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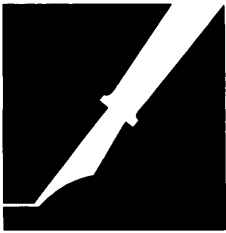
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## PEN POINTS

### Privileges, not rights

Jim Jacobs' article on the unexpected consequences of the Food Security Act [*JSWC*, September-October 1989, pp. 456-457] brought up some very good points. However, while I agree with most of the points, there is one that I cannot accept.

He says that the Food Security Act has an utter disregard for "individual rights." What rights are being disregarded? The public has not decided "that a wetland owned by an individual should not be disturbed," only that if they do disturb that wetland that certain government monies will no longer be available to them.

Farmers do not have an inherent "right" to cost-share and price supports, any more than the average wage-earner has an inherent "right" to their salary regardless of how they do their job. In every aspect of life, Americans have become enamored with declaring their "rights." Most of those rights do not exist. There are privileges that we must earn, but few rights. Let's stop talking about our rights, and think a little more about our duties.

Annora Equall  
Havre, Montana

### On chemical dependence

American agriculture, like our society, is chemically dependent. The removal of chemical pesticides and synthetic fertilizers from food production would cause the whole system to crumble. Our dependence is nearly total. Though it's considered impolite to point out the chemical dependence of friends or family to booze or pills, addiction means the same thing whether it's applied to a drug user, our soils, or society.

We have misused our soils, mining our fertility, compacting structure, gassing microbes, and allowing tons to wash away from our hillside fields. This once great resource, intended to last for generations, is becoming exhausted. Thoughtlessly, we have taken too much out and put little back. By whatever measure, our once great land is disappearing into streams and suburbs—sick and sterilized. Because

the goal has been production at any cost, we continue to pour on expensive fertilizers to mask the soil's loss of natural fertility. The quality of the crop, its nutritional value to man and animal, is actually decreasing.

Against competitive insects, fungi, and weeds, we use poisons. Our dependence on pesticides means we've neglected other crucial biological and ecological practices. Instead of breeding varieties resistant to pests, we've chosen to breed varieties resistant to pesticides. When pests, insects, or weeds become resistant to pesticides, which is easy for them with their large populations and breeding capacity, we find another, more toxic material. Instead of working with our farms and the natural orders of diversity and sustainability, we find ourselves at war with Nature. Instead of following natural rotations in the field, we plant the same crop year after year, creating perfect opportunities for increasing levels of pests. We've created a system that depends on chemicals: they enter our environment and they enter us.

I don't know a farmer who enjoys using chemicals, but faced with a mortgage payment and a crop-threatening pest, the choice is inescapable, and you spray. Farmers dance to several tunes, none of them their own. Consumers demand cosmetic perfection. Grocers demand constant supply and longer shelf-life. Processors demand undamaged crops. Bankers demand payment on time. Farmers have difficulties with these contradictory demands. Agricultural chemicals satisfy some of these demands, but evidence seems clear that they don't yield safer, healthier food. Farmers know this: They're not being paid enough to produce safe, healthy, life-sustaining food, nor to be good stewards of the Earth. Society asks them to do this for free, for altruistic reasons. Farmers know they can't stay in business by resting their land, rotating for pest control, and plowing down green manures to build soil structure and fertility. Only production will keep them in business, and the sheer demands of production are destroying our land and our farmers; they're locked into a system of chemical and economic dependence

from which they find no escape.

Federal farm policies support inadequate and destructive agricultural practices and have created a gigantic farm welfare system.

Ecological and regenerative solutions are hard to come by when decisions are made solely on the basis of production per acre. We must ask ourselves, what is the real cost of putting a meal on America's table? The present system has succeeded in making our food the cheapest in the world for consumers, but at what cost to farmers, their communities, and land?

The time has come for Americans to realize that the bottom line of our cheap food system isn't on the supermarket tape. We need to factor in the decline of soil fertility, erosion and related problems, food safety, polluted groundwater, the health troubles of farmers and farm workers, tax money used in commodity payments, and the destruction of our family farms and rural communities.

As with other forms of chemical dependence, the first requirement for a cure is acknowledgement of our denial of the problem. After acknowledgement comes withdrawal. During withdrawal, the farmer will adjust philosophically while the fields adjust biologically. Emotional and economic support will be needed for three to five years. Help will also be needed from research institutions, cooperative extension personnel, mortgage holders, and consumers. Agriculture stands with a number of major social and environmental issues, such as waste disposal, energy production and use, global warming, and critical resource exhaustion. It demands our attention, and it's right on our dinner plate!

David Stern  
Rose Valley Farm  
Rose, New York

### On farming sustainability

"The Search for Sustainable Agroecosystems," [*JSWC*, March-April 1989, page 111] is a meaty article; I underlined about every sentence and further bracketed paragraphs for emphasis.

Yet the article focused on crops...not



one word about livestock as part of integrated, low-input, sustainable agriculture. This may add complexity, but it is my feeling that forage-grain (cash crop)-livestock diversified individual farm units, especially in the corn, bean, and wheat regions, offer the ultimate opportunity for sustainable, highly profitable, low-input agriculture.

Forage-grain-livestock setups were the norm prior to the launching of "property line to property line industrialized agriculture," abetted by a secretary of agriculture who advocated planting "fencerow to fencerow." The fences have disappeared in favor of tilling every last square inch.

What is needed for a completely integrated and meaningful agricultural ecosystem is the inclusion of legumes and livestock in the farm setup.

Now, of course, the reaction of triple-A farmers to such a notion is that pasturing is inefficient and who wants to invest in fencing and fuss with livestock? I have seen the statement that farmers are reaching the crossing lines on the P&L charts where it will not be profitable to raise corn, beans, or wheat in spite of "industrial efficiency." Beef operations are marginal, in spite of larger and larger feedlots.

Forage-grain-livestock setups offer the only complete scenario for profitable, sustainable agriculture. Once it is examined, it will be seen that it is also the lowest input method, simply by the nature of its practices.

So, what has come along to make this diversification so wonderful? Two things: rotational pasturing and the machine to make it viable.

Rotational pasturing is everything from simply dividing the range in twain to rapid rotation, high-density pasturing. The crux of its management is appropriate rest periods for a pasture after "clipping" it by intense pasturing in early stages of maturity when the total digestible nutrient and protein levels are the highest. There are many nuances in the management of such a setup, but they will fall into place.

What is the machine? The solution is quick and easy mobile fencing! (I have developed a machine that installs and removes fence 40 to 80 rods an hour, depending on complexity. It uses conventional T-posts, barbed or smooth

wire and fasteners. It runs off the hydraulics of a 35- to 40-HP tractor.)

Up to this point rotational pasturing has been hampered by the labor intensity of the system. Mechanizing it will fling wide the gates to getting the most out of pasture and crop rotations.

Truly quick and easy mobile fencing will enable farm managers to take ultimate advantage of all the benefits of nature in an integrated farm system, plus it will slash production costs as well as save soil and water and stop pollution. Including livestock will complete the normal natural soil-plant-animal biological cycle and will allow the farmer to add value to his crops that he himself will furnish at cost—not retail or even wholesale, but at cost!

I am not advocating a complete move to grass and livestock—rather a move into a well-balanced and integrated forage-cash crop-livestock setup. Being diversified gives an operator a three- or four-legged stool to sit on. Having the facility to increase or decrease one or the other or all modalities 5 to 10 percent without upsetting the apple cart gives him the opportunity to adjust midstream to weather, crop, and market conditions.

The fencer will be the management tool of the next evolution in the next generation, which will start when a farmer can see profits increased \$100 to \$300 per acre without a huge investment or major alteration of his present setup. The fencer will allow him to move into diversification stepwise and gradually rather than going whole hog into beef, grains, swine, sheep, horses, or what have you.

I also envision a network of farm management modules with field men in soils, agronomy, animal husbandry, engineering, and finance working as a team with the farmer who makes the final decisions to match his likes, dislikes, resources, and talents. The network will furnish information from the experience of others and the stacks in extension services, plus up-to-date information on weather, crop, and market conditions—the three biggest gambles in farming.

There is a real possibility of a new and brighter day when the farmer and rancher will have more control over his own destinies and operations. Then life

will be more challenging, interesting, profitable, and fun!

Robert S. Hulburt  
Chicago, Illinois

### Best JSWC yet

The September-October *JSWC* just came and is the best journal of all time. It covers sustainable agriculture, water quality, the new farm bill achievements, the district and SCS delivery system for services, etc. It is outstanding and every author and contributor merits a heartfelt thanks!

Larry Summers  
Columbus, Ohio

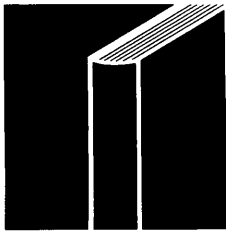
### New Mexico study classified

I wanted to point out an inaccuracy in the November-December *JSWC*. The New Mexico State University study referred to in the "In the News" section (page 588) was misinterpreted. The statement that the study "says that there is no justification for the private harvesting by ranch owners of public game animals and wildlife" is inaccurate. The study reported, "We find no compelling reason for the New Mexico legislature to change the law so as to encourage the commercial harvest of free roaming native wildlife for purposes of meat production." The news story also stated the study reported "that landowners should pay user fees as do other hunters." I could find no place in our study that user fees were even mentioned and we certainly made no recommendation similar to what was stated.

New Mexico State University is on the forefront of assisting landowners in the implementation of wildlife enterprises that are biologically, legally, socially, and economically sound. Our goal is to convince landowners that wildlife on their land is an asset not a liability. We feel that as more landowners receive incentive to manage for the improvement of habitat and populations beneficiaries will be the landowner; the public; and, most importantly, the wildlife.

James E. Knight  
New Mexico State University





## BOOKS, ETC.

**Alternative Agriculture.** By Committee on the Role of Alternative Farming Methods, Board on Agriculture, National Research Council. 449 pp., 1989. National Academy Press, Washington, D.C. 20418. \$19.95, paper; \$29.95 hardbound.

Alternative farming techniques, such as fewer off-farm chemical inputs; crop rotations to reduce the use of pesticides; and, in general, much greater sensitivity to environmental or soil damage, are highlighted in a report of a special five-year study carried out under the auspices of the National Research Council by a 17-member committee chaired by John Pesek, Iowa State University. The committee's report, *Alternative Agriculture*, has been strongly endorsed by the Board on Agriculture, National Research Council. The board applauds the several alternative farming methods, which emphasize biological relationships, such as those between the predator and plants, and natural processes, such as nitrogen fixation, and rejects the so-called conventional agriculture, which, while being dramatically effective in increasing yields, has gained these increased yields at a high cost to society and has led to serious losses in quality of the country's soil and water resources.

The committee's report has not won accolades in all corners of the country. An independent environmental think tank, Resources for the Future, pointed out that low-pesticide farming may be less profitable and less ecologically beneficial than the NRC report suggests: "For the general run of farmers in the United States at the present time, alternative agriculture is not economically competitive. Although alternative agriculture methods may minimize pesticide pollution, they also place other strains on the environment, and in addition are financially risky."

I see no problem with any of the alternative agriculture goals; in fact, these are part and parcel of so-called conventional farming systems when properly managed:

- Prioritize nitrogen fixation, nutrient recycling, and pest-predator relationships.

- Discourage inputs that have the greatest potential to harm the

environment, the health of farmers, and the quality of food produced.

- Encourage greater use of biological and genetic potential of plant and animal species.

- Support cropping patterns and systems that ensure long-term sustainability and at the same time maintain production levels.

- Encourage much increased awareness of the need for conservation of soil, water, energy, and biological resources in a profitable and efficient cropping system.

A wide range of farming systems and practices are envisaged. The prudent use of agricultural chemicals is encouraged, as well as organic farming. Where appropriate, low-input, sustainable farming systems are included. High priority is given to diversified farming systems; they are generally more stable and resilient and also reduce risk, provide a hedge against drought and other natural factors, and should give the farmer greater leverage to respond to market place gyrations.

In contrast to the more highly focused organic farming systems or low-input, sustainable agriculture, the alternative farming proposal recognizes the need for farming systems to adapt specifically to the soil and climatic conditions prevailing in any one farming region.

The report notes that a wide range of government policies significantly influence farmers choices and generally work against environmentally neutral practices and the adoption of certain alternative farming systems. I must add here that agricultural policies in Canada have only very rarely been conservation neutral, and I know of no instance when they have been conservation positive.

The report recommends that serious consideration be given to regulatory change to ensure that more rapid progress can be made toward the development of safer guidelines for use of agricultural chemicals. In particular, greater emphasis must be placed on attaining a balance between the cost of health and environmental consequences of each pesticide and its benefits to production agriculture. Reference is rightly made to the Delaney paradox,

an NRC report published in 1987 that included detailed recommendation for a consistent policy of regulating pesticide use.

The study strongly suggests that a systems approach to research is essential. Agricultural research to date has been a major pillar supporting crop production in the United States. Regrettably, on-farm research to evaluate interactions between crop rotations, tillage methods, pest control, and nutrient cycling has been almost nonexistent. Farmers need to understand these interactions. Developmental research and extension have not focused on integrating new knowledge into practical farming systems. The proposed alternative farming systems, rather than rejecting modern agricultural science as organic farmers often tend to do or leaving a major portion of the new technology on the shelf as low-input, sustainable agriculture suggests, strongly recommends that the fullest use of new technology must be encouraged through the integration of the new technology into current conventional agriculture. By doing so in a system mode, the study forecasts less use of agricultural chemicals, thus lowering input costs and minimizing the risk of environmental damage.

The report repeatedly underscores the following: Alternative farming practices, to be successful, require better trained labor, much improved management skills, and more detailed and timely information relating both to production and marketing aspects of farming. My experience would suggest that those farmers in western Canada who have seriously attempted to adopt "sustainable" farming methods and have failed did so because they did not have a sufficient understanding of agricultural science to enable them to integrate, without unacceptably high risk, the new (or alternative) technology into a system compatible with their soils, the prevailing climate, and available on-farm resources.

The committee expresses concern that the retirement and attrition of scientists capable of bridging the gap between the laboratory and the field will materially reduce the country's ability to quickly apply new alternative agriculture technology at the farm gate. Few young



scientists are pursuing careers in scientific agriculture, let alone participating in interdisciplinary or systems research. It places a major part of the blame on higher education institutions, the peer review system, and funding. I would counter this statement by pointing out that educational institutions, particularly colleges of agriculture, have been and are turning out scientists who are better qualified than ever to meet the needs of the agriculture industry, but employers and funding agencies have not recognized the value of interdisciplinary or systems research and development, other than giving it a kind of motherhood support. In particular, here in western Canada, there is not strong support for much-needed on-farm systems research.

The report strongly recommends the conduct of on-farm research and developmental, field-scale farming-systems studies, which are regionally focused, multidisciplinary, long-term, and have high visibility. Substantial new funding—the report recommends at least \$40 million—should be added to the U.S. Department of Agriculture's competitive grants program. Priority in this program is to be given to basic as well as applied multidisciplinary research. Suggested priorities for the competitive program include nutrient cycling research related to increasing efficiency of nutrient use, the role of alternative tillage systems in weed control, new pest strategies, the study of the interaction between crop rotation and environmental quality, the development of improved crop and livestock species through genetic engineering, improved farm equipment design, the economics of alternative farming systems, and the development of computer software systems to aid farmers in making management decisions.

The final section of the report is intended to provide insight into how the real world works. This is perhaps the weakest portion of the report. With the exception of a large cattle ranch in Colorado, there are no unirrigated examples of successful alternative farming throughout the very large semiarid and arid regions of the country. Perhaps none exist; "low input" and "organic" agriculture

dominated the farming systems in western Canadian agriculture for the first 50 to 75 years, and during this time extensive soil degradation occurred. Thousands of tons of essential plant nutrients, in particular nitrogen and phosphorus, which came from rich soil reserves, were exported. Erosion by wind and water, salinization, and structural breakdown are today estimated to cost farmers in the prairie region about \$1 billion per year in lost annual production. Are their alternatives to the current farming systems in the Great Plains region of North America? Certainly, the kind of alternative farming systems suggested in the NRC report are not only unsustainable in the semiarid Great Plains region, but also will lead to further accelerated resource degradation.

I am convinced that the first generations of farming here on the prairies and perhaps also throughout North America must be replaced by a new generation of sustainable farming systems. Note that I do not use the term alternative farming systems. We can and will leverage our way into these new systems with considerable optimism because much of the technology is now on the shelf. The farmer or, for that matter, the policymakers who continue to operate on the 20th century format are indeed at risk and will likely be a casualty as agriculture in North America moves into the 21st century. *Alternative Agriculture* provides some insight into the kinds of changes that may take place. The most noteworthy chapter is that entitled "Research and Science," and this is recommended reading for all.—D. A. Rennie, College of Agriculture, University of Saskatchewan, Saskatoon, S7N 0W0.

***The Greening of Aid: Sustainable Livelihoods in Practice.*** Edited by Czech Conroy and Miles Litvinoff. 302 pp., 1988. Earthscan Publications, London, England WCIH ODD. £8.95 + £1 postage.

The International Institute for Environment and Development (IIED) has a good record of stimulating ideas, one of which is reported in *The Greening of Aid: Sustainable*

*Livelihoods in Practice.* This book is based on the papers produced for the "Only One Earth Conference on Sustainable Development," organized by IIED at Regent's College, London, in April, 1987.

Sustainable development was the central theme of the conference and each of the commissioned case studies reported at the conference was chosen for its relevance to the issue of sustainability. The book consists of 34 such studies arranged in six groups, with a rapporteur's overview and summary of the papers in each group. The groups are as follows: "Sustainable Rural Livelihoods: A Key Strategy for People, Environment, and Development," rapporteur Robert Chambers; "Sustainable Rural Livelihoods: Enhanced Resources Productivity," rapporteur John Michael Kramer; "Mass Production or Production by the Masses?" rapporteur Marilyn Carr; "Planning Techniques for Sustainable Development," rapporteur Colin P. Rees; "Human and Institutional Development," rapporteur David Butcher; and "Human Settlements," rapporteur Yves Cabannes.

The selection of experienced specialists as the authors and rapporteurs resulted in a high standard of technical writing, which has been skillfully edited into book format. *The Greening of Aid: Sustainable Livelihoods in Practice* deserves to be read by everyone concerned about the environmental issues of development.—N. W. Hudson, International Center for Soil Conservation Information, Ampthill, England.

***The Small Town Planning Handbook.*** By Thomas L. Daniels and John W. Keller with Mark B. Lapping. 167 pp., 1988. The American Planning Association, Chicago, Illinois 60637.

*The Small Town Planning Handbook* is of special value to residents in small towns or rural areas who have had no previous exposure to the activity called community planning. The book is divided into two parts. The first, "Creating a Town Plan," consumes more than half of the book and describes in great detail what data are needed and should go into formulation of a town plan. The presentation is



rather pedantic and uses newly invented terminology, such as "miniplan" and distinct from "minor plan" and "major plan." The extensive listings of statistical data needed for making a plan may appeal to students of community planning, but they may also discourage the typical citizen-planner.

Part two deals with "Putting the Town Plan Into Action." The subjects of zoning, subdivision regulations, and capital improvements programs are covered in detail. Most of the advice given is in good, understandable language, adhering to sound planning principles that most professional planners would support. I offer one note of caution however. I would not support the recommendation to negotiate "density bonuses" with developers to improve their esthetic design. Zoning is correctly described as a "police power," and variances from the standards should not be "for sale."

The emphasis given to plan implementation is important. The authors provide a realistic argument that plans do not implement themselves. It takes a determined, continuing effort on the part of a broad array of citizens to go from a plan on paper to actual accomplishments on the ground. That point is well made in the book and provides the most important reason for putting it in the category of recommended reading.—WARREN T. ZITZMANN, Falls Church, Virginia.

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