# Sustainable Animal Agriculture on the Delmarva Peninsula:

An analysis of state and federal policies


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Jennifer Anderson, MPH
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## EXECUTIVE SUMMARY

This paper reviews the current federal and states policies related to sustainable animal agriculture on the Delmarva Peninsula, an area comprised of nine counties in Maryland, three counties in Delaware[i] and two counties in Virginia.[2] The paper presents an overview of the current state of animal agriculture in the region, citing both benefits and detriments of the current model, as well as information regarding the concept of sustainable agriculture and the policies that promote or inhibit the implementation of more sustainable practices. It also provides insight into the landscape of animal agriculture on the Delmarva Peninsula through interviews with farmers about their experiences with the current system. Through the research, three barriers were identified as the primary limitations to implementing more sustainable practices: finances, access to information and services, and indebtedness to existing contracts. In an effort to address the identified barriers, this paper summarizes the federal and state policies and programs intended to support farmers in the implementation of more sustainable animal agriculture practices, presents national and regional agencies and organizations that provide information and guidance to farmers wanting to transition to more sustainable methodologies, and identifies organizations able to advise farmers on the parameters of animal agriculture production contracts. It concludes with recommendations to support farmers wanting to transition to more sustainable animal agriculture practices. These recommendations include an expansion of funding, programs, and research, improved program approval standards and accountability, as well as access to fair and competitive markets.

[i] Cecil county in Maryland and New Castle county in Delaware are included in these counts; however, only part of each county lies within the Delmarva Peninsula boundary. (http://msa.maryland.gov)

## INTRODUCTION

Animal production on the Delmarva Peninsula includes dairy and beef cows, swine, turkey, and poultry, with the latter comprising the majority of food animals raised in the area.[3–5] Over the last 20 years, animal agriculture production on the Delmarva Peninsula has seen marked growth, with pounds of chickens processed increasing by 34% during that time.[6] In 2017, the Delmarva Peninsula produced 9.5% of broilers, or chickens raised specifically for meat, in the United States (U.S.), positioning Delaware, Maryland, and Virginia within the top 11 broiler producing states in the nation.[7] Production and export of livestock and poultry are predicted to increase across the U.S. in 2018.[8]

The size of the broiler industry, and its rate of growth, on the Delmarva Peninsula raise many environmental and public health concerns. Conventional animal agriculture practices have been associated with disease transmission among animals as well as between animals and humans, air pollution, and ground and surface water contamination.[9] Given the potential environmental and public health impacts of conventional animal agriculture, it is important to understand alternative animal production practices since greater implementation of more environmentally sustainable methods may reduce some of these effects. Therefore, an analysis of current practices and sustainable alternative methods is a valuable resource to ensure a healthy future for the Delmarva Peninsula.

## BACKGROUND: ANIMAL AGRICULTURE PRODUCTION ON THE DELMARVA PENINSULA

*Consolidation and Vertical Integration*

Broiler production on the Delmarva Peninsula dates back to the 1920's.[10] Favorable weather, prime land and water, and supply of corn and soybeans for feed fostered successes of early farms, anchoring broiler production in the area.[10] With continued success, animal agriculture began to see new farming practices in the 1930's, including greater intensification and concentration to increase efficiency and profits.[11] Cheap grain prices coupled with the adoption of new farming methodologies that encouraged the industrialization of farmer processes in animal agriculture allowed operations to grow more animals using less space in a shorter period of time.[11] In addition, the introduction of non-therapeutic doses of antibiotics to promote growth and counter some of the negative consequences related to the overcrowded conditions common in concentrated animal feeding operations (CAFO's) transformed animal production.[11] This streamlined version of animal agriculture production is commonly referred to as industrial animal agriculture due to the large-scale and efficiency of the production process.[11]

As animal production increased in size and efficiency, the management practices associated with animal agriculture also underwent consolidation throughout the supply chain. Poultry companies began to utilize vertical integration, which offered a more streamlined business model for animal agriculture.[10] In a vertically integrated system, companies own and control different stages of the broiler production process, including feed mills, hatcheries and processing plants, allowing them to control all stages of the system, from production to processing to marketing.[10] According to the National Chicken Council, vertical integration allowed the broiler industry to utilize pharmaceutical, biological and production technologies to improve efficiency, responsiveness and profitability.[10] By owning all parts of the production

process, these farming companies, or integrators, have grown considerably over time, resulting in a small number of companies managing and controlling the U.S. broiler industry today.[11]

*Contracting*

In order to further streamline animal agriculture operations, integrators began to employ the use of contract agriculture. In the U.S., 96% of chickens are grown under production contracts, an arrangement in which the integrator maintains ownership and control of the inputs (for example, the chickens, feed, and medicines) and the production practices.[12,13] Meanwhile, the growers are responsible for all capital investments, including the chicken houses, equipment, and repairs, as well as the poultry waste, an arrangement which can lead to significant debt.[13] In addition, growers must adhere to the production practices mandated by the integrator resulting in greatly diminished autonomy.[13] This production contract relationship developed in the broiler market in response to farmers' struggles resulting from the risks involved in financing chicks and feed.[10] As described by the U.S. Department of Agriculture (USDA), production contracts specify services provided by a farmer for a contractor who owns the commodity while it is being produced.[14] The contract covers (1) the services provided by the farmer, (2) the manner in which the farmer is to be compensated for the services, and (3) the specific contractor responsibilities for provision of inputs.[14] This practice of production contracting has resulted in higher concentrations of poultry and swine production in a few geographic areas, including the Delmarva Peninsula.[15]

*Benefits of the predominant animal agriculture system on Delmarva Peninsula*

The broiler industry provides many benefits to the Delmarva Peninsula including economic growth, an increase in jobs, and providing ample food supply. In 2017, the wholesale value of chicken produced on the Delmarva Peninsula was $3.4 billion, a 38% increase over a 20-year period (adjusted for inflation).[6] This economic surplus provided jobs to 1,549 farmers,

employed as chicken growers under production contracts.[6] In addition, companies on the Delmarva Peninsula processed 4.2 billion pounds of chickens in 2017, which provides a substantial contribution to the food supply.[6] Given that the projected broiler consumption for 2018 is 90.4 pounds per capita, the broiler industry plays a key role in meeting consumer demand.[16]

Production contracts can offer a variety of benefits to farmers as well. The arrangement provided by a production contract can facilitate a mutually beneficial partnership, garnering profits for both integrators and growers.[17] Production contracts offer growers price stability, which allows farmers to plan ahead and make projections, while also avoiding market price volatility with the predetermined pricing arrangements of a contract.[17,18] Furthermore, the guaranteed income of the contract often affords growers access to improved financing.[18] Additional benefits of contract farming include integrator-supplied inputs and production services; credit advances from the integrator; an introduction to new technologies and the ability to learn new skills; and access to new markets that can be unavailable to smaller farmers.[17] Therefore, with effective management, production contracts can foster growth, security and sustainability on the Delmarva Peninsula.

*Challenges of the predominant animal agriculture system on Delmarva Peninsula*

While consolidation, vertical integration and contracting have improved the efficiency, productivity and profitability of animal agriculture, these processes do not come without challenges. The current model of industrial agriculture and production contracts have raised concerns regarding human and environmental health as well as equity issues regarding contracts. Industrial animal agriculture has been associated with several human health consequences including risk of infections from transmission of harmful microorganisms from animal operations, respiratory effects from increased exposure to air pollution from animal operations,

and multiple negative health impacts due to exposure to ground and/or surface waters that can be contaminated by manure from animal operations.[19–22] Groundwater contamination is of particular concern on the Delmarva Peninsula since the region sits atop a shallow drinking water aquifer.[11] These risks associated with industrial animal agriculture could potentially be detrimental to the health of the nearly 1.4 million[ii] residents who call the Delmarva Peninsula home.[23]

The environmental concerns related to industrial animal agriculture include air pollution, water contamination and destruction of native flora and fauna.[20,22,24] This is of particular concern considering the Delmarva Peninsula comprises a large part of the land area that makes up the Chesapeake Bay watershed, which the USDA has designated as one of eight Critical Conservation Areas in the U.S.[25] Due to the interconnected nature of watersheds, these ecosystems can be vulnerable to numerous types and sources of pollution, including agricultural operations.[25] Furthermore, the impact of agricultural pollution on watersheds is greatly influenced by the location, quantity, and size of the surrounding agricultural operations.[26] The U.S. Environmental Protection Agency (EPA) cites agriculture as the single largest source of nutrient and sediment pollution entering the Chesapeake Bay.[26] Excess nutrients, such as nitrogen and phosphorous, can promote algal bloom growth, which in turn can block sunlight and deplete oxygen levels in the water, thus negatively affecting plants and animals in the watershed ecosystem.[22,27] Given the size, density, and number of animal agriculture production operations on the Delmarva Peninsula, the environmental risks presented above are of great concern for the Chesapeake Bay watershed region.

While production contracting can be a mutually beneficial partnership, as described above, it can also place excessive burden on the growers. In the contracting relationship, the

[ii] Total population of the 14 counties on the Delmarva Peninsula.

growers are typically responsible for manure management and dead animal disposal because contracts generally do not cover these activities.[15] Therefore, the costs of pollution and waste management fall on the growers, many of whom are unable to afford these expenditures at the contracted rate of compensation.[11] In addition, contracted growers are compensated based on the weight and quantity of their broilers and the efficiency with which they are raised.[13] This controversial arrangement is often referred to as a tournament system due to its highly competitive nature, which frequently pits farmers against one another.[28] While, in theory, the structure of the tournament system acts as a cost-controlling mechanism for poultry companies and promotes greater productivity and management, the structure often results in drastic payment fluctuations from flock to flock and can be used as a way for the companies to retaliate against perceived grower defiance.[28] Thus, the use of production contracts raises concern over the equity of the integrator-grower relationship, especially in regards to environmental stewardship and its costs.[15]

AGRICULTURAL SUSTAINABLITY

In order to assess agricultural policies and programs that support sustainable agriculture practices, it is important to establish parameters for the definitions of sustainability. The U.S. government describes sustainable agriculture as an integrated system of long-term plant and animal production practices that will satisfy human food requirements; enhance environmental quality; use nonrenewable resources efficiently and integrate natural biological cycles and controls when appropriate; sustain the economic viability of farm operations; and enhance the quality of life for farmers and society as a whole.[29] In addition, sustainable agriculture operations employ practices such as integrated pest management, rotational grazing, soil conservation, water quality and wetlands conservation, cover crops, crop and landscape diversity and nutrient management in their agricultural stewardship efforts, which contribute to long-term profitability, environmental conservation and farmer quality of life.[30] According to Horrigan et al., the conventional or industrial characteristic of today's agricultural landscape is considered unsustainable because the associated degradation of natural resources outpaces their regeneration and because it is heavily dependent on nonrenewable resources.[9]

One important distinction to make is the difference between sustainable and organic agriculture. Organic agriculture is typically characterized by the elimination of external agricultural inputs such as the use of synthetic inputs, including synthetic fertilizers and pesticides, veterinary drugs, genetically modified seeds and breeds, preservatives, additives and irradiation.[31] These inputs are replaced by ecosystem management techniques that promote and enhance biodiversity, biological cycles, and soil biological activity.[31,32] While the parameters associated with organic agriculture certification lend themselves to greater environmental stewardship, organic operations are not always entirely sustainable. Similarly, non-organic

operations are not always unsustainable. For the purposes of this report, policies and programs specific to organic agriculture have been considered as those that support sustainability because of their ability to assist farmers in implementing more sustainable practices than those employed in the conventional agricultural setting on the Delmarva Peninsula.

## METHODS

The information in this report was compiled through literature reviews, key informant interviews, and document analysis. A review of both academic and gray literature was conducted to assess the current state and federal policies pertaining to conventional and sustainable animal agriculture practices on the Delmarva Peninsula. This information was supplemented by document analysis, which entailed reviewing reports and website information available from governmental agencies, industry leaders and environmental groups. Through the initial assessment, some barriers were identified in the policies associated with sustainable animal agriculture practices. To better inform the understanding of policies in practice, interviews with three Delmarva farmers were conducted regarding their experiences with conventional, sustainable or mixed agricultural practices. The three informants were asked to describe their involvement with conventional and sustainable animal agriculture practices; their perceptions of barriers to sustainable agriculture; their hopes for future agriculture policies at the state, regional and national levels; and their professional opinions about how animal agricultural practices can be improved in the region. The participants were selected in order to gain insights and first-hand perspectives on sustainable agriculture and will remain anonymous in this report in order to protect their privacy and operations.

## PREDOMINANT BARRIERS, POLICIES, AGENCIES, AND ORGANIZATIONS IMPACTING SUSTAINABLE AGRICULTURE PRACTICES

Through the initial research process, three barriers were identified as being the most inhibitive to farmers considering the transition to more sustainable animal agriculture practices on the Delmarva Peninsula. Likewise, the informant interviews provided insight into many of the challenges farmers face under the conventional animal agriculture model and first-hand perspectives on sustainable alternatives. The most prominent barriers include financial limitations before, during and after the transition process; access to information on transition procedures; and indebtedness to existing production contracts. In order to address these barriers and serve key stakeholders, additional research focused on identifying and assessing state, federal and industry policies and other resources pertaining to animal agriculture, agricultural conservation, and sustainability.

*Barrier 1: Finances before, during and after transition*

Many farmers in the United States experience economic hardships at some point in their career.[33] Sometimes these hardships serve as the catalyst for the desire to embark on a new path such as transitioning from conventional agriculture to more sustainable practices, especially if this transition allows farmers to tap into a market that can offer greater profitability (i.e. organic). However, the upfront costs and investment required to initiate and maintain such endeavors can inhibit the transition process. Despite some markets offering transition premiums, such as in the dairy sector,[18] farmers working to implement more sustainable practices often experience a shortage of funds during the transitional period. This can affect various sectors of agriculture in different ways. For example, in order for poultry to be certified organic, the chickens "must be under continuous organic management beginning no later than the second day of life".[34] This can

be prohibitive to some farmers since organic chicks and organic feed are more costly than their conventional counterparts.[18] In addition, farmers transitioning to organic production may need to temporarily sell sustainably-raised animals on conventional markets if they cannot secure organic feed, which can result in financial loss when compared to the higher market values sustainable products garner on organic markets.[18] Without proper planning and financing, transitional farmers may experience increased costs and drops in productivity. This lag between transitioning animals to sustainable rearing and gaining access to the higher market prices associated with such practices can be catastrophic for small-scale farmers. Therefore, policies and programs that assist farmers financially before, during and after the transition process can be crucial to the operation's success.

*Federal Level Policies and Programs*
(Appendix A)

The following policies and programs at the federal level can impact farmers with financial constraints before, during and after the transition from conventional to sustainable practices:

- Agricultural Management Assistance (AMA)
- Conservation Stewardship Program (CSP)
- Environmental Quality Incentives Program (EQIP)
- Environmental Quality Incentives Program (EQIP) Organic Initiative
- Farm Credit System (FCS)
- Organic Agriculture Research and Extension (OREI)
- Organic Certification Cost Share Program (OCCSP)
- Organic Transitions Program (ORG)
- Sustainable Agriculture Research and Extension (SARE)

- Value-Added Producer Grant Program (VAPG)

All federal programs identified offer some level of support to farmers for the implementation of sustainable agricultural practices. AMA funds conservation projects such as production diversification, resource conservation, integrated pest management and transition to organic farming.[35] Funded by the USDA, AMA is available in Maryland and Delaware (but not Virginia), where Federal Crop Insurance participation is historically low.[35] CSP and EQIP provide technical and financial assistance for improvements and activities related to conservation.[36,37] These programs have been instrumental in promoting environmental stewardship in agriculture. However, there are challenges regarding the accessibility of CSP and EQIP funding. Both programs are highly competitive and even with 60% of EQIP's annual funding set aside for conservation activities on livestock operations, it is estimated that 10% of total EQIP funding is allocated towards practices characteristic of large-scale animal operations.[36–39] As a result, only a limited number of farms are able to implement conservation practices, and the EQIP support for CAFO practices reduces the funding available for sustainable improvements on small and mid-sized farms.

The FCS offers a variety of financial products aimed at meeting the needs of agricultural producers, farmer-owned cooperatives, and other agribusinesses.[40] The system offers assistance to farmers through loans to purchase land, buy equipment, and build facilities; specialized leasing programs for farmers to lease equipment, facilities, and rolling stock; crop insurance, and credit life insurance; and cash management services and other financially related services.[40]

The EQIP Organic Initiative, OREI, OCCSP, and ORG programs all apply to the organic sector of sustainable agriculture. All four programs offer assistance to farmers before, during and after transitioning from conventional to organic agriculture practices through research, education,

cost-sharing and/or direct funding.[41–44] ORG, while limited to higher education institutions, is aimed at improving the competitiveness of organic livestock and crop producers by funding projects that integrate research, education, and extension activities.[44] However, similarly to CSP and EQIP, funding availability is not commensurate with the program's demand, as less than 50% of the applications are approved by most programs due to limited funding.[42,44] In addition, these programs are specific to organic agriculture, meaning producers must adhere to organic certification standards. While these standards can be beneficial to sustainability efforts, organic agriculture is not the only method for implementing sustainable agricultural practices, as outlined above.

Finally, SARE and VAPG can be helpful for transitioning farmers.[45,46] Like the organic programs, SARE advances agricultural sustainability through research and education.[45] SARE funding, however, is not limited to organic production and funds projects including pastured livestock and rotational grazing, sustainable communities and integrated local and regional food systems, among others.[45] VAPG provides funding to farmers to encourage the integration of value-added products into their operations through the generation of new commodities and with the development or expansion of value-added product marketing, which often leads to increased producer income.[46,47] Value-added practices increase a product's value by being produced or marketed for a special characteristic (i.e. grass-fed, organic, etc.); being produced or marketed as locally-produced; connecting farmers with local and regional supply systems; and more.[47] These federal programs offer the most support for farmers looking for financial assistance before, during and after transitioning to more sustainable agriculture practices.

*State Level Polices and Programs*
(Appendix B)

The following policies and programs at the state level can impact farmers with financial constraints before, during and after the transition from conventional to sustainable practices:

- Agriculture Cost-Share Programs
- State Loan and Grant Programs
- States' Right to Farm Laws

Agriculture Cost-share Programs can be beneficial in assisting farmers through the transition process. These programs generally offer applicants a specified percentage of funding to cover the costs of agriculture management practices.[48] In addition, some programs specifically cover conservation measures. One example is the Maryland Agricultural Water Quality Cost-Share (MACS) Program.[49] While the program does not specifically pertain to transitioning farmers, it does support conservation efforts, such as animal waste management systems, which can be utilized by farmers aiming to implement more sustainable practices.[49]

State loan and grant programs can be a crucial source of funding for farmers looking to transition from conventional to more sustainable farming. While they vary in funding availability based on the loan or grant, the state of issuance and the fund's intended use, such avenues of support are important considerations for transitioning farmers. Examples of state loan and grant programs include:

- Delaware:
    - Delaware division of small business development and tourism
- Maryland:
    - Maryland Resource-Based Industry Financing Fund Loan
    - Rural Business Equipment and Working Capital Fund Loan

    - Maryland Agricultural and Resource-based Industry Development Corporation (MARBIDCO)
    - Maryland Value Added Producer Grant- Capital Assets Option
    - Maryland Value Added Producer Grant- USDA Option
- Virginia:
    - Virginia Small Business Financing Authority Cash Collateral Program
    - Virginia Small Business Financing Authority Loan Guarantee Program
    - Virginia Small Business Financing Authority Economic Development Loan Fund
    - Virginia Small Business Financing Authority Environmental Compliance Assistance Fund
    - Virginia Small Business Financing Authority Small Business Microloan Program
    - Virginia Tobacco Indemnification and Community Revitalization Commission

Another important consideration for transitioning farmers are states' Right to Farm laws. All 50 states have Right to Farm laws that seek to protect farmers and ranchers from nuisance lawsuits but can also be considered a type of preemption law, which are legislative policies at either the state or federal level that override local jurisdiction.[50,51] Common elements of Right to Farm laws are: prohibiting local government from passing stricter laws on agriculture than the laws of the state; restricting nuisance suits if the plaintiff moved to the area of an already established agricultural operation; restricting nuisance suits if the farm operation engages in generally accepted agricultural practices that do not violate any laws; restricting nuisance suits if the farm operation is located in an agricultural zone; ordering the plaintiff to pay attorney's fees of the defendant if they (the plaintiff) lose the case.[51] While these laws are intended to protect agriculture operations and their production, they often favor large-scale operations.[52] This means

that farmers focused on environmental stewardship can be at a disadvantage because they are forced to compete against larger operations that are not held accountable for poor conservation efforts.

Finally, this research identified that policies and programs at the state level pertaining to sustainable agriculture and transition assistance are somewhat limited. While this implies that there are few state-level barriers for transitioning farmers, it also means there is little support. One interviewee feels that "state and county regulations are prohibitive for small agricultural practices making it nearly impossible to flourish". The lack of funding, research, and education support from local and state governments can inhibit farmers looking to transition to more sustainable agriculture practices.

*Barrier 2: Access to Information and Services*

Another barrier often faced by farmers looking to transition to more sustainable farming is a lack of information regarding the transition process. Sustainable agriculture regulations are different from those pertaining to conventional farming.[53] Therefore, transitioning to sustainable agriculture can be a daunting undertaking, especially when the farm serves as the primary source of income. Another area of confusion for transitioning farmers is understanding the various marketing options. For some farmers, it can be difficult to find a market for organic meat products. For example, many cattle and calf farmers who participate in the USDA's Certified Organic Production Survey reported selling their animals to conventional markets despite being raised certified organic.[18] Likewise, it can be challenging for transitioning farmers to source organic inputs. Organic suppliers of things such as feed and fertilizer may be much farther away or harder to find than conventional suppliers.[18] Therefore, it is vital that farmers looking to

transition to more sustainable agricultural practices have guidance and access to information throughout the transition process.

The following resources can be helpful to farmers seeking information before, during and after the transition from conventional to sustainable practices:

*National Informational Resources*
(Appendix C)

- USDA:
    - National Institute of Food and Agriculture (NIFA)
    - National Agricultural Library (NAL)
- Conservation District (CD)
- Farm Service Agency (FSA)
- Natural Resources Conservation Service (NRCS)
- Rural Development (RD)
- National Non-profit Organizations:
    - National Sustainable Agriculture Information Service (ATTRA)
    - National Sustainable Agriculture Coalition (NSAC)
    - National Chicken Council
    - American Farm Bureau Federation
    - National Farmers Union

*Regional Informational Resources*
(Appendix D)

- State Extension Offices- University of Delaware Cooperative Extension, University of Maryland Extension and Virginia Cooperative Extension

- State Offices and Service Center Locations of CD, FSA, NRCS, and RD[iii]
- State Departments of Agriculture
- Regional Non-profit Organizations:
    - Delaware Organic Food and Farming Association (DOFFA)
    - Future Harvest Chesapeake Alliance for Sustainable Agriculture (CASA) (Maryland)
    - Virginia Association for Biological Farming (VABF)
    - Pennsylvania Association for Sustainable Agriculture (PASA)
    - Chesapeake Bay Foundation

*Barrier 3: Indebtedness to Existing Contracts*

While production contracts can be beneficial to growers by providing set income and reducing risks associated with broiler production, these contracts can also serve as a barrier to farmers considering transitioning to more sustainable practices. According to the Pew Charitable Trusts, 71% of contract growers without off-farm employment live below the poverty line.[33] Growers contracted with large corporations oftentimes lose authority and amass large debts, becoming beholden to the contract. This is because contracts require extensive capital investments and integrators often require significant facility upgrades in order to secure contracts.[54] One interviewee shared their first-hand experience with the strict, and occasionally coercive, parameters they encountered under production contracts:

> I couldn't stand being obligated to the chicken companies. They were so demanding as well as threatening at times. For instance, if you didn't do this or that on your farm, they wouldn't bring you biddies [birds]. I have never taken kindly to threats or someone controlling my income to such a degree! You have to be really strong minded to be successful in the business of industrial farming.

[iii] Several federally funded programs are administered by State Offices. For example, VAPG is administered by the State Offices of Rural Development.

While broiler production contracts typically span short durations, with 20% of contracts only covering the lifespan of a single flock, growers can feel obligated to renew subsequent contracts due to the debt incurred from the initial and continual investments required by the parameters of standard production contracts.[55] Furthermore, growers are reluctant to speak out about the production contract system out of fear of integrator retaliation that could further debt and potential bankruptcy.[56] Thus, growers become indebted to the contract and their relationship with the integrator as it often feels like the only means of meeting contract terms and alleviating their debt. The interviewee continued by stating:

> I believe the integrators have to be held socially accountable in a way that includes taking some financial responsibility for upgrades and improvements. Most of these folks are indebted to the company. It's a very difficult situation to remedy. Often, I was told "don't rock the boat."

The following resources can be helpful to indebted contract growers seeking information about alternative production practices:

*Production Contract Resources*
(Appendix E)

- Contract Poultry Growers Association of the Virginias (CPGA)
- Organization for Competitive Markets (OCM)
- Open Markets Institute (OMI)
- Rural Advancement Foundation International (RAFI)
- Socially Responsible Agricultural Project (SRAP)

CPGA, OCM, OMI, RAFI, and SRAP work to cultivate markets, policies, and communities that promote the viability of farm families, while protecting the environment, community health, and fair treatment of farm workers.[57–61] Therefore, these five organizations can serve as vital resources to indebted contract growers by providing valuable information

about the terms of agricultural contracts, such as RAFI's guide entitled "Understanding Contract Agriculture", and potential options for farmers looking to pursue different practices.

Transitioning growers should note, however, that conflicts may arise with poultry companies even after abandoning the production contract system, as one interviewee experienced:

> Early on in the [free-range] business, we were harassed by a large chicken company. It made complaints to the State via the DOA [Department of Agriculture] and head veterinarian. We went through about 9 months of oversight and hired an attorney to get them off of our back. We were being accused of practicing poor biosecurity and that we were a threat to the entire Shore's industrial farming practices because of that. It was ridiculous. They actually threatened to "bankrupt" us.

This statement attests to the value of having resources and organizations to help farmers throughout the transition process, even after they become independent producers.

## DISCUSSION AND RECOMMENDATIONS

While the research identified several good policies, programs and resources that facilitate transitions to sustainable animal agriculture, the evidence also suggests there is room for growth. The following recommendations present improvements to existing services and developments of new opportunities for the advancement of sustainable animal agriculture on the Delmarva Peninsula.

### *Expand funding, programs, and research*

One recurring issue identified within many of the federal programs is that of chronic underfunding. Since funds are limited, many applicants are denied financing. For example, only 38% of ORG applicants receive funding, and only 24% of OREI applications are approved annually.[42,44] In addition, CSP could be eliminated altogether in the 2018 Farm Bill, terminating the funding for conservation activities on over 70 million acres of land across the country.[62] Agricultural grant programs at the state level also experience funding shortages. Therefore, it is recommended to increase funding for both federal and state programs in order to promote sustainable agriculture transitions and better support farmers seeking to improve their environmental stewardship practices. These programs and the practices they support not only improve environmental health but the health and happiness of farmers too, as one interviewee states:

> We quit industrial farming altogether. We have a life again. I don't worry about our health like I did, particularly our lungs. We have freedom. We enjoy each other's company again instead of all the tension. We have met some great people at the farmer markets. We have made some great friends.

Funding expansion should also be extended to the Beginning Farmers and Ranchers and the Outreach and Assistance for Socially Disadvantaged Farmers and Ranchers and Veteran Farmers and Ranchers (also known as 2501) programs. These programs provide training,

technical assistance, and/or financial aid for beginning and disadvantaged agricultural operators.[63,64] Given the rise in age and decline in numbers of the American agricultural demographic, expanding the funding of these programs would further support populations who are critical to the future of agriculture in the United States.[65] Furthermore, these programs provide the opportunity to initiate sustainable agriculture practices from the inception of operations within beginning and disadvantaged farming communities, rather than promoting conventional methodologies that would require time, energy, and capital to transition at a later date.

In addition, sustainable animal agriculture would benefit from narrowing the scope of federal conservation programs. All of the programs outlined above apply to both crop and animal agriculture practices. Both sectors would be better served by an allocation of funds to each specific agriculture category. NSAC has proposed the introduction of a Sustainable Livestock marker bill to remedy the lack of policy, financial investment and technical support to better support domestic animal producers.[66] The aims of the bill include:

- expanding support for sustainable livestock, dairy, and poultry production.
- improving management practices, increasing economic and market opportunities, and fostering a transition to more humane and sustainable systems.
- mobilizing sustainable farmers and ranchers and producer associations, the food industry sourcing from these farms, environmentalists and climate activists, and the consumer, public health, and animal welfare communities around the campaign.

Another area that requires expansion is research around the sustainability of food animal production practices. While sustainable agriculture research continues to expand and improve,

there is still much to be learned around the best practices regarding the sustainability of the inputs and outputs associated with large-scale animal agriculture operations. Research expansion should include rotational grazing and pastured or free-range livestock and poultry, which are production systems characterized by animals raised primarily on pasture, as well as other areas of sustainable animal agriculture.

As noted previously, animal agriculture intensification developed as a way to produce more animals in less space, while using fewer resources. Raising animals on pasture is often touted as a more sustainable alternative to industrial animal agriculture.[67] There is, however, a gap in the literature on the feasibility of implementing such practices on a large-scale and the implications of this potential limitation for the food supply and for food prices. The term 'sustainable intensification' has been coined in reference to agricultural practices that enable large-scale food production with less environmental impact and without incurring further land use change.[68] The potential for and feasibility of 'sustainable intensification' requires further research to assess the production potential and to determine the extent to which 'sustainable intensification' can reduce negative environmental impacts and support social and economic well-being.

Despite these potential limitations, some interviewees have had great success with pasture-based models and shared their experiences and the beneficial outcomes sustained:

- ◇ Rotational grazing has improved our soils, increased drought resistance, minimized parasite pressure, *and* every year we buy less in feed -- because the farm produces the feed we need!
- ◇ Allowing animals to freely roam and practice normal behaviors makes for a more contented animal leading to continued production.
- ◇ [Free-range is] much more work than industrial confinement chickens but much more satisfying for the animals and farmer.

*Improve program approval standards and accountability within agriculture*

EQIP's funding approval standards should be improved in order to better serve conservation efforts. Every year, industrial agriculture operation applications are approved within many of the federal conservation programs. For example, in 2016, 11% of EQIP funding was awarded to structural practices characteristic of CAFOs such as waste lagoons, animal mortality facilities, and waste treatment facilities.[39] By allocating already limited funding to these large-scale operations, there is less funding available for small-scale, independent farmers to implement conservation practices. This is a sentiment shared by the farmers themselves, as one interviewee proclaimed:

> Government programs and subsides prop up industrial farming and leave little to no assistance to sustainable farming. (I) would love to see a level playing field between big ag and small farms. Either share equally the tax dollars or take all away.

These types of statements emphasize the importance of federal support being distributed in an equitable and need-based manner.

In addition, there needs to be greater accountability within animal agriculture. State-level Right to Farm laws allow major polluters to avoid culpability for farming practices that pose environmental and public health risks,[52] as well as the responsibilities and costs that come along with effective environmental stewardship, putting sustainable farmers at a disadvantage. Instead of protecting bad actors at the expense of the public's health and environmentally responsible farmers, agricultural policies should hold all animal agriculture operations accountable for environmental and/or public health impacts associated with their farming practices.

*Fair and competitive market access*

While farmers need proper funding, programs and resources to facilitate transitioning to more sustainable animal agriculture practices, it is also absolutely necessary to provide them

with the infrastructure required to support their success. In order to operate successfully, small and mid-sized independent animal producers need access to services throughout the production chain.

One critical component of market access in animal agriculture is local and regional processing capacity. Many of these facilities have been incorporated into vertically integrated systems that are controlled by and serve only a single integrator.[69] In addition, the four largest poultry processors control 51% of the broiler market in the United State and 52% of growers have only one or two processors available to them in their state or region.[69] As a result, very few processing facilities exist outside of the vertically integrated system, therefore limiting processing options for small and mid-sized independent farmers.[69] The restrictive nature of the animal agriculture marketplace was confirmed by one interviewee, who stated, "[the] domination of industrial agriculture in the [Delmarva] region leaves independent farmers with little to no local resources for their enterprise."

A secondary challenge related to the limited processing capabilities of independent producers is their access to fair and competitive marketing. Even if small and mid-sized farmers are able to access a processor, they often encounter challenges in getting their product to market. Since integrators control a substantial share of the market, small and mid-sized independent farmers face difficulties in the marketing and selling of their products.[70] This structure can produce an anticompetitive marketplace and have costly implications for these independent animal agriculture operations.[70] Therefore, all animal producers should be guaranteed reliable access to processing facilities and the capability to market and sell their products fairly and at a competitive price by improving access to and funding for programs that support direct to consumer marketing strategies.[71]

There are several policy options available to address these constraints including the Processing Revival and Intrastate Meat Exemption (PRIME) Act[iv], the Packers and Stockyards Act (PSA) by the Grain Inspection, Packers and Stockyards Administration (GIPSA) and the Farmer Fair Practices Rules[v] associated with the PSA.

The PRIME Act, introduced for the second time in 2017, would secure greater market access for sustainable food animal producers by allowing states to pass laws regarding custom-processed meat.[72,73] Under current law, meat processed in a custom facility can only be sold to the individual who owns the animal.[72,73] This greatly inhibits small and mid-sized animal producers access to processing facilities and local and regional customer markets.

GIPSA is the USDA agency that facilitates the marketing of livestock, poultry, meat, and related agricultural products and promotes fair and competitive trading practices, which are beneficial to American consumers and agriculture.[74] With better implementation and stricter enforcement of the PSA, GIPSA can prevent actions such as "unfair and deceptive trade practices, or anticompetitive behavior, such as collusion between dealers and packers, or agreements between dealers to alternate bids or refrain from competing on livestock at auctions," all of which can be vastly prohibitive towards sustainable animal producers' market access.[75] One option for recourse is to reintroduce and finalize the Farmer Fair Practices Rules under the PSA. The interim final rule and proposed rules, introduced in 2016, would protect contract farmers from retaliation by poultry companies, ensure that farmers understand their contracts, and replace the tournament system with a fair and transparent model of compensation.[69,76–78] In the fall of 2017, however, the Scope of Sections 202(a) and (b) of the Packers and Stockyards

[iv] H.R. 2657 and S.1232

[v] Interim final rule on Scope of Sections 202(a) and (b) of the Packers and Stockyard Act 81 FR 92566; proposed rule on Poultry Grower Ranking System 81 FR 92723; and proposed rule Unfair Practices and Undue Preferences in violations of the Packers and Stockyards Act 81 FR 92703.

Act (81 FR 92566) and the Unfair Practices and Undue Preferences in Violation of the Packers and Stockyards Act (81 FR 92703) were discarded by the Trump Administration.[79]

Instituting the PRIME Act, improving GIPSA's enforcement, and finalizing the Farmer Fair Practices Rules would support more competitive and fair access to livestock and poultry markets for sustainable food animal producers and those looking to transition to sustainable animal agriculture.

In addition to the recommendations outlined above, the interviewees offered advice for farmers looking to transition from conventional to more sustainable operations:

- ◇ The first thing is this: transition incrementally. When we started, our farm had been conventional no-till. No-till sounds nice, but when it's conventional it means a ton of pesticides and herbicides. The transition has been a struggle. Start with a small plot, possibly where you want an orchard or your market garden. Plant cover crops and use bio-stimulants like compost teas, enlivened water, biodynamic preparations -- whatever you can to improve that plot.
- ◇ Rotational grazing. Now that everything's as green as it can be, practice rotational grazing. Move the animals often and do NOT let them "overgraze" -- if you do that you are going to ruin the soil and your farm. Keep those girls moving!
- ◇ Utilize existing farm resources (tractor, buildings, land).
- ◇ Be proactive in marketing the product.
- ◇ You have to be a risk taker. It's hard to sell the product until you have the product. Thus, you must create a detailed business plan for the marketing of said product to present to the bank. Nowadays, I believe banks do not shy away from these business ventures like they did 7-10 years previously. The plan has to make economic sense and fill a need or niche market.
- ◇ Know your limitations as there are many barriers to operating a successful farm enterprise (regulations, permitting, available local resources).
- ◇ **Patience** above all else. Talk to the old timers in your area. They know the land and respond very well to questions. Use the wisdom of old farmers before they're all gone. Take what you can from them and incorporate it into your regenerative practices -- just maybe skip the Lead Arsenate!

## CONCLUSION

Federal and state policies, programs, and resources can promote greater agricultural stewardship and ensure a healthy future for the Delmarva Peninsula's residents and environment by supporting poultry farmers before, during, and after the transition to sustainable animal agriculture practices. This report reviewed animal agriculture production practices on the Delmarva Peninsula, identified benefits and challenges of these common practices, and explored alternative practices that present opportunities to improve the sustainability of animal agriculture and reduce environmental and public health impacts. Current policies were analyzed to identify incentives, barriers, gaps and opportunities in supporting these sustainable alternatives.

This review and analysis suggest there is room for improvement regarding the policies, programs, and resources aimed at supporting sustainable animal agriculture at both the federal and state levels. The policies, programs, and resources examined in this report can greatly influence transitioning farmers; however, these findings emphasize the lack of financial assistance and information available to support this population. With the expansion of funding, the advancement of federal and state agricultural programs and research, the improvement of program approval standards, increased accountability within the agricultural sector, and the support of fair and competitive market access in animal agriculture, the federal and state governments, agencies, and organizations can better serve transitioning farmers on the Delmarva Peninsula and other agricultural areas, while strengthening environmental sustainability throughout the nation's food system.

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# APPENDICES

## *Appendix A*

| FEDERAL LEVEL POLICIES AND PROGRAMS | | |
|---|---|---|
| Policy/Program | Description | Some Limitations |
| Agricultural Management Assistance | AMA funds conservation projects such as production diversification, resource conservation, integrated pest management and transition to organic farming. | Available in Maryland and Delaware but not Virginia. |
| Conservation Stewardship Program (CSP) | CSP provide technical and financial assistance for improvements and activities related to conservation. | Highly Competitive. |
| Environmental Quality Incentives Program (EQIP) | EQIP provide technical and financial assistance for improvements and activities related to conservation. | Highly Competitive and some funding is awarded to concentrated animal feeding operations (CAFOs) every year. |
| Farm Credit System | The system offers assistance to farmers through loans to purchase land, buy equipment, build facilities; specialized leasing programs for farmers to lease equipment, facilities, and rolling stock; crop insurance, and credit life insurance; and cash management services and other financially related services. | |
| EQIP Organic Initiative | The EQIP Organic Initiative, OREI, OCCSP, and ORG programs all apply to the organic sector of sustainable agriculture. All four programs offer assistance to farmers before, during and after transitioning from conventional to organic agriculture practices through research, education, cost-sharing and/or direct funding. | For most programs, less than 50% of application are approved due to limited funding. These programs are specific to organic agriculture, meaning producers must adhere to organic certification. ORG is limited to higher education institutions. |
| Organic Agriculture Research and Extension Initiative (OREI) | | |
| Organic Certification Cost Share Program (OCCSP) | | |
| Organic Transitions Program (ORG) | | |
| Sustainable Agriculture Research and Extension (SARE) | SARE advances agricultural sustainability through research and education. | |
| Value-Added Producer Grant Program (VAPG) | VAPG provides funding to farmers to encourage the integration of value-added products into their operations through the generation of new commodities and with the development or expansion of value-added product marketing, which often leads to increased producer income. | |

## *Appendix B*

| STATE LEVEL POLICIES AND PROGRAMS | | |
|---|---|---|
| Policy/Program | Description | Examples |
| Agriculture Cost-Share Programs | Provide a specified percentage of funding to cover the costs of agriculture management practices. Some programs cover conservation measures such as erosion prevention and animal waste management systems. | Maryland Agricultural Water Quality Cost-Share (MACS) Program: supports conservation efforts, such as animal waste management systems, which can be utilized by farmers aiming to implement more sustainable practices |
| State Loan and Grant Programs | While funding availability can vary based on the loan or grant, the state of issuance and the fund's intended use, such avenues of support are important considerations for transitioning farmers. | Delaware: Delaware division of small business development and tourism; Maryland: MD Agricultural and Resource-based Industry Development Corporation (MARBIDCO); Virginia: Virginia Small Business Financing Authority. |
| States' Right-to-Farm Laws | All 50 states have Right to Farm laws that seek to protect farmers and ranchers from nuisance lawsuits but can also be considered a type of preemption law, which are legislative policies at either the state or federal level that override local jurisdiction. | Common elements of Right to Farm laws are: prohibiting local government from passing stricter laws on agriculture than the laws of the state; restricting nuisance suits if the plaintiff moved to the area of an already established agricultural operation; restricting nuisance suits if the farm operation engages in generally accepted agricultural practices that do not violate any laws; restricting nuisance suits if the farm operation is located in an agricultural zone; ordering the plaintiff to pay attorney's fees of the defendant if they (the plaintiff) lose the case. |

*Appendix C*

**NATIONAL INFORMATIONAL RESOURCES**

- United States Department of Agriculture (USDA):
  - National Institute of Food and Agriculture (NIFA)
  - National Agricultural Library (NAL)
- Conservation District (CD)
- Farm Service Agency (FSA)
- Natural Resources Conservation Service (NRCS)
- Rural Development (RD)
- National Non-profit Organizations:
  - National Sustainable Agriculture Information Service (ATTRA)
  - National Sustainable Agriculture Coalition (NSAC)
  - National Chicken Council
  - American Farm Bureau Federation
  - National Farmers Union

*Appendix D*

**REGIONAL INFORMATIONAL RESOURCES**

- State Extension Offices- University of Delaware Cooperative Extension, University of Maryland Extension and Virginia Cooperative Extension
- State Offices and Service Center Locations of CD, FSA, NRCS, and RD
- State Departments of Agriculture
- Regional Non-profit Organizations:
  - Delaware Organic Food and Farming Association (DOFFA)
  - Future Harvest Chesapeake Alliance for Sustainable Agriculture (CASA) (Maryland)
  - Virginia Association for Biological Farming (VABF)
  - Pennsylvania Association for Sustainable Agriculture (PASA)
  - Chesapeake Bay Foundation

*Appendix E*

| PRODUCTION CONTRACT RESOURCES | |
|---|---|
| Resource | Description |
| Contract Poultry Growers Association of the Virginias (CPGA) | CPGA, OCM, OMI, RAFI, and SRAP work to cultivate markets, policies, and communities that promote the viability of farm families, while protecting the environment, community health, and fair treatment of farm workers. |
| Organization for Competitive Markets (OCM) | |
| Open Markets Institute (OMI) | |
| Rural Advancement Foundation International (RAFI) | |
| Socially Responsible Agricultural Project (SRAP) | |