
Public Policy, Biotechnology and the Structure of Agriculture

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There are numerous perspectives on the relationship between emerging biotechnology innovations and the structure of agriculture. Some emphasize what can be done to influence that relationship. The perspective presented in this paper precedes any such prescriptions. It argues that the historic interplay of public policy and marketplace forces will continue pretty much unabated, extending most trends but adding to them new expectations.

The next few years will see a proliferation of new products that offer increased productivity and environmental gains. These will foster a general consolidation of farms and ranches at a rate somewhat lower than in the past. Government will do little to intervene. As always, public policies will not encourage smaller-scale production agriculture. Nor will there be a return to production control practices. But a new policy dimension will be added—a reliance on biotechnology to reduce environmental hazards.

EXPECTATIONS FOR NEW PRODUCTS

In forecasting public policy trends, the most important things to examine are policymaker perceptions. Perceptions guide process decisions. Such views are created as public officials and their staffs both systematically search and more randomly scan their environments for policy-relevant information. No one has been looking for a great debate on this topic. Biotechnology discussion and analysis have been a part of those environments for nearly a decade, nonetheless, some quite specific expectations have been created.¹

Three policymaker beliefs that are generally shared stand out about biotechnology's future in agriculture. First, officials commonly understand that U.S. agriculture is soon to be changed, perhaps dramatically, by the advent of a plethora of new products. Some will be crop specific, others will influence production practices. Second, these products are expected to bring significant increases in the supply and availability of numerous commodities from such major ones as dairy to minor crops like strawberries. Along with greater supply, officials also have been led to expect improvements in affected commodities, ranging from better flavor and texture to improved food safety.

¹ The primary sources for this analysis are policymaker interviews. See Browne (1995).

Particularly interesting to many officials, especially from areas where growers and other residents share space, are products that produce positive environmental impacts: less water use, reductions in fertilizers and other chemical inputs, and a switch from intensive use of highly erodible and other fragile lands to ones that better sustain production.

The third belief is that biotechnology will bring important new profits to the sector, both for entrepreneurial agribusinesses and innovative growers. The expectation is that U.S. leadership in agricultural biotechnology will bring international gains in marketing both technology and food products to the world. Part of that belief is premised on the notion that the international marketplace will be increasingly short of food (Brown 1994).

The reasons why these beliefs are shared are easy to understand. On the one hand, biotechnology products—both in medicine and agriculture—have weathered substantial tests in the regulatory process (Browne and Hamm 1988).² On the other, most of those who provided policy information combined effectively to discredit the science of biotechnology opponents, most notably Jeremy Rifkin. As a consequence, the shared beliefs of public officials are near what policymakers find as an appealing consensus—biotechnology means a better and largely irreversible future for U.S. agriculture.

ACCEPTABLE TRADE-OFFS

Two other expectations worry policymakers, but not much. First, they fear that consumers will avoid biotechnology products because individuals such as Rifkin will continue their opposition. Public officials, however, see that as a marketplace problem: let retailers work that dilemma through with their customers. The decisions of some grocers to offer “bST-free” milk is thought of as a reassuring event, one that shows that public policy actions are unnecessary.

The second worry is that growers will continue to exit the sector as they encounter economic losses, exaggerated by the costs of new biotechnology and its practices. For most policymakers who at least nominally appreciate over 140 years of public policy efforts to keep farmers in business, that concern is more important than the consumer problem. Public officials understand that efforts will be made to limit biotechnology introduction, use and its gains. But, intuitively, they feel these will be unsuccessful.

Very few policymakers, therefore, are moved by this farm problem. There are three reasons why they are not. First, farm losses have been understood to be slowing. While nearly 30 percent of farms were lost in the 1950s, just over 25 percent in the 1960s and about 18 percent in the 1970s, only 12 percent were lost in the 1980s (Browne 1993:4). Second, policymakers find it relatively easy to deal with the economics of the sector, but they know it is

² An often overlooked point is the degree to which biotechnology’s medical value, and glamour, rubs off on its acceptance in agriculture. Its allure is hard for public officials to resist.

hard to keep individual growers in business. Farm losses continued during the past four decades even when net farm incomes rose.

Third, public officials recognize that farm losses are most severe at the mid-sized farm level. Those producers, it seems, simply face structural disadvantages that are beyond the historic emphasis of farm income policy. Regulating biotechnology will not alter that fact. In contrast, large farms that are the most likely biotechnology adapters are suffering fewer losses. And small farms, which rely mostly on off-farm incomes, have generally stabilized in number. Biotechnology need not be adopted by these small-farm growers for them to continue in their businesses.

Added to the limited concern of policymakers for farm effects are the attitudes of growers. Farmers themselves have shown almost no willingness to limit their use of new technologies. On the contrary, even farm protest leaders of the 1980s were willing technology adapters and advocates (Browne 1993). Family-farm activists, who were also active in the late 1980s, favored limitations but found few supporters in farm ranks. Nor did environmental interest groups, that once seemed natural allies, support them. The consequences are that demands to limit technology lack credibility in all but the most isolated places. So growers, like consumers, are left to market forces and some added federal income transfers that help some of them afford innovation.

POLICY RESULTS

These conditions make it unlikely that public officials will move against biotechnology innovations. Quite the reverse seems true. To facilitate economic gains from investing in product research, policy efforts to protect business' intellectual property rights will intensify. On another front, regulations that emphasize zero-risk tolerance for product use will be subject to greater scrutiny. Already the thrust of federal regulation, in general, has moved away from the strict policies of the 1970s to an emphasis on considering costs to the regulated industries in the 1990s (Eisner 1993). At the very least, this means that major biotechnology manufacturers and users will be looked to for more policy information. This, of course, will only reinforce currently prevailing perceptions of public officials.

Thus left to the market, the agricultural sector will face an ever greater structural imbalance in the future. Both public reliance on the largest farms and government tolerance of the smaller ones will continue.

But it seems the market will not be the only facilitating mechanism for encouraging this structural imbalance. The major policy debates about agriculture and its future are over issues of the environment and property use. These are among the most contentious, and certainly the most difficult to resolve, policy contests in the history of U.S. agriculture (Browne 1995). Because policymakers understandably want such conflicts to abate, solutions are being actively sought to reconcile grower and environmentalist differences.

Biotechnology, which looks so promising for making environmental gains while fostering production, has even more than normal appeal as a result. What seems likely to occur are policy initiatives which encourage biotechnology product use. "Green payments" may be one mechanism, but regulatory penalties for relying on traditional practices appear more affordable in a budget conscious environment. Any such efforts to facilitate biotechnology use, unless accompanied by substantial assistance, will work to the advantage of the largest producers as those most likely to afford them. Regulations will be hard to bear for middle and small sized growers.

CONCLUSION

It seems evident that, given current policymakers' perceptions and pending public policy problems, biotechnology will only add to the farm structure problem of continuing consolidation. But for many, this brief analysis carries another point as well. What also is evident is just how little serious policy debate these trends seem likely to create. Political noise and analytical evidence rallied in protest against structural trends are not likely to be well-received.

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