



The Future of Sustainable Farming and Forestry in Maryland

A REPORT COMMISSIONED
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FOR AGRO-ECOLOGY, INC

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Executive Summary

One priority for the study was to assess likely effects of public policies—specifically those related to the Chesapeake Bay Restoration and smart growth—on the sustainability of agriculture and forestry in Maryland. For instance, these policies include use of nutrient management requirements for pollution control from farms; and use of zoning and other land use management tools for community revitalization, fiscal efficiency and land preservation. We recognized that factors somewhat independent of these policies—specifically advances in technology, changes in markets and business models, and evolving US trade policy—have major effects on sustainability as defined (sidebar). In this report, we address the effects of both the policies of interest and these important external factors.

Key Findings and Conclusions

Evolution of food business industries and trade agreements has created winners and losers for market access. As discussed in Chapter 1, agricultural industries across the spectrum from farms to retail moved from small scale, local production and processing and mom and pop stores to corporate behemoths in the twentieth century. Larger companies sought out larger, lower cost suppliers. At the beginning of the century, much of our food, particularly perishable food, was locally sourced. By the end of the twentieth century, food industries had grown in scale, and improved transportation networks allowed food to be transported around the globe. Major chains controlled 95 percent of all food purchased by the end of the century. With the exception of poultry, Maryland farmers have very limited access to chain store shelves, and therefore to the ultimate national and global consumer markets for their products.

For purposes of this report, sustainable farming and forestry means profitable, income producing operations that can be continued for the foreseeable future while maintaining productive, healthy soils and working land, without excessively compromising water resources and natural resource integrity in the surrounding environment. It does not refer to any particular crop, farming or forestry system.

Specialized large-scale production to supply the food industry, primarily in the Midwest and Western states, has made Maryland farms less competitive for most product categories. Farm and forest production moved West in the twentieth century, reducing profitability in the East. Farms in the Midwest and West are larger than those in older farm communities in the East. With irrigation systems and growing seasons lasting year-round, California became the fruit and vegetable basket of the country. Dairy and livestock producers also flourished in California. The Midwest became the U.S. grain belt and the Northwest became the source for lumber. By the end of the twentieth century, the states along the East Coast struggled to maintain their agricultural and forestry economies.

In one sector, this specialization of agricultural operations has benefitted Maryland: the poultry industry has flourished in Delaware and on the Eastern Shore of Maryland and Virginia. It benefits from a fairly extensive rural landscape relatively free from intrusive impacts of development, and a symbiotic relationship with the grain industry on the Delmarva Peninsula. Grain farmers sell their grain to feed the poultry

and use the poultry litter to feed their crops. Details are found in Chapter 1.

Emerging markets and changing consumer preferences and demands present opportunities.

As discussed further in Chapter 1, a local food movement has been emerging in the twenty-first century, one of a growing number of signs of new or expanding markets based on consumer tastes, demands and purchasing. Although local vegetable production for the fresh market is only a small percentage of gross farm production, there is broad consumer interest and producers are responding. Maryland could be in a position to reclaim some of its food supply chain. Closely linked to this trend are other signs that agriculture is adapting to new consumer preferences. As one Perdue representative said, “Perdue is finding product attributes that people want. The market for organics is one example. We are the largest purchaser of organic grain in the world. It is growing rapidly from a small base.” In discussing lending trends, a representative from MidAtlantic Farm Credit described clients responding to niche market demands for products that are non-antibiotic and organic. Findings are discussed in Chapter 2.

Landscape fragmentation by residential subdivision and development is among the greatest threats to farming and forestry in Maryland (Chapter 3). Maryland is part of the Northeast megalopolis that extends from Boston to Washington D.C. Since World War II, urban and suburban development has consumed farmland along the I-95 corridor and within commuting distance of cities along I-95. The suite of state and local land preservation programs and improved local land use planning and implementation programs have significantly slowed the conversion of farmland and forestland in recent years and succeeded in permanently protecting considerable acreages of contiguous productive farm and forestland in some places. However, continued fragmentation by residential development in rural areas—and the land use policies that make this possible—are likely to continue to impact sustainable farm and forestry options as the state

population grows. The map below provides a general geographic overview of those impacts.

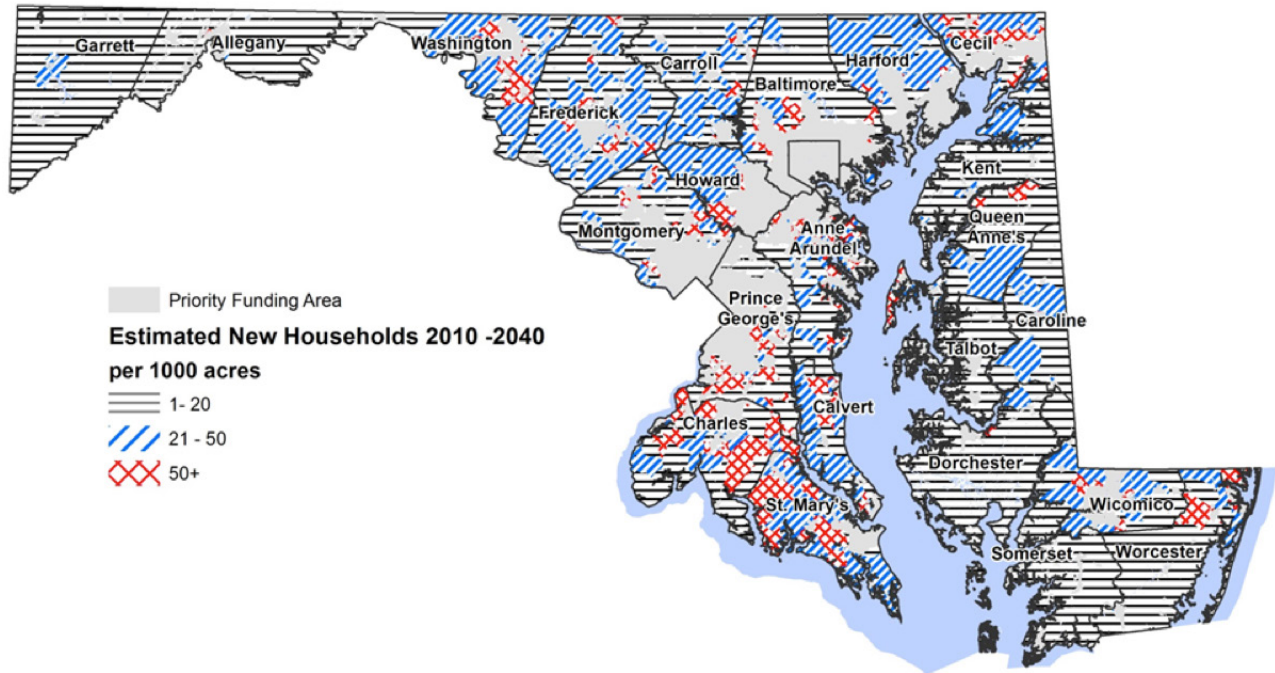
These impacts are not simple or uniform over time and place on industry sectors. Perhaps the greatest and most consistent impacts over time have been on large scale livestock operations and on timber harvesting (logging), in metropolitan (Baltimore and D.C.) regions and in parts of the state transitioning from rural to metropolitan status (Southern Maryland). Moving forward, the biggest threats will continue to be in these areas but may be increasingly significant in some parts of the Eastern Shore and Western Maryland. Details are in Chapter 3.

In making these observations, it is important to recognize that the impacts of fragmentation by development have occurred in tandem with equally or more significant impacts of several external factors (mentioned above) over the last century. Impacts of these factors are discussed further in Chapter 1.

The array of environmental measures enacted to clean up the Chesapeake Bay and health, food safety and land use regulations have presented both economic and social challenges and potential benefits to Maryland farmers (Chapter 2).

Increases in production and management costs, record keeping and reporting have certainly affected the bottom line. Costs of regulation have likely added to market factors to encourage consolidation and integration of production and the decline in mid-sized farms. There is real concern that Maryland farmers may lose a competitive edge due to increased production costs caused by compliance with environmental regulations. However, it is also clear that so far these impacts have been less than feared, and that significant internal efficiencies and management improvement have resulted from the focus on regulatory objectives. From an environmental point of view, Maryland’s farmers have been successful at implementing conservation practices and lowering pollution rates overall.

Estimated Residential Development Outside PFAs, 2010–2040, Maryland



Farmers that have and will continue to experience the biggest impacts are larger livestock confinement operations. Dairies using confinement will have the biggest burden since virtually all of the regulations addressing nutrient management apply to them. Those located on high phosphorus soils will have added challenges. Given that these pressures will increase at a time of decline for the industry, the regulations could well exacerbate the decline, particularly in the modest number of medium to large dairy operations remaining.

The poultry industry, especially on the Lower Eastern Shore, will be the second most impacted agricultural sector. Farms primarily in Lower Shore Counties where soils have been receiving litter for the longest time will face the most dramatic changes. However, if estimates from this report turn out to be accurate, the transition should be feasible and the results both economically and environmentally sustainable.

Health, food safety and land use regulations have also created barriers to agricultural value-added products, direct marketing opportunities, and new uses of commercial spaces and activities on

farms. Many are designed for larger industrial applications. These rules slow permitting and exaggerate the costs for new, small enterprises and restrict their production and marketing opportunities, perhaps without commensurate positive effects on food safety. Size-inappropriate regulations represent lost production and marketing opportunities for Maryland farmers, for whom value-added processing and marketing might bring significant economic benefit. This is a complex regulatory field and requires further research as a basis for sound policy recommendations.

Different regulations concerned with the environment are impacting the Forestry industry (Chapter 2). For forestry, it appears that the biggest regulatory impacts come not from nutrient concerns but from sediment and erosion control and logging permits, and the rules governing certification of timber for green building. Sediment and erosion control and logging permits can be relatively costly, detailed and complex for owners and loggers of the many small (< 10 acres) woodlots comprising most of Maryland’s remaining private forestland, and may require as much as 4-6 weeks to complete.

Procedures differ in every county, complicating the process for loggers operating in multiple jurisdictions. The plans are only valid for two years, a short time in the scheme of forest management plans. Cost and delays in plan and permit review make it difficult to take advantage of seasonal windows of opportunity for harvesting, particularly during the winter, when some areas may be dry enough to access and harvest for very short periods. Additional permits are required for harvests within the Chesapeake Bay Critical Area and other areas specific to certain counties. Each of these additional permits is valid for differing time periods, thereby further complicating the harvest process. Green building regulations give points to builders of state-sponsored projects who use locally sourced lumber, thus reducing greenhouse gas emissions. However, this market has not been accessible to most Maryland forest landowners, who cannot obtain certification because it is cost prohibitive for small woodlots. As a consequence, the sale of Maryland lumber for green construction has been stagnant. Recent changes in policy by the Maryland Green Building Council improve this situation.

The future of sustainable farming and forestry in Maryland will be significantly influenced by the confluence of relevant public policies and private sector investment in the industries. Relevant policies include those concerned with land use and preservation; support for resource-based businesses, including value added agriculture and direct marketing enterprises; and environmental regulation. How these policies come together will affect different industry sectors in different parts of the state, in tandem with continued effects of land development and fragmentation (Chapter 4). For example, sustainability of one agricultural sector—commodity-scale poultry on the Eastern Shore—may in part depend on limiting further impacts of development, and in part on continued evolution of nutrient management policy in ways that support profitability while adequately limiting pollution. Impacts of development include a)

residential neighbors that compromise production and litter disposal on cropland in a variety of ways, and b) conversion of remaining cropland to levels that might be insufficient to produce adequate feed, dispose of poultry litter, and avoid the need to import feed from other regions and transport litter to the Western Shore.

This example illustrates the need for a geographic-specific confluence between farmers, other industry stakeholders, counties with land use management authority (in this example on the Shore), and relevant environmental policies. It is important because anticipated return on future industry investment will depend on reasonable expectations about land use, the ability to produce and process birds and bird feed and dispose of litter, and the environmental regulatory playing field.

As population and development continue to expand, this kind of confluence between private objectives (e.g., profitability) and public objectives (e.g., water quality) becomes increasingly essential. In the absence of deliberate confluence, the industries can only react to what happens in the landscape and marketplaces around them. Under that scenario, the sustainability of some industry sectors may be compromised or lost in some parts of the state, as has already occurred in limited circumstances up until now. Exactly what will happen where is anybody's guess, but Chapters 3 and 4 suggest some possibilities.

If there is an over-arching recommendation indicated by the findings and conclusions of this report, it is that Maryland's public policy should evolve explicitly both to achieve public objectives of interest and to inform and support private sector investment in these two industries, through a collaborative process.

Conclusions and preliminary answers to the three fundamental questions posed in the project are found in Chapter 4. Those questions are:

- 1) Where do Maryland farming and forestry appear to be headed under existing trends in key external factors affecting market access and

preferences, industry efficiency, profitability and land use change?

2) Where (geographically) and what kinds of farming and forestry might be most affected by land use changes and recent environmental and policy initiatives in Maryland, and which might be most sustainable?

3) How might public policies be adapted to minimize negative and maximize positive effects of Bay restoration, smart growth initiatives, and important externalities on the sustainability of farm and forest production and marketing options?