

**Kentucky Agriculture
in the Year 2000:
Some Thoughts on Revitalizing the Mission of the
College of Agriculture at the University of
Kentucky**

1995

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Kentucky is a rural state. It is becoming less and less an agricultural state. With the exception of burley tobacco, Kentucky falls, at best, in the middle-of-the-pack among the 50 states in the production of most agricultural commodities. The decline in the importance of commercial agriculture to rural Kentucky is readily apparent from the 1992 Census of Agriculture data. Much of the attention of the agricultural leadership in the Commonwealth has been directed toward dealing with the consequences of the loss in income associated with burley tobacco production. But other changes are taking place. Some of these changes may ultimately prove to be more significant to Kentuckians than what is happening in burley tobacco. A ten-year period may not seem like a very long period of time, but the 1982 to 1992 decade has brought with it profound change to Kentucky agriculture.

Here are some examples. In 1982, there were 31,301 corn producers in Kentucky; in 1992, there were but 16,945. Fewer acres of corn were grown in 1992 than in 1982 (1.16 versus 1.34 million acres), but increased yields resulted in a slightly larger total output (145 versus 132 million bushels). Producer numbers have declined by nearly 50 percent, and fewer acres are being planted. Kentucky corn production as an industry is undergoing a long, steady decline.

Soybean production is undergoing even more significant changes. In 1982 there were 12,628 soybean producers but by 1992 only 7,185 remained. Acreage decreased from 1.46 to 1.03

million acres, and production declined from 44 million bushels to 38 million bushels. Soybeans are becoming less and less important to the state's economy.

The number of tobacco producers declined from 74,166 to 59,373 over the ten-year period, even though acreage and production was up slightly (542 million pounds from 268 thousand acres in 1992 versus 539 million pounds from 257 thousand acres in 1982.)

The changes that took place over the 1982-1992 decade in the livestock sector in Kentucky in some ways are even more profound than those that took place in the crops sector.

Some examples include the following. Kentucky has long been struggling as a dairy state. It annually ranks at the bottom of the 50 states in milk production per cow. Historically, Kentucky has had a significant dairy industry in terms of farm and cow numbers. In 1982 there were 10,817 farms producing dairy products. By 1992, there were only 4,984. This is a loss of over half the producers in but a ten-year period. Clearly, many small dairy farmers are no longer engaged in dairy production. Dairy cow numbers are down too, from 253,852 in 1982 to 186,089 in 1992.

Changes are equally profound in hogs. In 1982 there were 11,436 hog producers; in 1992 only 4,879, but slightly more hogs and pigs were sold in 1992 than in 1982 (1.46 million in 1992 versus 1.39 million in 1982). The few hog farms that

remain are expanding rapidly. Hog production in the state will increasingly be dominated by a small number of large-scale producers that can devote full-time to the enterprise.

The beef producers have remained relatively constant over the time period, 42,898 in 1992 versus 44,844 in 1982. Beef cow numbers are up slightly, from 982,000 in 1982 to 1,089,000 in 1992.

Do these changes mean that the average rural Kentucky resident is worse off in 1992 than in 1982? Not necessarily. Clearly, many rural Kentuckians have found new sources of income not related to crop and livestock production. The enterprises where farm numbers are falling off most rapidly tend to be management-intensive, and are usually enterprises that do not mesh well with off-farm employment. Those enterprises that are surviving to a degree are the ones that can be maintained while still holding a part-time or even full-time off-farm job. Fewer and fewer farmers in Kentucky find that milking cows represents the best way to earn some extra income. An off-farm job is better.

In Kentucky and nationwide the core of farmers who have traditionally relied on the land grant university for research and extension is disappearing. These are full-time operations that rely primarily on the labor of the operator and the farm family. A two-tier structure is emerging. One tier is represented by larger than family-size operations in essence, agribusiness firms that happen to be engaged in production of the raw agricultural commodities. To the extent that hog, dairy and grain production continues in the state, production volume will increasingly be dominated by the output from these large firms.

Kentucky has fewer of these larger-than-family-size operations than many of the other states with significant agricultural income. Only 1,556 Kentucky farms in 1992 produced gross outputs valued at more than \$250,000, but these farms produced more than a third of the agricultural output of the state, based on the value of product.

The other tier is better described as a rural lifestyle residence rather than as a farm. There is no lack of interest and enthusiasm among Kentuckians for the rural lifestyle, but most want the incomes and conveniences associated with urban living. Income from the sale of agricultural product is increasingly viewed as a supplement to income from off-farm employment, not the other way around. These residents seek information about agricultural enterprises that mesh well with off-farm employment.

A rule of thumb is that in an average year, 20 percent of gross sales is net farm income. In an average year, a farm with \$50,000 in gross sales would net approximately \$10,000, a nice supplemental income but inadequate without other income sources. Over 88 percent of the farms in Kentucky 79,732 of 90,281 total farms produced gross sales of less than \$50,000 in 1992. For most of these farms, income from the sale of crops and livestock is supplemental to other sources of family income.

The Census of Agriculture asked farm operators in Kentucky whether they regarded themselves as farmers or as primarily engaged in some other job or business activity. Of the 90,281 principal operators (farms) surveyed, less than one-half, 40,175, told the Census that their primary occupation was farming. The remainder, 50,106, were principally engaged in some other occupation, with farming representing but a supplemental source of income.

The College of Agriculture at the University of Kentucky faces a clear choice. Either we can attempt to reshape Kentucky agriculture into something that it is not, or we can provide assistance to rural Kentuckians in dealing with problems arising within the existing structure. An effort to reshape Kentucky agriculture in an effort to increase the value of agricultural output would ultimately involve restructuring it in such a way that there would be greater emphasis on full-time commercial farming. To illustrate a strategy for accomplishing this, specific extension efforts might be directed toward helping farmers convert their operations from part-to full-time. Since the average farm size in

Kentucky is only 152 acres, farmers that wished to do this would need to purchase additional land and obtain additional capital for expansion.

Average farm size in Kentucky has remained comparatively stable over the years, especially when compared with states where a larger proportion of the operators are full-time. In many of the Plains states, where agriculture is dominated by full-time operations, technologies are leading to dramatic losses in farm numbers and rapid increases in average farm size. Since there is little off-farm employment, the rural areas in these states have paid an enormous price in population outmovement. Given a choice, do we really want to restructure Kentucky agriculture to be more nearly commercial and full-time? Kentucky agriculture is unlike the agricultures in Nebraska, Iowa, California or North Dakota--states where full-time operations dominate. Nor may we want it to become like the agricultures in those states. Many of the rural areas of these states face major problems brought about by the rapid restructuring. Solutions to these problems are even more difficult than solutions to the problems Kentucky farmers face, like replacing income lost from tobacco production.

Some Kentucky College of Agriculture faculty act as if they believe that if somehow Kentucky agriculture could be transformed into an agriculture that was more like the agricultures in states with more full-time commercial farmers, we would have accomplished something positive to improve the well-being of the rural people of the state. I argue that this perspective is wrong. Increasing the gross agricultural output of the state will inevitably involve significant restructuring of agriculture within the state and lead to significant losses in farm numbers. As a college of agriculture we will be faced with the problems other states have faced where farm expansion has been rapid. It is highly unlikely that agricultural output can be significantly increased within the state without a significant reshaping of the system that produces the output. We should not promote expansion of agricultural output without being concerned

about the consequences of such an expansion on the structure of agriculture within the state. We have a responsibility to examine the structural consequences of attempts aimed at expanding agricultural output.

We like to act as if once we solve the problems that limit the production of agricultural commodities within the state, that somehow problems that affect the quality-of-life of the rural people of the state will disappear. In other words, the trickle-down effects of any increased agricultural production will somehow lead to improved quality-of-life for rural people. A doubling of aggregate agricultural output will in some manner make the lives of average rural Kentuckians better. As a parallel, we might only recall the history of the consequences of the growth of the coal industry on the well being of rural residents in Eastern Kentucky. The development of the coal mining industry was desirable from the perspective of increasing the Gross State Product, but the consequences of this development for the quality of life of rural Kentuckians is still the subject of considerable debate. Issues surrounding the linkages between increasing production levels in primary industries and their consequences on the quality of life for those affected by the increased production are complex.

Technical production scientists like to believe that if somehow a technology can be developed that increases, say, corn yields, then every corn producer who adopts such a technology will have a greater income as a result of having sold more corn. Non-farm rural communities will benefit as the extra dollars are spent and respent within the local communities. I wish the true relationships and linkages were this simple. In reality, as technology advances, farmers who adopt are able to expand their operations at the expense of those who are unwilling or unable to adopt. Eventually those who are unwilling or unable to adopt go out of business. A restructuring takes place. The consequences of this process in Kentucky for corn, hogs, and dairy is readily apparent from the 1992 data. The extension response has been to argue for increased educational effort aimed at encouraging more and more farmers to adopt new

technologies such that fewer and fewer farmers are left behind. But aggregate farm income, when adjusted for the effects of inflation has declined at a slow but steady pace for the past 40 years (and perhaps longer) in both the entire U.S. and in Kentucky. This is despite the nationwide system of agricultural research and extension that has dramatically increased output of and improved the production efficiency for agricultural commodities over the same time period. Aggregate gains from new technology to farmers have been more than offset by reductions in price, leading to reduced aggregate gross farm income. To the extent that farm numbers decline as technology rises, real income per-farm increases (although slowly, in most states) over time. My research suggests that the real gainers, however, are consumers, who pay lower prices for raw agricultural commodities than would have been the case if the technologies had not progressed. Technological advances provide some individual farmers with short-run gains in real income as other, presumably less efficient, farmers exit. Thus, the new technologies, in part developed by scientists at land grant universities, become the engine that drives structural and rural population change.

Efforts directed at more rapid expansion of agricultural production will inevitably require faster technological progress, resulting in a more rapid restructuring of agriculture and rural communities in Kentucky than is currently taking place. The questions that arise from a restructuring necessary to achieve a significant production increase are not easy to answer. For example, would current part-time farm operators prefer instead to hold hourly-wage jobs in a large-scale hog production or processing facility? Should we promote agricultural expansion if we know such an expansion will ultimately lead to reduced vitality for non-farm rural communities? Large-scale livestock production facilities tend not to employ large quantities of labor. Is this the type of economic expansion that should be encouraged? These kinds of questions can be addressed by studying the experiences of other states where the restructuring has been more rapid.

Compared with many of the Plains states and other states that have local rural economies that are more heavily dependent on agricultural output for income than are most Kentucky counties, most rural counties in Kentucky are faring reasonably well with respect to maintaining the population base. A number of counties in the Plains states have lost one-quarter or more of their 1980 population base during the 1980-90 decade, largely arising from technological progress in agriculture and a lack of diversification in the economic base. Is this the kind of rural Kentucky we want? Given a choice, would we not prefer to deal with the problems associated with finding alternative enterprises to replace income lost from tobacco production.

Another concern is the position of the College of Agriculture on rural industrial development involving agricultural processing plants vis a vis other kinds of rural development involving the production of products perhaps unrelated to agriculture. Apparently we believe that the College of Agriculture should seek to promote development activities that involve agricultural commodities because such economic activity justifies a bevy of agricultural scientists with knowledge about the product, whereas economic activity involving, say the production of auto parts, is of no interest to agricultural scientists because they have no expertise in the product.

But agricultural processing plants are largely low-wage operations that make use of unskilled or semi-skilled laborers. Is this the kind of economic development the College of Agriculture wishes to promote? Someone who was unemployed before might be better off with employment in a low-wage job requiring few skills, but is this the kind of economic development most desired for rural Kentucky? Would not a part-time farmer be better off with a job in a plant making auto parts for use by Toyota or Ford than in a plant which processes chicken or hogs? Which kind of economic activity will have the greatest impact on improving the well being of rural Kentuckians?

The College of Agriculture at the University of Kentucky needs to refocus its mission to better

serve the needs of all rural Kentuckians, regardless of their income source. This means, for example, not holding in disdain beef cattle producers who choose to mesh their operations with part- or full-time off farm employment. Our goal as a college of agriculture needs to be much broader and more comprehensive than merely attempting to increase the value of agricultural output produced each year. This refocusing needs to take place even if involves significant changes in the allocation of resources across departments and within departments of the College.

A comprehensive goal for the College of Agriculture at the University of Kentucky should be to attempt to do whatever is necessary to improve the real incomes of rural Kentuckians, regardless of whether that increase in income comes from the sale of agricultural commodities or by providing improved opportunities for off- farm employment in rural areas. This is the essence of rural economic development. We need to refocus and redirect our efforts toward improving the well-being of every rural Kentuckian, not just the small subset of rural Kentuckians who earn most of their incomes from the sale of agricultural commodities.

The goal of the Agriculture 2000 program that captured the greatest public attention was the one of increasing the value of the state's agricultural output by a significant degree. As attempts were made to develop strategies for accomplishing this on a commodity-by-commodity basis, it became increasingly apparent for most agricultural commodities that substantially increasing agricultural output was not a realistic goal. Furthermore, even if such a goal were realistic, the College needs to be concerned about the distributional consequences embodied in its achievement. If pork production in the state is doubled as a result of the location of a small number of huge factory-style operations, have the lives of rural Kentuckians been significantly improved? Are jobs in a pork processing plant the best the state can hope to achieve for improving the lives of rural Kentuckians? Certainly the processing of

agricultural commodities represents a possibility for off-farm employment in rural areas, but the opportunities afforded by such agribusiness firms need to be evaluated and compared relative to the opportunities afforded in jobs created by firms engaged in businesses less related or even unrelated to agriculture.

As a College, we tend to favor rural development that involves agricultural processing because we see such development as rationalizing the continuing existence and expansion of programs in agriculture. We are often uneasy about rural development that does not involve agricultural commodities and products, in part, because we believe that in such rural development efforts the College has less to contribute. We already have the faculty with expertise in beef and hog processing. But we should not hold these biases toward development favoring firms in industries that deal with agricultural commodities just because the product being produced is related to agriculture. We should be biased toward firms and industries that offer the most for improving the quality-of- life for rural Kentuckians. In general, this means helping local communities attract firms that can offer the most gains in income for rural Kentuckians. If firms not related to agriculture can bring greater gains to rural Kentucky than firms related to agriculture, we should be working to help communities attract such non-agricultural firms. We may need to adjust our resource mix in order to achieve that goal.

The primary goal of a future Agriculture 2000 program should be to increase the real incomes of rural Kentuckians, with concern also directed towards the distributional aspects of the income increase. Whether or not the income increase occurs as a result of increased agricultural production, locating agricultural processing plants within the state, or by increasing employment in firms engaged in businesses unrelated to agriculture is of no consequence. Faculty in the College of Agriculture need to be made aware of this revised goal.

The College of Agriculture is becoming increasingly interested in non-farm rural

economic development, but we have sometimes gone about it in curious ways. Most production scientists would still not like to believe that they are going to increasingly be dealing with farmers who can devote only part of their time and effort to agricultural production. In some instances, our goal seems to be that of converting part-time producers into full-time operators. Perhaps instead we should be attempting to accomplish the opposite.

Rural Kentuckians are increasingly relying on off-farm income, and a rural Kentucky dominated by rural residents that rely primarily on off-farm income may not be a bad world. The image of a family-sized farm with a red barn and silo is replaced by the image of a rural family that enjoys a comfortable standard of living even though income from the sale of agricultural commodities represents only a small share of total family income. In addition, because of the availability of employment in rural communities, non-farm rural residents can live comfortably in rural areas without a need to move to metropolitan areas to find work. Non-monetary benefits accrue to those who do not need to reside in congested urban areas. In an ideal situation the schools and other public services available to both farm and non-farm rural residents would be comparable to those available to city dwellers.

Indeed, what I describe here may be a better world than a rural Kentucky with increased income from the sale of agricultural commodities, particularly if that agriculture is dominated by a few large-scale factory-style agricultural production businesses, accompanied by comparatively low-wage employment in agricultural processing plants. Of course, the difficulty here is that the current mix of resources in the College of Agriculture at the University of Kentucky is mismatched relative to where the emerging research and extension needs lie, if improving the lives of rural Kentuckians is to be the broad-based goal.

Achievement of a goal for revitalizing rural Kentucky by creating off-farm jobs and increasing incomes will require a different

approach from the ones we have previously employed. As agricultural scientists, we are confident that we can, through research, develop a means whereby a corn producer can increase corn yields, and, through an extension educational program, disseminate this information. We congratulate ourselves when the yield per acre of corn increases for the state. But how does such an effort on our part improve the lives of rural Kentuckians? Is research and extension allocation we currently employ what we need to vitalize rural Kentucky and the best we can do for rural Kentuckians? Are our resources being utilized in their highest and best use? Through such efforts do we really help a broad base of rural Kentuckians, or are we simply directing our efforts toward problems we know how to solve?

We are comfortable in congratulating ourselves for increasing agricultural output. We are uneasy about analyzing the distributional and structural consequences of our efforts. Could it be that a driving force behind the reduction in farmers producing corn in Kentucky was the technology gains that we, in part were responsible for? Do our efforts at times run counter to a goal directed at improving the lives of rural Kentuckians? Could it be that what we count as "success stories" in increasing agricultural production have even had negative consequences for many rural residents?

Given the current allocation of resources favoring research and extension for dealing with technical production problems, we apparently are far less confident that research and extension activities related to rural development and assisting communities in developing employment opportunities could be successful. The vast majority of rural Kentuckians do not live on farms. Apparently, we somehow believe that these non-farm residents will benefit from technical production research and extension via a model in which income to the non-farm community trickles down as now-wealthier farmers move more product through the local grain elevators and as the dollars from the sales of this product are spent and re-spent in the local community. But we might, as a college, have far

more profound impact by increasingly working with local communities in an effort to enable them to expand employment opportunities for all residents, improve the quality of public services and other efforts directed toward enhancing the quality of life in rural communities.

We should employ the Agriculture 2000 program to significantly readjust the balance of resources within the College toward solving the problems faced by all rural Kentuckians, not toward solving the problems faced by a production agriculture consisting of farms that are rapidly disappearing. New research and extension resources called for in a revamped Agriculture 2000 program should be evaluated and prioritized based on the revised goal of improving the lives of rural Kentuckians by raising their incomes, not based on whether the output of agricultural production can be increased. Furthermore, we must be cognizant of and develop the scientific research needed to evaluate the distributional impacts of each component of the revised program.

We need to emphasize the role of Agriculture 2000 in improving the lives of people (rural Kentuckians) rather than focusing on increasing agricultural production. The overall goal is to enhance the quality of life of rural Kentuckians largely through increasing incomes of rural residents, both farm and non-farm. Distributional and structural aspects must be addressed. Who will benefit from a program directed toward increasing incomes? Why? By how much?

Thus, issues such as whether or not the quality of life in Kentucky is enhanced from expansion of commercial hog production via large-scale operations will be addressed? The previous emphasis on expanding the output of basic agricultural commodities needs to be minimized, if not eliminated entirely. The emphasis on increasing agricultural production may have been needed to rationalize additional faculty lines in animal sciences or agronomy, but this could be seen as politically self-serving, and, for the reasons I have outlined, not consistent with

where the real needs are. In addition, issues involving non-monetary quality-of-life measures need to be addressed. These issues relate, for example, to provision for public services in rural areas.

In the past, agricultural economics was largely content to sit back and let the production scientists take a leadership role. I would propose that, this time, agricultural economics needs to take a much more pro-active role in redirecting goals and developing methodology for evaluating distributional consequences as outlined above. As social scientists, this is our responsibility.

Agriculture 2000 was not as successful as it could have been in the legislature because its focus that captured public attention was on improving agriculture in the state as opposed to a focus on improving the quality of life for all rural Kentuckians. Politically, the program was viewed primarily as benefitting agricultural special interest groups, rather than as something which would have benefitted all rural Kentuckians. Historically, the College of Agriculture has relied heavily on the support of the agricultural interests (=commercial farming) in the state. It was natural to go back to the same groups for primary political support. But the interests of this group must increasingly compete for funding with the interests of other groups. I'm not saying here that we need to abandon our historic base of commercial farmers, but we must recognize that this group no longer is as politically powerful as they once were, and seek to broaden the political base to include all non-farm rural Kentuckians as well as full- and part-time farmers. If I were representing a non-farm rural constituency in the legislature, there was little in Agriculture 2000 that would appeal to me. If there was something in Agriculture 2000 for this group, the marketing of what it was did not come through clearly.

In the 1950s and 60s, colleges of agriculture nationwide increasingly recognized that agriculture embodied more than farm-level production, and added faculty with the requisite skills necessary to deal with issues such as those related to the processing of agricultural commodities. In the 90s, colleges of agriculture

again must undergo a transformation and modernization. This time we must recognize that the quality-of life for most rural residents is no longer as dependent on the well-being of commercial farming activities as it once was. The continued health of colleges of agriculture will depend highly on the willingness of the leadership to build the resources necessary to attain these broader objectives as outlined here.

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