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**Mega Trends Driving Change within CES and Implications for Extension**

**Economists**

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## **Mega Trends Driving Change within CES and Implications for Extension Economists**

### **Introduction**

Extension economic education programs and policies developed from a free market paradigm have constrained the development of programs based on imperfectly competitive and institutional models. Treatment of issues related to imperfect competition (or even non-competition) are viewed with suspicion if not outright hostility in our discipline. It can be posited that producers are social animals that will collude and connive to create advantage for themselves. Tribes, interest groups, and cabals have been and will be created that attempt to run over a world of small, independent shop keepers with perfect information acting in their own self interests. The “mega-trends” we are experiencing today are not so much new but they are being interpreted in modern terms. Facts, values, and beliefs are still a part of each analyst’s and educator’s toolkit. If facts fail, values and beliefs often enter the equation. The first mega-trend we are dealing with today might be considered to be a struggle between values, beliefs and facts. Extension education programs and analysis by economists based on and around facts are less appreciated and for that reason are much more needed today.

Agriculture has been presented as consisting of “relatively” large numbers of farms with no or little marketing clout and therefore being close to competitive in the Adam Smith sense. However the web of government subsidies, regulations, special tax treatment, marketing advantages to large producers and dependency on off farm income for small producers makes this observation suspect in the past and even more so today. Extension was primarily created to provide information (education) to small independent

farmers and for the past (7 years shy of) 100 years did a good job. Over that time, farm numbers declined from a peak of 6.8 million in 1935 to an estimated 2.1 million farms (1.2 claiming farming as the primary occupation) in 2002.

A large numbers of farmers earn the majority of their income off of the farm. At the same time, farming is becoming increasingly concentrated and integrated. In 2002 5% of the farms accounted for 99% of the ag. sales. Of those who list farming as their primary occupation 32% are over age 55 raising concerns over a graying farm population. But none of this is new. From the 1961 “Adjustments in Agriculture – a National Basebook,”

- “Buyers tend to be larger and fewer in number. In many country sales of farm products, the farmer obtains a bid from only one buyer.” (Ogren and Scoville)
- “For every 100 farms in 1940 there were only 75 in 1958 but the average farm in 1958 had 1.4 times as much land and produced products with nearly twice the value with 46 percent less labor.” (Brewster and Wunderlich)
- “One of the principal ways in which farm people have adjusted to economic conditions is by taking off-farm employment...By 1959, unpublished data show this percentage to have risen to 40.6 percent.” The proportion of farmers working full-time off of the farm “rose steadily from 6 percent to 22 percent” over the period 1934 to 1954. (Beale and Shoemaker)
- “Specialization is increasing rapidly...” (Kiehl)

- “Regardless of the level of prices and income, there is a strong economic incentive to consolidate farms as long as costs per unit of production would be materially lower on larger farms.” (Brandow)

Several of the issues addressed in 1961 sound a lot like those of today. Others may have been considered but were not listed.

### **Mega-trends**

The first old/new “mega-trend” in agriculture is its continuing changing structure including concentration into larger units, an aging farm population and more specialized farming operations. Opportunities exist for extension economics programs geared to older farmers including transitioning into and out of farming estate and tax management planning; labor management and policy.

The second mega-trend is that, in the aggregate, farmers are better educated and wealthier than in the past and the largest farms either have hired expertise or can hire the expertise they need. Extension economist opportunities are available in consulting by those with specialized expertise and in providing education programs that are within the purview of extension economists but which are not generally of the traditional nature such as the “transition” area. Immigration, climate change, energy issues, rural community infrastructure, aging of the farm population, food insecurity and safety, organic farming are all on the table but are tackled by very few extension economists.

Other mega-trends affecting extension economists can be characterized as:

- Sourcing (out and in) and Globalization.
  - Over time, technology changes has shifted the dependence of farmers from the domestic farm level to international corporations. A few U.S.

farmers have even sought opportunities abroad by buying land in foreign countries. Improvements in transportation and handling have made it possible for international agribusiness firms to purchase and transport commodities across the world. The cheapest international source of supply often gains the edge over domestic product in a world where corporate profit and stock value is what matters most. Today, exchange rates have become as important to food supply as were tractor operating costs in the past. Opportunities exist for extension economists to provide education programs on producing for international markets, transportation, basics of international trade, international investing and financial management.

- Bio-technology
  - A particular mega-trend not included in the 1961 report but affecting international relations and farmers cost structure is the biotechnology revolution. Production cost curves were shifted downward for producers using biotech but their dependency (on corporate America) curve was shifted upward. Farmers using biotech must pay technology fees, sign agreements with the companies supplying the seed to abide by company rules, and are users but not owners of the seed. Economists today frequently assess the financial implications of biotech but not the social costs involved.
  
- Bioenergy

- Despite the feasibility, biofuels and energy costs are becoming increasingly important to extension economists. A frequent question asked of economists today, “are energy costs justified or are the companies gouging us?” Many in our profession are engaged in the biofuels feasibility analysis and in assessing the impact of high fuel costs on production and profit margins.
- War
  - This mega-trend is tied in with budget issues, international trade, and energy. War funding influences funds available for domestic spending. Both domestic and foreign opinion if not directly involved influences trade agreements and sanctions. Energy supply also enters into the picture. The economic impact on input prices, as they affect agriculture, are the direct result of energy prices. Outlook and hedging education programs are possible opportunities for extension economists arising from these events.
- Federal Budgets and Funding for Research and Education.
  - Public funding for agricultural research and development was estimated to be in excess of \$3.8 billion in 2000. Private expenditures exceeded this amount by \$673 million according to Alston and Pardey. Over time, Federal appropriations to research and extension have increased in real terms. However some uncertainty over future funding exists, in recent years federal budget surplus has been eroded by tax cuts and increased military spending. Recent initiatives like “Create-21” have argued for increased formula funds for the Land Grants. Given enough political

pressure, funding cut-backs are not imminent. These trends do however have an impact on programs that can be made available to farmers.

- Continued Concentration and Specialization
  - “In spite of the predominance of family farms, there is strong evidence of a trend toward concentration in agricultural production.” Citing the 1997 Census of Agriculture, EPA stated that by 1997 approximately 46,000 farms accounted for 50% of ag. sales. This number in and of itself doesn’t indicate much. A better indication of increasing concentration might be that according to the 2002 Census of Ag. 2.7% of the farms had sales of \$1 million or more and these accounted for 95% of the value of agricultural products sold. In 1997 this same tier comprised 2.4% of the farms and had 82% of the value of agricultural products sold. (2002 Census of Agriculture) “During the past 40 years livestock production, especially poultry, dairy, and cattle finishing and to a lesser extent crop production have become increasingly specialized on fewer and larger farms.” Concentration on the farm does not say anything about concentration on the buying side of agriculture and the relative bargaining strength of the majority of farmers. The majority of U.S. farmers will still have little bargaining power over the price they receive. Negotiating contracts, timing of sales and crop mix are education programs that will be most useful for producers. Extension economists have the methods to provide education programs on those topics.
- Federal Agency/State Land Grant Interaction

- CSREES has become more of a granting agency than an education or research support agency. This has been in line with Reagan Revolutionary ideals of smaller government, devolution and that the private sector can do it better. Congress has increasingly emphasized competitive funding for special projects which has had the effect of providing “top-down” guidance to programs. The Agencies seem to have heard this message loud and clear. In consequence, the partnership between the Land Grants and the Agencies has been weakened except in the case of competitive and special grants programs. Related to ag. research, Huffman and Just provided an analysis of the impact of changing funding structure on program efficiency and that perhaps formula funding rather than competitive funding is a relatively more efficient way to go. Extension as a conduit for research information to the public would by its mission suffer from any inefficiencies realized. Emphasis placed on competitive funding places National Program Leaders (NPLs) in an overseer and manager’s role rather than in a partnering role with the Land Grants. A consequence of this has been that NPLs as the federal policy information and update conduits have had to be replaced by state level extension specialists who must take time to educate themselves on federal policy matters.
- State Extension Reorganizations
  - States in general have fewer and more specialized agents. Less of these agents are ag. agents. At the planning level, emphasis has been shifted

away from grass roots planning and programming to top-down planning and programs. Specialists have in the main become departmental faculty with split appointments and responsibilities in teaching and research as well as Extension. Time spent by agents and specialists on agricultural Extension education is diluted by other demands.

- Global Climate Change and Other Environmental Changes.
  - It is or it isn't. Opinion is divided on whether the world climate is changing, how much if it is and/or why if it is. Contingency plans for change can't hurt as much as not planning. Extension opportunities exist for education programs relating to constrained production planning especially under water constraints.

### **Summary**

Why do these trends matter? Farm numbers have been declining since 1935.

Concentration and integration is an issue going back 50 years. Both of these issues have been of concern over those time periods. New issues/trends have emerged which are part of technology change, free trade, and public finance. Methods and education programs can be easily adapted from the discipline to deal with issues such as biotech, biofuels and trade. Those not so easily dealt with are environmental and social and the farmers place in society. Transitions out of farming, retiree transitions into farming, health care, rural communities and rural infrastructure are all programs that are not traditionally tackled in our profession but are ripe for the picking. Bull et al. asked the question "Is Extension Relevant for the 21<sup>st</sup> Century?" The answer was that it is more relevant today than ever

because of its ability to evolve and respond to change. Recognition was given to the need for new partnerships outside of traditional production ag. With those the future is rosy.

## References

NASS/USDA. 1997 and 2002 *Census of Agriculture-United States Data*.

Alston, Julian M. and Philip G. Pardey, "Cultivating our Competitive Edge, Funding Trends for Research and Extension and the Future of United States Agriculture," National C-FAR seminar series, March 13, 2007

George E. Brandow. "Government Programs in Relation to Agricultural Adjustment. In Mervin G. Smith and Carlton F. Christian *Adjustments in Agriculture – a National Basebook*, Iowa State University Press, 1961, pp. 337-349.

Beale, Calvin L. and Karl G. Shoemaker. "Adjustments in Rural Human Resources." In Mervin G. Smith and Carlton F. Christian *Adjustments in Agriculture – a National Basebook*, Iowa State University Press, 1961, pp. 260-284.

Brewster, John M. and Gene Wunderlich, "Farm Size, Capital and Tenure Requirements" In Mervin G. Smith and Carlton F. Christian *Adjustments in Agriculture – a National Basebook*, Iowa State University Press, 1961, pp. 196-228.

Bull, Nancy H., Lawrence S. Cote, Paul D. Warner, and M. Ray McKinnie. "Is Extension Relevant for the 21<sup>st</sup> Century?" *Journal of Extension*, 42(6). Electronic journal. [www.joe.org/joe/2004december/comm2.shtml](http://www.joe.org/joe/2004december/comm2.shtml).)

Kiehl, Elmer R., "Present and Future Livestock Production. In Mervin G. Smith and Carlton F. Christian *Adjustments in Agriculture – a National Basebook*, Iowa State University Press, 1961, pp.171-195.

Environmental Protection Agency ([www.epa.gov/oecaagct/ag101/demographics.html](http://www.epa.gov/oecaagct/ag101/demographics.html))

Huffman, Wallace E. and Robert E. Evenson. "Long-Run Structural and Productivity Change in U.S. Agriculture: Effects of Prices and Policies." Economic Growth Center, Center Discussion Center Paper No. 773, Yale University, June 1997.

Huffman, Wallace E. and Richard E. Just, "*Funding, Structure, and Measurement of Agricultural Research.*" American Journal of Agricultural Economics, 76(4):744-759.

Minnesota Issue Watch, "U.S. farmers see Brazil as lucrative investment." January 2003.

Web referenced article: [www.mnplan.state.mn.us/issues/](http://www.mnplan.state.mn.us/issues/).

Ogren, Kenneth.E. and Orlin J. Scoville "Farm Supply and Marketing Activities in Relation to Agricultural Adjustments " In Mervin G. Smith and Carlton F. Christian *Adjustments in Agriculture – a National Basebook*, Iowa State University Press, 1961, pp. 229-259.