

The 2012 Census of Agriculture: Sustainability Practices on Maryland's Farms

Introduction

The 2012 Census of Agriculture contains information on farm practices that are directly or indirectly related to sustainability. While the concept of sustainability is broad, in agricultural terms it can be thought of as “agri-food systems that are economically viable, meet society's need for safe and nutritious foods, while conserving natural resources and the quality of the environment for future generations.”¹ In economic terms, sustainable practices minimize or eliminate “negative externalities,” or activities that burden the general population with the costs of an activity while the benefits only accrue to the individual. As this definition implies, the concept of sustainability has three major “interdependent and mutually reinforcing pillars”² – economic and environmental.

Economic Sustainability

The 2012 Agricultural Census contains multiple indicators of economic sustainability for farms and farmland. Economically sustainable practices allow farms to produce goods profitably enough to ensure that they remain viable businesses that will be able to continue to exist into the future. Because of the interdependent nature of sustainable practices, the economic sustainability indicators below may also have environmental aspects.

Produced and Sold Value-Added Commodities

The 2012 Agricultural Census tracks farms that produce and sell their own value-added commodities. The USDA defines value-added as “the incremental value that is realized by the producer from an agricultural commodity or product as the result of a change in its physical state, differentiated production or marketing, as demonstrated in a business plan, or product segregation.”³ Examples of value-added commodities include “milling wheat into flour, slaughtering livestock or poultry, making strawberries into jam, the marketing of organic products, an identity preserved marketing system, wind or hydro power produced on land that is farmed and collecting and converting methane from animal waste to generate energy.”⁴

Supporting the expansion of farm business into value-added commodities is the focus of legislation in 2002 that established a federal Value-Added Producer Grants Program (USDA VAPG), and Maryland followed soon after with its own Maryland Value Added Producer Grant Program (MVAPG) through the quasi-public Maryland Agricultural & Resource-Based Industry Development Corporation (MARBIDCO). This was in

¹ B. Smit, Concepts of Sustainability, Agro-Ecosystem Health and Applications to Agricultural Production, University of Guelph, Guelph, Ontario, Canada, <http://www.ilri.org/InfoServ/Webpub/fulldocs/Aesh/Concepts.htm>

² United Nations. 2005 World Summit Outcome. <http://www.who.int/hiv/universalaccess2010/worldsummit.pdf>

³ 7 CFR PART 4284 – GRANTS, Subpart A – General Requirements for Cooperative Services Grant Programs, Section 4284.3 – Definitions. <http://www.rd.usda.gov/files/4284k.pdf>

⁴ Ibid.

response to dwindling farm revenues across the U.S. and a shift of agri-business sector income from farms to processors. According to the Congressional Research Service, “from 1910 to 1990, farmers' share of the overall GDP of the food and fiber system fell from 21% to 5%, while the share contributed by the agricultural input and distribution subsectors rose from 13% to 30%.”⁵

The trend towards individual farms creating their own value-added commodities is a shift from past beliefs that the best way to grow farm revenues is to increase farm size, a strategy whose effectiveness has been inconclusive.⁶ While the production of value-added commodities is not a panacea and can introduce additional risk into farm operations by “entrench[ing] the producer in the supply chain” rather than reducing risks through diversification,⁷ when done properly it can significantly increase farm revenues.⁸

In 2012, 5.4 percent (667 out of 12,256 farms) in Maryland were producing value-added commodities, a slight increase from 5.3 percent in 2007. Nationally in 2012, 4.5 percent of the farms produced value-added commodities, this ranked Maryland 19th out of the 50 states in percentage of farms, and 40th in number of farms. Percentage-wise, Vermont is ranked first at 13.8 percent of all farms, numerically, Texas had the highest number (11,544) of farms producing value-added commodities almost three times as many as second-ranked Missouri (4,281) (See [Table 1](#)).

Within Maryland, the Southern Maryland Region had the highest percentage of farms engaged in value-added production (7.7%, or 99 out of 1,238 farms), while the Baltimore Metro Region had the largest number (185 out of 2,988, or 6.2%). By jurisdiction, St. Mary's County had the highest percentage of farms involved in value-added production (10.0%, or 63 out of 632), while Frederick County had the largest number (91 out of 1,308, or 7.0%) (See [Table 2](#)).

Produced Renewable Energy

While the USDA considers on-farm energy generation to be a part of value-added production, the 2012 Agricultural Census tracks this statistic separately. In 2012, 3.4 percent of Maryland's farms (416 out of 12,256) generated renewable energy, as compared to 2.7 percent nationally. Compared to other states, Maryland ranked 22nd in percentage of farms generating renewable energy and 37th in the number of farms generating renewable energy. Hawaii had the highest, with 18.4 percent of all farms generating renewable energy, followed by Alaska with 8.7 percent. California had the largest number of farms generating energy (5,845), followed by Texas (4,824 farms) (See [Table 1](#)).

Marketed Products through Community Supported Agriculture (CSA)

⁵ Congressional Research Service. October 2002. “Value-Added Agricultural Enterprises in Rural Development Strategies,” <http://hdl.handle.net/10207/1523>

⁶ Vincent Amanor-Boadu, PhD. “Preparing for Agricultural Value-Adding Business Initiative: First Things First”

⁷ Ibid.

⁸ “[Oregon State University] economists studying 2005 data found that value added to \$4.1 billion in crop and livestock sales (farmgate sales) generated another \$2.1 billion in first-handler economic activity, a 53 percent increase over the value of farmgate sales alone.”

http://extension.oregonstate.edu/news/story.php?S_No=478&storyType=news

Similar to creating value-added commodities, participating in Community Supported Agriculture (CSA) allows more of the profits from farm products to accrue directly to farms. According to the USDA, “CSA consists of a community of individuals who pledge support to a farm operation so that the farmland becomes, either legally or spiritually, the community's farm, with the growers and consumers providing mutual support and sharing the risks and benefits of food production . . . By direct sales to community members, who have provided the farmer with working capital in advance, growers receive better prices for their crops, gain some financial security, and are relieved of much of the burden of marketing.”⁹ Many CSA farms “typically use organic or biodynamic farming methods, and strive to provide fresh, high-quality foods.”¹⁰ More so than the other practices listed here, CSA cuts across all three aspects of sustainability: Economic (through the mitigation of financial risk); environmental (by supporting local agriculture and organic practices); and social/cultural (by creating stronger community ties).

In 2012, 1.0 percent (119 out of 12,256 farms) in Maryland were marketing products through CSA, a slight decline from 1.3 percent in 2007. Nationally in 2012, only 0.6 percent of farms marketed products through CSA, Maryland ranked 15th in the percentage and 38th in the number of farms participating in Community Supported Agriculture. First was Massachusetts, with 5.6 percent of all farms marketing through CSA, followed by Alaska with 5.5 percent and the five remaining New England states holding the third through seventh positions, and Hawaii ranking 8th at 2.0 percent. (See [Table 1](#)).

Within Maryland, the Baltimore and Washington Suburban Regions had the highest percentage of farms participating in CSA at 1.6 percent, but the Baltimore Region had the largest number of farms (49 farms) compared to the Washington Suburban Region (36 farms). By jurisdiction, Baltimore County had the highest number and percentage of farms involved in CSA (22 out of 640 or 3.4%), followed by Frederick County (16 out of 1,308, or 1.2%) (See [Table 2](#)).

Sold Products Directly to Consumers for Human Consumption¹¹

Over the last 100 years, household expenditures on prepared food have gone from less than 10 percent to over 50 percent of all food expenditures, and total food expenditures as a percentage of total GDP have decreased. This has put pressure on farm profits, making it more difficult for farms to remain profitable and shows that the closer farmers are to the consumer, the higher share of the consumer’s dollar they will capture.¹² One way to do this is to sell farm products directly to the consumer and to capture the profits that would normally go to distributors or processors.

Farm products sold “directly to individuals for human consumption” are sold through “roadside stands, farmers’ markets, pick-your-own sites,” and similar venues.¹³ Only edible food items are counted, be they plant or animal products. Unlike CSA, this variable does not cover sales to farm members or subscribers. Like CSA and value-added activities, it is an attempt to reduce the distance between farms and consumers.

⁹ DeMuth, 1993 “Defining Community Supported Agriculture,” <http://www.nal.usda.gov/afsic/pubs/csa/csadef.shtml>

¹⁰ Ibid.

¹¹ Referred to as “value of agricultural products sold directly to individuals for human consumption” in the 2012 Agricultural Census.

¹² Vincent Amanor-Boadu, PhD. “Preparing for Agricultural Value-Adding Business Initiative: First Things First”

¹³ USDA definition, 2012 Agricultural Census.

Nationwide in 2012, 6.9 percent of all farms sold products for human consumption directly to consumers, as compared to 6.2 percent in 2007. In Maryland, 10.4 percent of farms (1,276 of 12,256) had direct sales, a slight decrease of 0.6 percent over 2007. In 2012, Maryland ranked 16th in the percentage of farms involved in direct sales. Alaska ranked first with 31.6 percent of all farms selling directly to consumers followed by the six New England states holding the second through seventh positions, all having percentages of farms selling directly to consumers above 20 percent. California had the largest number of farms (8,588 farms, or 11.0%) and Texas had the second largest number (7,954, or 3.2%) (See [Table 3](#)).

Within Maryland, the Baltimore Metro Region had the highest number of farms that sold products directly to consumers in 2012 (385 or 12.3%), while the Southern Maryland Region had the largest percentage (13.5%, or 173 farms). By jurisdiction, Frederick County had the largest number (158 farms), followed by Carroll county with (145 farms) selling directly to consumers, while Prince George's county had the highest percentage with (17.1%), followed by Baltimore County with (17.0%) (See [Table 4](#)).

In 2012 the value of retail sales to individual consumers was a small percentage of total farm sales. Nationwide, only 0.4 percent of all farm sales by value were made directly to consumers a slight increase from 0.3 percent in 2007. In Maryland, that percentage was 1.2 percent in both 2012 and 2007. On average, each of the farms in Maryland selling directly to consumers sold \$21,973 worth of goods in 2012, up from \$18,683 in 2007, a \$3,291 or 17.6 percent increase (See [Table 3](#)).

Within Maryland, the Washington Suburban Region had the largest amount of sales (\$8.1 million out of \$221.5 million, or 3.7%), While the Southern Maryland Region had the highest percentage of sales of products directly to consumers in 2012 (4.5%, or \$1.6 million out of \$35.8 million in sales), By jurisdiction, Montgomery County had both the highest dollar amount and percentage of sales of goods sold directly to consumers (9.5%, or \$3.9 million out of \$41.1 million in sales). (See [Table 4](#)).

Environmental Sustainability

Environmentally sustainable practices help farmers to protect the future viability of farmland and its surrounding ecosystems. An important component of environmentally sustainable farmland is the protection of soil from erosion, which has traditionally been accomplished through conservation farming methods, which have been joined more and more by organic farming methods, both of which are effective in stopping soil erosion.

Used Organic Farming Methods

Similar to conservation farming methods, organic farming methods can help preserve topsoil and control the runoff of fertilizers and pesticides. In addition, organic methods can protect soil from compaction, preserving its ability to absorb rainfall and help to prevent flooding. Organic produce can also add to the value of products sold by farm operations, increasing profits, as well as reducing costs for artificial fertilizer and pesticides. However, organics can also have lower yields depending on the type of crop grown, and organic methods are not a panacea for protecting environmental quality, as they can still rely on pesticide and natural fertilizer applications than can negatively affect the environment. To qualify for organic production, farmland needs to be farmed without fertilizers or pesticides for a specified period of time. This means that farmers need to utilize organic farming methods for years before they can claim any

market advantage from them, though they will accrue money savings from reducing pesticide and fertilizer use over that time period. Overall, when pursued properly organic farming methods can have a positive environmental impact. Note that organic production and farmland are self-reported by farms and were not verified by the USDA for the Census.

Nationally, 0.7 percent of farms were used for organic production in 2012. In Maryland, 0.7 percent (91 out of 12,256 farms) produced organic products, ranking it 19th in percent and 31st in number of farms nationally. Vermont ranked first in the percentage of farms (7.5%) followed by Maine (6.8%) involved in organic production, while California ranked first in number of farms with 3,008 followed by Wisconsin with 1,180 farms. (See [Table 5](#)).

In the nation, sales from organic farms generated 0.8 percent of the total sales, whereas in Maryland, it was 0.5 percent, which ranked the state 21st among all the states. First in percentage terms for organic sales was Vermont with 7.5 percent, followed by New Hampshire with 6.4 percent. Total organic sales in Maryland generated \$11.8 million, ranking the state 29th. California had the highest organic sales with nearly \$1.4 billion, followed by Washington with \$291 million. (See [Table 5](#)).

Within Maryland, the Washington Suburban Region had the largest number of farms with organic production. By jurisdiction, Frederick County had the largest number of farms (18 out of 1,308, or 1.4%), while Kent County had the largest percentage (2.2%, or 8 out of 367). Kent County also had the largest percentage and highest organic sales among all the counties with 5.4 percent and over \$6.0 million in sales. (See [Table 6](#)).

Land Enrolled in Conservation Programs

The USDA has established multiple programs to protect environmentally sensitive lands. The Agricultural Conservation Easement Program (ACEP)¹⁴ is one such program which provides financial and technical assistance to help conserve agricultural lands and wetlands and their related benefits. Under the Agricultural Land Easements component, NRCS helps Indian tribes, state and local governments and non-governmental organizations protect working agricultural lands and limit non-agricultural uses of the land. Under the Wetlands Reserve Easements component, NRCS helps to restore, protect and enhance enrolled wetlands.

Nationwide, there were 13.2 million acres of farmland (1.4%) in 76,441 farms (3.6%) enrolled in the ACEP program in 2012. In Maryland, 147,413 acres of land (7.3%) in 1,628 farms (13.3%) were enrolled in the ACEP program. This ranked Maryland 2nd out of the 50 states in percent of farms enrolled in the ACEP program and 6th overall in terms of acres enrolled in the ACEP program. New Hampshire had the highest percentage of farms enrolled in this programs in 2012 (15.1%), and Delaware had the highest percentage of acreage in the program. Colorado has the largest amount of acres enrolled (1.4 million), followed by Montana with (1.3 million acres) while Illinois had the largest number of farms (5,768), followed by Georgia (4,966) in the ACEP program. (See [Table 1](#)).

About the Census of Agriculture

¹⁴ <http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/easements/acep/>

The Census of Agriculture is conducted every five years by the National Agricultural Statistics Service (NASS), a branch of the United States Department of Agriculture (USDA). NASS has conducted the Census since 1997. Previously, the Census was conducted by the U.S. Bureau of the Census. In one form or another, there has been an agricultural census conducted periodically in the U.S. since 1840.

According to NASS, the Census of Agriculture “is a complete count of U.S. farms and ranches and the people who operate them. The Census looks at land use and ownership, operator characteristics, production practices, income and expenditures and many other areas.”¹⁵ Data is published for the nation, states, certain territories, and all U.S. counties.

About Principal Operators

According to the 2012 Census of Agriculture, a principal operator is “the person primarily responsible for the on-site, day-to-day operation of the farm or ranch business. This person may be a hired manager or business manager.” More generally, an operator is “a person who operates a farm, either doing the work or making day-to-day decisions about such things as planting, harvesting, feeding, and marketing. The operator may be the owner, a member of the owner’s household, a hired manager, a tenant, a renter, or a sharecropper. If a person rents land to others or has land worked on shares by others, he/she is considered the operator only of the land which is retained for his/her own operation.”

Farm Definitions

The USDA defines a farm as any place from which \$1,000 or more of agricultural products were produced and sold, or normally would have been sold, during the relevant census year.¹⁶ This definition has changed nine times since 1840. From 1959 to 1974, the definition included farm size, with different sales volumes based on size. The current definition was adopted after 1974 and has no farm size requirement. Inflation has changed the definition over time, as the table below shows.

Year	Current Dollars			Constant Dollars (\$2012) *		
	10 Acres+	Less than 10 Acres	All Acres	10 Acres+	Less than 10 Acres	All Acres
2012			\$1,000			\$1,000
2007			\$1,000			\$1,092
2002			\$1,000			\$1,235
1997			\$1,000			\$1,337
1992			\$1,000			\$1,484
1987			\$1,000			\$1,778
1982			\$1,000			\$2,098
1978			\$1,000			\$2,907
1974	\$50	\$250		\$189	\$947	
1969	\$50	\$250		\$249	\$1,243	
1964	\$50	\$250		\$288	\$1,440	

¹⁵ http://www.agcensus.usda.gov/Help/FAQs/General_FAQs/

¹⁶ <http://www.agcensus.usda.gov/Publications/2012/>

1959	\$50	\$250		\$307	\$1,536
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* Dollar values adjusted using the Personal Consumption Expenditure (PCE) index from the Bureau of Economic Analysis' National Income and Products Accounts System (NIPA)

Source: 2002 Census of Agriculture: History, Appendix B