

" AGRICULTURAL
SCIENCE
AND THE PUBLIC"

BY

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AGRICULTURAL SCIENCE AND THE PUBLIC

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MOLINE, Ill., Jan. 15 -- It is opportune today that the Council for Agricultural Science and Technology (CAST) is being formed to bring back together, after many years of separation, the different disciplines of agricultural science into a body designed to affect overall policy of agricultural development. This body will provide a forum through which both congressional leaders and the general public can be provided reliable information--information on the problems affecting agriculturalists, including farmers, ranchers, research scientists, educators and agribusiness, and indirectly the nation's food supply. This action is particularly necessary today since 75 percent of the U. S. population is urban and another 20 percent live in towns and cities of various sizes. The urbanites have little or no concept for the socio-economic problems of the 4-1/2 percent of the population who produce the nation's food and who fill the supermarkets with the best variety and quality food at the lowest prices in the world.

It is apparent that, throughout history, agriculture and animal husbandry carried a disproportionate part of the financial burden for developing our civilization. The "under-pricing" of food helped generate the capital which established the first crafts, and subsequently the first commerce, in the first villages of the Near East some 10,000 years ago. The disproportionate financial and social burden suffered by agriculture continued throughout the feudal system of Europe, the industrial revolution of Europe, the Colonial period, and after independence, in the U.S.A. Migration from farm to village began soon after the establishment of the first villages and commerce. It originated because life was easier and more pleasant in the villages and cities and in no small way this was possible because of underpricing of food. The migration from farm to cities was accelerated with the rise of the trade unions which assured workmen better wages and increased their standard of living, while agricultural prices and farm income remained low, with the exception of certain brief periods of international crisis.

"HARD TOMATOES - HARD TIMES"

"Hard Tomatoes - Hard Times" is an outstanding example of a book written about agriculture by someone who knows nothing about the history of agriculture. He attributes the exodus from farm to urban slum over the past several decades as being caused by a collusion between the Land Grant Colleges and Universities, Agri-business, and Corporate Farming Interests. He was wrong as to the beginning of the migration from farm to village by about 10,000 years. He also failed to recognize the contributions of research--much of it done by the Land Grant Colleges and Universities, the U.S. Department of Agriculture and by agribusiness. Over the past four decades, this research raised yields and quality of food, feed, and fiber spectacularly, and has slowed the exodus from farm to city over what it would have been had the new technology not been available. A glance at the following table shows what has happened to corn yields since the prairies were opened to cultivation.

STATE AVERAGE CORN YIELDS

State	Bushels per Acre			
	1882	1935	1953	1971
Illinois	23.0	38.5	54.0	102.0
Indiana	31.3	38.0	51.5	97.0
Iowa	25.9	38.0	53.0	102.0
Minnesota	32.0	33.0	48.0	83.0
Ohio	31.3	44.0	55.0	89.0
Wisconsin	28.8	34.0	58.5	97.0

The state average yields of corn for the six principal Corn Belt states have increased from four to fivefold over the 1882 base yield. Yields have approximately doubled during the past 20 years. These increases have resulted from better seed, better agronomic practices, proper use of chemical fertilizers, better control of weeds, insects, and diseases, and better mechanization. What would the price of beef be today at the retail markets in New York, Chicago, Los Angeles, and Washington, D.C. had yields remained at the 1935 level?

Throughout the long history of the development of civilization, and the U.S.A. is no exception, the farmer and rancher have carried a disproportionate responsibility for improving the well-being of mankind. The American has the best food buy in the world. In recent years, he has spent from 17 to 18 percent of his take-home pay on food, a far smaller proportion than the citizens in any other country. Yet today with an increase in food prices, and especially meat, there is a furor from the Urban press and from Washington, since the vast majority of the Congress now represent urban constituencies. The farmer and livestock man is now accused of making excessive profits, when the effect may be to temporarily slow the exodus from farm to city. Urbanites fail to understand the farmer's production costs, and in addition they fail to consider the costs all along the food chain from farm to supermarket, which include labor costs, transport, packaging, and handling and profits all along the chain.

I have for three decades been involved in research and food production in the developing, food deficient nations. I spent my youth and early years in agriculture in the U.S.A. I have come to believe that the plight of the farmer stems from the narrow points of view of the consumer and government policy makers alike. In the developing nations where the majority of the people live on the land, they are treated as though they are "the unorganized, exploitable majority." In the developed and affluent nations such as the U.S.A., they are apparently considered to be the unimportant minority.

Unless there is an awakening soon by both the urban consumer and government policy maker to the plight of the family farmer, who has contributed greatly to the development of our economy, the exodus will continue. The number and size of Corporate Farms will increase rapidly to fill the vacuum left by the migration off the family farms. Once the Corporate Farms have increased sufficiently in numbers and size, they will be strong enough to demand--and get--a fair price

for food and fiber, something that has rarely happened, even for short periods of time, throughout the long history of agriculture.

DANGERS ON THE FOOD PRODUCTION FRONT IF WE ENACT
IRRESPONSIBLE LEGISLATION ON THE ENVIRONMENT FRONT

During the past four years, there has been a world-wide awakening to the problem of pollution of the environment (air, water, and soil) and its effect on human health and on other life forms. I am in agreement that man has been unnecessarily negligent and abusive of the environment. And I am all in favor of seeing this corrected as soon as possible. But, I also say that this must be done in an orderly manner with a minimum of disruption to the economy and standard of living.

Agriculture, it would seem to me, has received more than its fair share of criticism, which has added to the farmer's dilemma. There are a few extremists in the environmental movement who, if they have their own way, would pass an avalanche of laws to produce a utopian environment overnight.

Ecologists have made concrete positive contributions toward correcting some of the abuses to the environment by creating an awareness among the general public which already has resulted in constructive, corrective action in some cases. It must, however, be pointed out that ecology which deals with the relationships of man and all other organisms to one another as well as to their physical and biological environment--is one of the most complex and inexact sciences known. It is impossible, therefore, for anyone to quantify the effects of many of the actions and reactions involved in these complex relationships. Nevertheless, several extreme environmentalists posing as new messiahs founding a new religion would lead the world into an environmental utopia immediately. They advocate policy changes and legislation that may in the end be detrimental to agriculture, our food production potential and to society in general. These new messiahs have all too often only used the data which support their theories about ecological doom while ignoring much other experimental data that do not support their views. They often widely denounce all who disagree with them. I am fearful about the long-time effect of such a pseudo-scientific approach.

PSEUDO-GENETICS AND PSEUDO-ECOLOGY

Today, there is a near crisis in the international food grain market. The world food grain stocks have been depleted during the past six months to the lowest level in the past 25 years, and grain prices have soared. Winter killing last year in the winter wheat crop followed by a severe drought over much of the spring wheat growing area during the past summer in the U.S.S.R. is one of the prime reasons for a sudden major deficit in the world food market place. But there is also another, more subtle, but deep-rooted, scientific cause behind the scenes that undoubtedly contributed indirectly, but, nonetheless, greatly to this failure. I refer to the 30-year period (1935-1965) of the pseudo-genetics of Lysenkoism and its disruptive effect on other aspects of agricultural and biological sciences.

I use this example reluctantly because of the danger of being misunderstood by my scientific colleagues in the U.S.S.R. and in many other parts of the world. I, therefore, wish to assure everyone throughout the world that there is no political motivation behind my selecting this example. I merely wish to illustrate the danger to the U.S.A. of following the extremist, pseudo-scientific fringe of the environmentalist movement today. Since 1965, the government of the U.S.S.R. has discredited Lysenkoism and is making a tremendous effort, which I greatly admire, to overcome the disruptive influence of the aforementioned 30-year period. I wish them well and am confident their agriculture will make tremendous progress in the next decade. But this kind of experience could insidiously influence the capacity and capability of the U.S.A. to produce food, feed, and fiber. If our agriculture is prevented from intelligently using the technology available to it and building further on these sound foundations so well devised and substantiated by our scientific community--it could happen here.

The repercussions of the bad wheat harvest in the U.S.S.R. during 1972 clearly indicates the precariousness of the world food supply. Within the past few months, they have contracted for approximately 20 million metric tons of food grains. These purchases have depleted virtually all of the stored, world stocks of wheat. Fortunately, the 1972 wheat harvests in India, Pakistan, Afghanistan, Iraq, Iran, Turkey, Lebanon, Tunisia, Algeria, and Morocco were all excellent, being either record or near record crops. Had there been poor harvests in these areas also, there would have been widespread famine. The current near food crisis indicates again the need for the establishment of International Graineries or Food Reserves, financed by all nations and available to all in case of need.

If the U.S.A. continues to follow and enact into law some of the unrealistic environmental policies being advocated by the pseudo-ecologists, it will adversely affect both our food production and availability of energy. Perhaps it will take empty stomachs, cold houses in winter, and no lights to jar us into taking a middle-of-the-road approach on these environmental issues. CAST therefore has both a tremendous responsibility and opportunity to present unbiased, scientific data on many of these issues to congressmen, policy makers and the general public so that wise policy and legislation will be enacted. I have faith the correct decisions will be made if the facts are made known to the general public and to the national and state legislative leaders.

NEED FOR THE DEVELOPMENT OF A BALANCED NATIONAL PROGRAM OF LAND USE

Within the past five years, the general public has become "Conservation" minded. Never before in the history of the U.S.A. have so many individuals and groups become interested in outdoor recreation such as canoeing, hiking, camping and in wildlife, forestry, watershed management, and in parks and wilderness areas. This is in part one of the constructive positive spin-offs of the environmental movement. Unfortunately, up to the present time, it has only given rise to a "hodge-podge" of several hundreds of laws and funds at both the state and federal level designed to improve our environment and conserve our national resources. Also, unfortunately, these are all independent, uncoordinated programs, with much inefficiency. The time seems to have arrived when we should develop a balanced, coordinated program of land use and management at

both the state and national levels. Such a program would classify and stimulate a properly balanced development and use of our land resources for all purposes -- agriculture, grazing, forestry, watershed protection, wildlife and recreation. As part of the overall program, large tracts of "abandoned" sub-marginal and marginal land now in the private sector should be considered for re-inclusion in state or national forests or parks. There is need for an aggressive program of reforestation to replant areas of forests and parks which have been destroyed by fire. All too often, the limitations of funds from operating budgets of these organizations will not permit immediate replanting and decades of time are lost before natural reseeding takes place. Today, there is great interest in wildlife among the general public, yet the funds available for research and scientific management of this resource are minimal. We need more wildlife and fishery biologists, but most of all we need a coordinated, balanced program to finance and utilize their skills.

I am convinced that the youth of today would welcome a program of "conservation of natural resources" in which they could participate for a couple of years of their life. The Civilian Conservation Corps (C.C.C.), an emergency conservation program established during the depths of the economic depression of the 1930's, embodied some of the ingredients that should be included in the more visionary and long-range program of tomorrow. The public benefits derived from the C.C.C. were enormous. Now with the availability of a great reservoir of trained foresters, wildlife biologists, ecologists, etc. that were not available in the 1930's we could much better plan and implement a truly dynamic and effective "conservation program." But, we, as a nation, must have the true desire to see such a program launched. It would appear to me that the time has come to quit talking about the deterioration of the environment and the depletion of our natural, renewable resources and develop, support, and implement active, visionary programs to restore them to their former levels of productivity. It would appear that such programs truly merit a high priority in government planning and financing.

THE POPULATION MONSTER

When we talk about the deterioration of the environment, depletion of the natural resources, and the world food problem, they cannot be separated from the problem of the explosive increase in human numbers. No matter what we do in correcting the abuses of the environment, in slowing the depletion of natural resources, in developing substitutes and in expanding food production, world civilization will none-the-less be doomed unless we tame the population monster. Moreover, I am of the firm belief that more research on human reproduction biology which will lead to the development of an effective birth control technique is the answer. It must be equally effective, acceptable and safe from a health standpoint in privileged suburbia, slums of the developed nations and in the back-villages of the developing nations. Once such a technique is available and is combined with an educational program, I am convinced that the peasant families will respond positively by reducing their family size. The destruction of the myth of their non-receptivity to changes in agricultural methods gave rise to the so-called GREEN REVOLUTION in food production. I'm convinced they will again prove receptive if they are provided the right techniques with which to humanely reduce family size.

Despite the dreary pictures of many doomsayers, I have faith in the Naked Ape. He has come a long way and he will achieve even greater heights unless we destroy him with negativism and pessimism. Neither of these ingredients are mortar with which greatness is built.

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