

A HOLISTIC VIEW OF THE FUTURE

Dennis DiPietre
KnowledgeVentures, LLC
1802 E. Whisenhunt Rd., Columbia, Missouri 65201
E-mail: hogs2denis@aol.com

INTRODUCTION

In the early 1980's, I co-authored an undergraduate Farm Management text with the title: "Farm Business Management: *Successful Decisions in a Changing Environment*"; if I only knew! To say we are now in a period of rapid change and it will continue is nothing short of a tautology. Humanity, however, is facing some very serious questions about global sustainability as the world transitions out of the "wild west" mode of undiscovered areas of abundant natural resources just over the horizon, to the stark reality that population continues to expand while available resources are getting more expensive to find and utilize.

This was the muse of Thomas Robert Malthus who wrote in the mid 1700's that humanity would constantly challenge, through expanding population, the globe's ability to produce sufficient food to sustain it. His forecast of tripartite doom through disease, aggression and, of special interest to this group, famine, as the necessary cure for overpopulation is still in the forefront of policy makers minds whether they know of his work or not.

Norman Borlaug, whose recent passing we note, led nothing short of a global transformation of agriculture beginning in the mid 20th century, primarily by applying the science of plant genetics to overcome localized growing issues and to make a class of plants that could sustain large yielding heads of grain, for instance, without lodging. Borlaug was the last of the traditional agriculturalists that seemed to depend on more and better fertilizers coupled with better quality genetics.

Environmentalists have reinterpreted his work, which literally saved millions from starvation, in a negative light and have succeeded in gaining control of the various government and private funding agency agendas to cease subsidizing this pathway in the future. Borlaug himself believed that only a few areas of the world remained to be developed for crops, mainly the Russian steppe and parts of South America and Indonesia and then, some serious checks on population would need to appear, either through private decision or public policy.

Trying to understand the emerging "holistic" nature of the swine industry of the future cannot be divorced from this reality, as its most recent transformation from "pigs in mud puddles" to the current production systems of the developed world escaped the mud only to become newly mired in a development model that policy makers, currently in the ascendancy, would like to retire.

DEVELOPMENT MODELS

One of the biggest issues facing both the global swine industry and all of agriculture is the politicization of almost everything, but perhaps most important science. The role of scientists as “dispassionate purveyors of value free information” has all too often given way to a politicized class of agenda-driven researchers who often operate their craft in the mode of “conclusions seeking evidence”. The recent e-mail imbroglio of the East Anglia University just illustrates the current state of affairs at major and minor universities.

To understand this, I think you begin with the issue that many universities must rely on government research aid (local, state, country, global such as the United Nations) to survive and many, more than specialize in it. And it has become a source of funds which has shown that it can be and often is now as corrupting and corrupt as any accusation which could in the past be leveled at private company research sponsorship, regarding bias. Gaining access to government funding in highly politicized areas of research (such as anything related to the environment) seems to require something far more than a *tabula rasa* of preconceptions for the proposals to be successful. This leads to the “in-crowd” of dependable researchers who will reach dependably supporting conclusions in the dependably accepting refereed journals while challengers are apparently now systematically refused both funds and publication venues. Whether or not this situation is corrected will largely determine the unfolding future of global agriculture and its methods. My personal opinion is that the demands for food will eventually force the truth on everyone.

The underlying falsehood of this current model described above is based in the following *modus*. A consensus conclusion is reached regarding the truth of an issue and then researchers excuse themselves from rigorous scientific research, the principles of doubt which undergird true research, and “spurious” data and results which at times do not support the conclusion are discarded. This is done because the stakes are too high with regard to the environment to let any other conclusions or evidence delay the full implementation of the consensus fix(es).

ACTUAL THREATS OR DISTRUST OF SCALE?

If you make a list of the current criticisms which are leveled at modern agriculture by not only major policy makers, but by NGOs, interest groups, the media and the arts (witness a veritable cottage industry erupting in anti-modern, food production and processing films) you are left wondering something important. Are the criticisms real problems or are they a reflection of the East Anglia problem? Namely, that a distrust of modern agriculture has developed, based on a number of preconceptions and belief systems which include, among other things, distrust of corporations and the likelihood of corporate responsibility, distrust for concentration and the scale it normally entails, and certain beliefs about rural justice and the social contract issues surrounding the transitioning of agriculture from small-scale family plots to agribusinesses. Conclusions in these areas seem to spin up the supporting “research”, funding, and eventual policy creation and implementation.

Activists discovered that attempts to inject their influence in modern agriculture by seeking governmental restraints and prohibitions were often countered by the multi-national character of corporations which could escape government regulations by transferring their business to other, less regulated countries. This resulted in a two part strategy to enforce conformity by attacking the brand of these companies (which has global revenue ramifications) and by appealing to global governance bodies like the United Nations hoping to enforce global restrictions and taxes. The former has been much more successful than the latter as the Global Warming meetings held recently in Copenhagen illustrate.

POPULATION GROWTH AND INCOME

Regardless of the political, corporate and individual influences that shape the future of the swine industry and production agriculture in general, I believe there are some things which will be relatively inescapable and will be manifest in magnitude only depending on which group or points of view gain ascendancy and when. There is no doubt that the population of the world is growing and there is further no doubt that the quickest pace is in areas of the world which are the poorest. Many factors contribute to shape global and regional population growth but the most effective thing in slowing down rates of growth is increases in per capita income. As nations and regions become more prosperous, their rates of growth diminish (and the opposite is also true at least by correlation). Large family strategies can be related to religion and other motives but survival drives this strategy in the poorest of the poor nations. Current efforts to restrict, tax and prohibit growth, if successful, seem likely to restrain the growth of per capita income and thereby exacerbate the population problem. A politically enforced “one-child” policy is the strategy employed where per capita income growth cannot increase at a rate fast enough to naturally restrain population growth.

PRECISION AGRICULTURE

Rising demand for food from the people least able to both organize to produce it and afford to pay for it is the challenge of the next 25 to 50 years. The global poor tend to consume mostly coarse grains and some vegetables so the demand for meat will be conditioned on increases in per capita income or population growth in areas where per capita income supports significant meat consumption. The demand for arable land, global and regional water resources, and global and regional energy resources will eventually become constraining unless technological (including plant and animal genetics) solutions outpace the growing demand. You bet against technological advance at your own peril but governmental policy constraints on technological solutions may limit the speed of progress.

What this means is that the future will likely be more volatile than the past along a host of important dimensions. Our course within agriculture and within the swine industry in general will need to become more precise. Those who are successful will find ways to live and thrive within a much smaller range of the full volatility that will be served up over the next decade. With volatility comes opportunity, so while we may have to trade off some of the future “average” to buy the protection of a risk-reduced strategy, that average should be larger than in

the past. Failure to define a strategy which escapes the turbulence to smoother air will result in chronic liquidity crises and the failure to secure adequate financing.

Precision agriculture, which is a moniker developed primarily in crop agriculture, refers to the ability to measure variation in the production process and intervene with highly targeted solutions prior to harvest as well as prescribing interventions for the next cycle. The ability to effectively monitor a production process for variance from intention and intervene to restore intention is the key to operating within this “narrower” band of variance which the market and “conditions” of various kinds will increasingly serve up.

Following a more precise biological production strategy will result in increased efficiency, since the root cause of high cost systems is almost always traceable to high variance production. Resource use and therefore effluent produced per hundredweight are minimized as standard deviation of production is lowered. Most modern swine production systems produce standard deviations of finished liveweights in the range of 10-12 kg. Since most data sets of weights of animals sold are usually normally distributed, it takes a range of 40-50 kg to contain 96% of the production outcomes. This is unacceptable in the future and can be markedly reduced on a consistent basis where a knowledge based approach with the proper incentives is employed.

By the same token, managing the cost of input purchases, especially feedstuffs and the sale prices of finished animals in conjunction with each other (that is, managing variation in margin) is the corollary to reducing production variance. Those who hope in the long run to survive by accepting the day to day average price of feed and animal prices will face increasingly wrenching swings in net income which will make acquisition of capital difficult even if the farm survives by other income strategies (such as off-farm employment). Managing the so-called “crush” will be more important than achieving a “high” hog price, which has lost all meaning since input costs are capable of rendering record high hog prices into a financial loss.