureau of Chemistry and Soils. On July 1, 1903 he was surveying soils in Davidson County, Tennessee. In 1908, his Bureau established a division of soil erosion. In 1909 his agency published Bulletin 55, *Soils of the United States*. That document had the statement much quoted, "The soil is the one indestructible, immutable asset that the nation possesses. It is the one resource that cannot be exhausted, that cannot be used up".

In April, 1928 after years of investigation the USDA released Circular 33, *Soil Erosion as a National Menace*. This was co-authored by Bennett and W.R. Chapline the Inspector of Grazing, Branch of Research of the U.S. Forest Service. That publication stated, "Not less than 126 billion pounds of plant-food material is removed from the fields and pastures of the United States every year. Most of this loss is from cultivated fields and abandoned fields and overgrazed pastures and ranges."

There are national associations for the preservation of wild-flowers and for the preservation and propagation of wildlife but none for the preservation of the soil.---Erosion is a very big problem. It is doubtful if the farmer can handle it alone". In 1929 Congress appropriated \$ 160,000 to USDA. It was for Bennett's Bureau, "to lay the foundation to procure an adequate appropriation for the Department in cooperation with the states where possible to conduct experiments" as stated by Texas Congressman James P. Buchanan.

The forces that eventually led to a national program for soil conservation were underway, including Bennetts strategy to: shock the nation of the menace of soil erosion, need for quick action, accelerated research for the best methods of control, and gaining of support of influential leaders. The Depression causing high unemployment, coupled with the Dust Bowl, widespread distress in agriculture, farm failures, and a general disillusionment with the laissez faire capitalism of the 1920's and 30's were also reasons for the first national effort to control soil erosion. Secretary of the Interior Harold L. Ickes established the Soil Erosion Service (SES) in 1933. He bypassed specialists in agriculture who differed over the extent and character of soil erosion and the best methods of control. Bennett, who had spent nearly twenty years overcoming the lack of support for soil conservation accepted a transfer to Interior as the Chief of the newly created SES. Later, but prior to Congress enacting P.L. 74-46 establishing the SCS (April 27, 1935) to "provide permanently for the control and prevention of soil erosion, and thereby to preserve natural resources" the SES, with all its resources was returned to USDA. It was, by then, an agency with over 13,000 employees, about the number SCS has today. By September, 1936 employment of WPA relief labor reached a peak of 23,709 spurred by the needs of the drought-relief program. They were directing over forty erosion control demonstration projects on small watersheds varying between 25,000 to 200,000 acres.

What were the options that may have been considered by the early leaders of as they established a national program? What economic thought would have contributed to a program? Why has the Nation been required to enact additional laws, i.e. Small Watersheds, Great Plains, RC&D, I&M authority, RCA, FSA-- when P.L. 74-46 was as broad an authority as any agency will ever be given by Congress? Was it because of lack of use?

The Secretary of Agriculture was given broad authority to reorganize the Department by consolidating old agencies, or parts of them, with the SCS. In addition he was free to carry out erosion control operations either through existing channels, such as the state extension services, or by creating new lines of authority to each individual farmer. In 1937 the President sent each state the model for an enabling act to create local soil conservation districts, through a state directed Committee, Commission, or Board.

The Model SCD Enabling Act encouraged thought be given to some method of regulating the use of land causing problems. Not all states adopted this provision, it has been rarely used, and Bennett resisted an attempt by the Secretary to deny SCS assistance to a State without that provision. His reasoning was that more time would be needed on this issue. Bennett's article in 1946 ended, "Is there an alternative to the kind of soil conservation program I have described? The options were really only two: 1) Outright and absolute governmental regulation on the use and treatment of all lands, or 2) despicable abandonment of hope. Which of these three do you prefer?" By the third he meant the basic or traditional approach he described in the July, 1946 article. There were some land purchases, using Bankhead-Jones Title III authority, leading to "Land Utilization" projects. I had one in Idaho, later transferred to the U.S. Forest Service. It had been sodbusted HEL that SCS converted back to grass. Another option was conservation compliance. The Supreme Court decision, that led eventually to the Agricultural Conservation Program, was an opportunity to consider tying all "Farm Program" benefits to stewardship. In the 1920's the Federal Bank at Houston had adopted a policy of requiring all vulnerable fields to be terraced before money is loaned on the land. The bank had employed an erosion expert, who not only decided whether a property upon which a loan is asked needs terracing, but also went out and instructed the farmer how to build a terrace, if he was unacquainted with the engineering side of conserving soil. Secretary Brannan had sought linkage of commodity and conservation policy, but did not succeed.

Other possibilities were contract rights, taxation, and the use of police power and zoning. This concept surfaced during the discussions leading to the "Sodbuster" provision. There are some who say that in the 1930's the Soil Erosion Act was a national groping to replace the long held emphasis on private gain, with a new ethic of defining the collective good for those yet to come as well as those living today. It was enacted in that same era as TVA, REA, and Social Security.

Bennett was the Chief of a new agency at a time when the Nation was being challenged to seek a balance in the use of renewable natural resources. That balance would only be achieved when the living gain their necessities without robbing the opportunities of the yet unborn. Donald Worster writing for TVA's Forum (Vol I, No. I) said "The program of soil conservation initiated in 1935, along with the larger idea of rural conservation of which it was a part, was expected to be one of the clearest expressions of this social ethic". He wrote "that the USDA-SCS has itself been heavily responsible for the post-Depression effort to think technologically, not socially or ecologically, by offering scientific solutions to land problems. Within a few short years of its founding the Service came to speak the old familiar language of the marketplace, of private gain, of technological fixes".

Worster fails to give credit for a principle used from the beginning of the conservation programs. It was the emphasis on the planning process. This consisted of acquiring the necessary data such as a soil survey, using research and experience to present alternative solutions to the user, recognizing the total ecosystem, the schedule for application of treatment based on standards and specifications, and the importance of proper operation and maintenance. FOTG's became the Bible for conservation plans and application. Cost-return information has given way to Conservation Effects. That economics drives the decisions on use of private lands for farms, ranches, or forests, is a given. There is an element of stewardship, but the allocation of land to the use intended by nature requires an economic rationale.

What has economics contributed to soil conservation? P.L. 566 caused SCS to add Economists, because of the B-C ratio. NEPA (Environmental Impact Statements) required Biologists.

I believe Bennett would have supported Socioeconomics research for:

- Better information on the physical, hydrologic, chemical, and biological linkages between conservation practices and water quantity and quality so that realistic assessments can be made,
- Identification and demonstration of cost-effective conservation practices,
- Information on different categories of landowners and land users in order to market conservation systems relevant to each group, and
- Analyzing and measuring the social costs and benefits and development of techniques of social accounting.

Third, what does the past portend for the future?

We know the voluntary, incentive-based, first-come, first-served approach prevailed. It is still defended as the first option. A major change, still being tested as a valid approach to enforce conservation, was enacted in the Food Security Act of 1985 and affirmed in the Food, Agriculture, Conservation, and Trade Act of 1990. The Conservation Provisions asked farmers to practice stewardship to qualify for farm program benefits. The four Conservation Provisions, a mix of incentives and possible sanctions, revisited in the 1990 Farm Bill, could well form the outline of national soil and water conservation programs into the next century. However, CRP contracts expire in ten years, and the linkage of conservation and commodity policy, as a leverage, depends on farmer participation.

Stewardship is still suggested as an obligation of the users of the Nation's land and waters. However, the view that society benefits at the expense of landowners is now contested as a "taking" unless there is compensation to the resource owners.

The World Resources Institute is researching why soil loss is not depreciated. National Academy's Board on Agriculture is due to report the results of their study early in 1993. They are concerned about soil quality and other pertinent issues.

The idea that economic discounting is based on a notion that all resources belong only to those today is one reason that conservationists feel that discounting unfairly taxes the value of their efforts. Could Bennett, had he been an economist have solved that problem raised by L.C. Gray in 1913 ?

In the early Reports of the Chief of SCS to the Secretary of Agriculture (1936, '37, '38, and '39) there are several references to farm economics: "In the final analysis all activities of SCS may be challenged with the queries: Are they economically and socially justifiable ? Will they yield a dividend not only to the farmer but to society as well ? In short will they pay ? To answer these questions economic research is essential.--- And if the individual, because of economic pressures, cannot afford to conserve his land, then it becomes the responsibility of society to step in and assist him".

The classic Yearbook of Agriculture, *Soils and Men* (1938) has an article by Bennett and W.C. Lowdewermilk (Chief of the SCS Division of Research). They wrote, "From an economic and social standpoint, the implications of soil erosion are extensive and important.---It is pertinent to observe that soil conservation, in its larger aspect, involves a complex cause-and-effect relationship between the physical process of soil removal and many of the social and economic ills besetting agriculture.---There is a definite interrelationship between erosion and economic and social ills. These are now under investigation by the Bureau of Agricultural Economics and the Soil Conservation Service. Until the investigations are complete, any discussion of this phase of the problem must be based largely on observations and field experience". I could quote other statements from books authored by Bennett with substantial references to farm economics in those early days of a national soil conservation program..

The off-site impacts of improper use of land and water now loom more important for government programs than maintaining agricultural productivity. The federal initiative of rewarding stewardship activities by re-coupling of farm programs to environmental concerns will again be debated. The Clean Water Act, when reauthorized, will impact soil conservation.

Would soil and water conservation programs be different had Bennett been an economist ? He would have been a good one. Obviously, we will never know. However, after a review of the history leading to the establishment of a national program for soil and water conservation sixty years ago next year, I conclude it would be similar to that known and accepted in the 1990's. The Conservation District concept, along with local governance by thousands of volunteers, is important.

They represent the realistic methods that are acceptable. Wendell Berry said at Lexington in 1991, "People cannot be adequately motivated to care for the land by general principles or by incentives that are merely economic. That is, they won't care for it merely because somebody pays them to do so.--- A Nation will destroy its land and, therefore itself if it does not foster in every possible way the sort of thrifty, prosperous, permanent rural households and communities that have a desire, the skills, and the means to care properly for the land they are using.---If the human economy is in practical harmony with the nature of the place, then the community is healthy".

In Washington, D.C. The National Wildlife Federation has a Hall of Fame. Next to Gifford Pinchot (1865-1946) and Aldo Leopold (1886-1948) is Chief Bennett (1881-1960). The inscription reads: "Soil conservation found its voice in H.H. Bennett. In his early career as a soil surveyor, Bennett spoke tirelessly with farmers and land authorities of the importance of conserving soils. When the SCS was established in the face of the "dust bowl" of the 1930's", Bennett as founding Chief, led the SCS in solving the Nation's unprecedented erosion problems. As Administrator until his retirement in 1951, Bennett's expertise and dedication were at the heart of the program that reclaimed America's damaged soils". Other pictures are Thoreau, Ding Darling, John Wesley Powell, and Ira Garbrielson. None were economists. These were the early environmentalists that left for you and me, and those yet to come, the Forests, the Parks, the Wildlife Refugees, and Soil Conservation. They were the inspiration for the conservation organizations that represent millions. Lest our Society forget our beginnings we owe Chief Hugh Bennett, and others, an understanding that the national soil and water conservation programs they developed involved many disciplines, including the role of economics. Meeting in Des Moines, Iowa in 1995, to celebrate fifty years of a Society dedicated to advance the Science and Art of Good Land and Water Use offers another chance to do just that.

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