



December 18, 2015

Agency of Agriculture, Food and Markets
116 State Street
Montpelier, Vermont 05620

Sent via electronic mail

Re: Comments on the Draft Required Agricultural Practices

Dear Agency of Agriculture, Food and Markets:

Thank you for the opportunity to submit comments to the Vermont Agency of Agriculture, Food and Markets (AAFM) on the draft Required Agricultural Practices (draft RAPs).

The Vermont Chapter of the Sierra Club, Conservation Law Foundation, Connecticut River Watershed Council, Vermont Natural Resources Council, Vermont Conservation Voters, Lewis Creek Association, and Lake Champlain Committee are member-supported, non-profit organizations that use educational, legal, scientific, and policy tools to protect and enhance water

resources in Vermont. We have played a key role in advocating for strong protections for Vermont's surface and ground waters. However, despite decades of cleanup efforts, many lakes and rivers throughout the state continue to decline due, in part, to agricultural runoff. The draft RAPs are therefore critically important to addressing Vermont's water quality concerns.

We appreciate the time and effort that AAFM staff has committed to this process as well as the outreach, stakeholder meetings, and preliminary comment period that has encouraged widespread public input. While the draft RAPs are an improvement over the Accepted Agricultural Practices, more is required to safeguard Vermont's water resources and ensure consistency with Act 64 and the federal Clean Water Act.

If we are to comply with state and federal water quality laws, Vermont must implement widespread agricultural reform. Vermont's agricultural regulations are tasked with preventing and controlling activities on all farms that may be harmful to water; sustainably improving water quality; and improving water quality sufficiently to attain unprecedented phosphorus reductions within the Lake Champlain watershed – which accounts for half of Vermont's land area. The current draft RAPs are inadequate to fulfill these legal requirements. Embracing a statewide transition to sustainable agricultural systems and providing greater strength and specificity to the RAPs will help drive the necessary changes.

We encourage AAFM to incorporate flexibility into the draft RAPs to account for farms that engage in organic, biodynamic, regenerative, and/or restorative practices, as long as the farms can demonstrate that their practices are achieving the same level of water quality protection as the draft RAPs require. Additionally, we recognize that complying with regulations can be difficult for some farms. While we believe that all farms must be accountable for the pollution they create, just as other businesses or individuals are, we support outreach and incentive systems that will help farms be good stewards of the environment and provide comparable support mechanisms as those proposed for other land use sectors, such as stormwater, transportation, and developed lands.

We offer our comments in three main areas:

1. The draft RAPs must satisfy state and federal legal mandates.
2. The draft RAPs should foster a statewide transition to sustainable agricultural systems.
3. The draft RAPs must provide greater strength and specificity, including science-based justifications that the RAPs are sufficiently stringent to meet water quality goals (section-by-section comments).

1. The draft RAPs must satisfy state and federal legal mandates.

Act 64 recognizes that “Vermont’s surface waters are vital assets that provide the citizens of the State with clean water, recreation, and economic opportunity.” Vermont Act No. 64 (2015) Sec. 1(a)(2). It also recognizes the importance of addressing “all activities harmful to water” and of “sufficiently addressing, improving, and forestalling degradation of water quality in the State in a sustainable and effective manner....” Vermont Act No. 64 (2015) Sec. 1(a)(4), (8). The purpose of Act 64 is to improve water quality; engage *all* agricultural operations to improve water

quality; and to provide the necessary mechanisms, staffing, and financing to improve water quality. Vermont Act No. 64 (2015) Sec. 1(b)(1), (5), (6) (emphasis added); *see also* 6 V.S.A. § 4810a(a).

We understand from the plain language of Act 64 that the draft RAPs must address all farming activities harmful to water quality as well as promote sustainable and effective farming. While costs and time are real considerations in regulating the agriculture sector, Act 64 envisions and sets up a process for ensuring that adequate staffing and financing will be provided. 10 V.S.A. §§ 1387, 1388, 1389. Therefore, financial considerations cannot justify regulations that do not ensure water quality goals are met. The draft RAPs must be revised to apply to all farms and to improve water quality sufficiently to meet the goals and requirements of Act 64.

Further, under the Clean Water Act (CWA), Vermont must ensure that Lake Champlain meets water quality standards. 33 U.S.C. §1313(d)(1)(C). The lake is currently impaired by the nutrient phosphorus, which regularly causes toxic algal blooms, impaired aquatic life, and reduced recreational use.¹ The current load of phosphorus discharged into Lake Champlain from Vermont sources is 630.6 metric tons per year, while the loading capacity, or amount of phosphorus Lake Champlain can receive and still meet its water quality standards, is 417.64 metric tons per year.² The amount of phosphorus discharging into Lake Champlain is therefore 33.7 percent above the legally compliant level.

Lake Champlain's largest source of phosphorus originates from farm fields, which contribute 41 percent of the phosphorus load.³ To meet the loading capacity, the agriculture sector must reduce phosphorus discharges by 51.5 percent.⁴ In some lake segments, these federally mandated reduction requirements reach nearly 60 and even 83 percent.⁵ The draft RAPs therefore need to be sufficiently stringent to attain these reduction requirements.

Vermont's agricultural standards are critical to ensuring clean water and compliance with state and federal law. The targets set by Act 64 as well as the federal Clean Water Act, including cleanup requirements for Lake Champlain, are significant. The draft RAPs cannot simply support minor adjustments to the status quo farming system. Rather, applied RAPs must result in targeted watershed pollution reductions and reflect our commitment to preserve the uses, benefits, and values of our lakes, rivers, and streams. Vermont Act No. 64 (2015) Sec. 1(a)(4).

2. The draft RAPs should embrace a statewide transition to sustainable agricultural systems.

Sustainability rests on the principle of meeting the world's current needs without compromising the ability of future generations to meet their own needs. Congress defines sustainable agriculture as "an integrated system of plant and animal production practices having a site-specific application that will, over the long term: satisfy human food and fiber needs; enhance

¹ Phosphorus TMDLs for Vermont Segments of Lake Champlain ("Draft 2015 TMDL") (Aug. 14, 2015), p.12.

² Draft 2015 TMDL, p. 18 tbl. 3, p. 43 tbl. 7.

³ Draft 2015 TMDL p. 47 fig. 7.

⁴ Draft 2015 TMDL p. 44, tbl. 8.

⁵ Draft 2015 TMDL p. 44 tbl. 8.

environmental quality and the natural resource base upon which the agricultural economy depends; make the most efficient use of nonrenewable resources and on-farm resources and integrate, where appropriate, natural biological cycles and controls; sustain the economic viability of farm operations; and enhance the quality of life for farmers and society as a whole.” 7 U.S.C. § 3101(19).

Sustainable agriculture integrates environmental health, economic profitability, and social justice.⁶ We recognize the range of innovative practices farmers use to improve sustainable farming and encourage AAFM to incorporate flexibility into the RAPs to account for variance across farm fields. However, the fundamental principles of sustainability should be applied consistently to Vermont’s agricultural sector. Appendix A is a list of practices that we believe provide a baseline of options for supporting land and water stewardship as well as satisfying Vermont’s legal commitments. We believe these practices should inform Vermont’s agricultural regulations.

3. The draft RAPs must provide greater strength and specificity, including science-based justifications that the RAPs are sufficiently stringent to meet water quality goals.

The draft RAPs must provide greater strength and specificity as to some requirements, and contain more provisions for education, oversight, and transparency. Please find our detailed comments below:

Introduction and Applicability

- The RAPs should apply to “all farms,” as required by Act 64 and as stated in the Introduction to the Draft RAPs. 6 V.S.A. § 4810a(a) (“the Secretary shall amend by rule the required agricultural practices in order to improve water quality in the State [and] assure practices *on all farms* eliminate adverse impacts to water quality”) (emphasis added); Draft RAPs at 1, Introduction (“In accordance with 6 V.S.A. §§ 4810a and 4810, these regulations are intended to establish statewide requirements designed to improve water quality in the State and to assure practices *on all farms* eliminate adverse impacts to water.”) (emphasis added).
- Similarly, the language in the “Applicability” Section should be revised to reflect Act 64. Act 64 does not limit the applicability of the RAPs to “agricultural activities” (which is not defined in the Act), or to only “animal waste management and disposal, soil amendment applications, and crop production and management.” Draft RAPs at 1, Applicability. Rather, as stated above, the Act applies to “practices on all farms.” 6 V.S.A. § 4810a(a). The list of RAP requirements in Act 64 is not an exclusive list, but a “minimum” set of requirements that must be addressed. 6 V.S.A. § 4810a(a).
- There should not be a presumption that compliance with the RAPs equals no discharge. The proposed presumption is problematic for several reasons. First, Act 64 does not authorize this presumption. Instead, it states that RAPs must assure that farm practices “eliminate” adverse impacts to water quality. 6 V.S.A. § 4810a(a). Second, as a practical matter,

⁶ See Sustainable Agriculture Research & Education (SARE), What Is Sustainable Agriculture?, <http://goo.gl/frcZ7Y>; National Sustainable Agriculture Coalition, What Is Sustainable Ag?, <http://goo.gl/USo7Gu>.

allowing a presumption of “no discharge” does not encourage either farms or AAFM to identify and address discharges that *are* actually occurring. Third, AAFM has not provided any data or assurances that compliance with the RAPs actually *will* mean “no discharge.” Finally, this presumption is inconsistent with Vermont’s Water Pollution Control Law and the federal Clean Water Act because it seeks to apply to “discharge[s] of agricultural pollutants to waters of the State.” Draft RAPs at 1, Introduction. However, any unpermitted discharge of agricultural pollutants from a point source is an enforceable violation of the Clean Water Act, and Vermont’s Water Pollution Control Law likewise prohibits discharges. 33 U.S.C. § 1311(a); 10 V.S.A. § 1259(a). The presumption could give false assurances to farms regarding their compliance with other water quality laws.

We understand that this provision may be an effort to provide some assurances to farmers regarding compliance with the RAPs and enforcement of Vermont’s agricultural water quality law. A better approach would be for AAFM to use its enforcement discretion when addressing discharges that occur despite a farm’s compliance with the RAPs.

Section 1: General

- The wording of the final sentence under Section 1.3, in particular the word “verifiable,” reads as an effort to limit the enforcement authority of the Vermont Agency of Natural Resources and the Attorney General’s Office, which AAFM cannot do. Draft RAPs at 1, § 1.3. The water pollution control enforcement authorities of ANR and the Attorney General are already laid out in statute (10 V.S.A. §§ 1274, 8001-8221) and include, among other things, the authority to “issue a written warning” when ANR “determines that a violation will or is likely to occur.” 10 V.S.A. § 8006. We recommend revising the sentence as follows: “These rules do not in any way prevent the ANR or Attorney General from enforcing the state’s Water Pollution Control statutes and regulations.”

Section 2: Definitions

- In the definition of “small farm,” the language in subsection (d) that limits the rationales the Secretary may use in designating a small farm should be deleted (“based on the [farm’s] management, agricultural inputs used by the farm, tillage practices used by the farm”). Draft RAPs at 5, § 2.25(d). Act 64 provides that the Secretary’s determination regarding whether to designate a small farm must be based on whether “the farm poses a threat of discharge to a water of the State or presents a threat of contamination to groundwater.” 6 V.S.A. § 4871(b).

Section 3: Required Agricultural Practices Activities

- In Section 3.1, there should not be a presumption that compliance with the RAPs equals no “discharge to waters of the state and groundwater.” Draft RAPs at 6, § 3.1. (See above.)
- Most of Section 3 is unnecessary because, as explained above, Act 64 is clear that the Required Agricultural Practices apply to “all farms.” 6 V.S.A. § 4810a(a) (“the Secretary shall amend by rule the required agricultural practices in order to improve water quality in the State [and] assure practices *on all farms* eliminate adverse impacts to water quality”)

(emphasis added). The Act does not authorize AAFM to exempt categories of farms from the RAPs, whether for concerns about agency implementation resources or for other reasons. Rather, AAFM should distinguish between those farms that are subject to Small Farm certification, and those that are only subject to the RAPs (which are all remaining farms). 6 V.S.A. § 4810a(a)(1). This would not bring every backyard chicken coop under the realm of the RAPs, because a parcel of land is not a “farm” unless it is “devoted primarily to farming.” Draft RAPs at 2, § 2.07; *see also* 6 V.S.A. § 4802(2) (designating multiple activities that qualify as farming).

- Our understanding is that there may be large numbers of farms in Vermont that would not be covered by the RAPs under the exemption in this Section. We have also heard concerns that some RAPs could not be implemented on the smallest farms because, e.g., there would not be enough space for a required buffer. Rather than exempt large numbers of farms that may be significantly contributing to Vermont’s agricultural water pollution problems, a better approach—and one that would be consistent with Act 64—would be to establish a different set of standards for farms that fall under a certain size. *See* 6 V.S.A. § 4810a(11) (authorizing AAFM to allow for “alternative techniques or practices” where site-specific conditions prevent compliance with the RAPs).

Section 4: Small Farm Certification

- The RAPs should specify the requirements for the annual certification form, so that the public can provide comments and input. Draft RAPs at 7, § 4.10.
- The language of § 4.10(f) must make clear the Secretary has the authority to inspect small farms, “at any time for the purpose of assessing compliance by the small farm with the required agricultural practices and determining consistency with a certification of compliance submitted by the person who owns or operates the small farm.” 6 V.S.A. §4871(e).
- Small farms should be inspected more than once. Under the current draft, a small farm must only be inspected once, ever, and only sometime within the first ten years of certification. Draft RAPs at 8, § 4.10(f). Inspections are key to identifying problems, sharing information, and finding solutions. This is especially true where lack of information and education about water quality requirements has been identified as a primary cause of pollution problems on farms. Additionally, without regular, meaningful inspections, the small farm certification program becomes little more than voluntary. Small farms should be inspected, at the very least, once every five years on an ongoing basis. Relevant inspection results, such as land use changes, should be included in a database management tool that monitors land use change and phosphorus reduction progress by subwatershed.
- Required Farm Operator Training should be required on an annual, or at the most, semi-annual basis. Draft RAPs at 8, § 4.12. As mentioned, education and outreach are key to helping to prevent pollution problems, and often it is the small farms that have the most difficulty obtaining helpful guidance.

Section 5: Required Agricultural Practices; conditions, restrictions, and operating standards

We firmly believe the practices of section 5 should incorporate the activities and perspective of sustainable agriculture outlined in this letter. In addition, we encourage AAFM to adjust the draft RAPs accordingly:

- We recommend adjusting the language of Section 5.1 to help inform farmers that point source discharges from *any* part of the farm (not just the production area or waste management system) require a permit from ANR. Draft RAPs at 9, § 5.1.
- Field stacking of manure should be prohibited in floodplains as well as “lands in a floodway or otherwise subject to flooding.” Draft RAPs at 9, § 5.2(e).
- Nutrient Management Plans should be renewed at least once every five years, and more often as needed to ensure appropriate agricultural utilization of nutrients. Draft RAPs at 10, § 5.3. The current draft of the RAPs appears to require one-time development only.
- The final sentence of Section 5.3(c) should be moved to create a new subsection (d) to specify that NMPs and records of soil analyses, manure application, and waste analyses must be maintained by all farms subject to Section 5.3 (not just those farms in subsection (c)). Further, these records should be provided to the Secretary on an annual basis, not just provided to the Secretary “upon request.” Draft RAPs at 10, § 5.3(c).
- We recommend adding to Section 5.4 that cover crops may not be sprayed with harsh pesticides, such as glyphosate, in order to remove them each year. Rather, cover crops should be killed through non-chemical practices such as mow-down and rolling/slicing/crimping techniques.
- The provision regarding gully erosion should be more specific. Draft RAPs at 11, § 5.4(d). Though it is mandatory (“shall be managed”), the actual requirements are too vague to provide adequate guidance to farmers or adequate requirements to protect water quality. We recommend adding language specifying that gully erosion shall be managed to “*prevent discharges to waters* through the use of appropriate management strategies, etc.”
- The “Waste Application Standards” section of the RAPs should require all persons who land apply wastes to comply with the same requirements with which custom manure applicators must comply (see Section 10). This will help to ensure that applicators at all farms are fully knowledgeable and aware of best practices for preventing water pollution. Draft RAPs at 11, § 5.5.
- We recommend adding language to Section 5.5 to make it clear that the prohibition on applying wastes when the weather and/or field conditions can be reasonably anticipated to result in flooding, etc., applies regardless of whether a Nutrient Management Plan would otherwise allow waste application. We also recommend adding an example of what “reasonable anticipation” would mean, e.g., the responsibility to check a given weather tracker site. Draft RAPs at 11, § 5.5(d).

- All buffer zones and waste application setbacks should, at a minimum, be doubled and be justified by best available science. Draft RAPs at 11, 13, §§ 5.5(e), 5.7. River corridors must be allowed to regain and maintain equilibrium with 50 ft buffers. VTDEC river corridor procedures must inform working lands land use guidance, similar to all other land use sectors in Vermont. The guidelines provided in Act 64 are *mimumum* distances with the further requirement that buffers must adequately address water quality needs on a site-specific basis. 6 V.S.A. § 4810a(a)(6). We are not aware of any data or studies showing that the proposed buffers in the draft RAPs are sufficient to protect water quality and to reduce sediment mobilization and nutrient runoff in accordance with specified watershed pollution reduction targets. Additionally, stream buffers should be comprised of woody vegetation with deep roots first, wherever possible, and then grasses or other perennial vegetation demonstrated to aid in the filtering of sediment and reduction of erosion.
- We recommend adding a requirement that all farms practice integrated pest management rather than starting with the application of chemical pesticides, through the use of techniques such as crop rotation, the planting of crops that are natural pesticides, identification and removal of pests before they become harmful, and weeding. This will not only help to reduce the use of chemical pesticides and associated pollution of waterways and groundwater, but will encourage ecological health of farms more generally.
- This Section should be revised to require that livestock actually be excluded from surface waters. Draft RAPs at 14, § 6; 6 V.S.A. 4810a(9) (AAFMs must “[e]stablish standards *for the exclusion of livestock* from water of the State to *prevent erosion and adverse water quality impacts*”) (emphasis added). In particular, allowing livestock outside production areas to have access to surface waters unless there are already unstable banks with erosion neither excludes livestock, nor prevents erosion and adverse water quality impacts. Relying on AAFMs to go farm-by-farm to designate all areas where water quality may be impacted by livestock stream access is insufficient; it could encompass every stream in the State. Draft RAPs at 14, § 6(b).
- The “and” in subsection (a)(iv) should be changed to an “or” to make it clear that the Secretary may conduct groundwater sampling under any of the listed conditions. Draft RAPs at 15, § 8(a).

Conclusion

We believe that adopting Vermont’s new Required Agricultural Practices provides an important opportunity for taking much-needed, innovative steps that will not only protect Vermont’s water quality, but can also support transitioning to sustainable systems that will ensure the vitality of Vermont’s farms and environment for the long term. Therefore, we urge you to revise the draft RAPs consistent with these recommendations.

Thank you for your consideration.

Sincerely,



Mark Nelson
Chair
Vermont Chapter of the Sierra Club



Rebekah Weber
Lake Champlain Lakekeeper
Conservation Law Foundation



David Deen
Upper Valley River Steward
Connecticut River Watershed Council



Brian Shupe, AICP
Executive Director
Vermont Natural Resources Council



Lauren Hierl
Political Director
Vermont Conservation Voters



Marty Illick
Executive Director
Lewis Creek Association



Lori Fisher
Executive Director
Lake Champlain Committee

Appendix A

Plant Production Practices⁷

Selection of site, species, and variety: Preventative strategies, adopted early, can reduce inputs and enable sufficient planning to lessen water quality impacts. When possible, pest-resistant crops should be selected which are tolerant of existing soil or site conditions. When site selection is an option, factors such as soil type and depth, previous crop history, and location (e.g. climate, topography, including proximity to surface waters, floodplains, inundation areas, and wetlands) should be taken into account before planting.

Diversity: Diversified farms are typically economically and ecologically resilient. While monoculture farming has advantages in terms of efficiency and ease of management, the loss of the crop in any one year can put a farm out of business and seriously disrupt the stability of the community dependent on that crop. By growing a variety of crops, farmers spread economic risk and are less susceptible to the radical price fluctuations associated with changes in supply and demand. Properly managed, diversity can also buffer a farm from pest infestations, which can result in fewer synthetic chemicals entering waterways.

Soil management: Activities that increase organic matter, reduce compaction, promote biological activity, reduce erosion and maintain nutrient levels are necessary to provide long-term sustainability of agricultural soils and protection of surface water areas and continuous riparian buffers. Practices that promote these goals include reduced tillage, avoiding tillage and traffic on wet soils, addition of organic matter using manure, green manures and compost, sod and legume rotations and the use of cover crops.

Efficient use of inputs: The application of any synthetic, petroleum-based fertilizers and/or pesticides and/or herbicides should be prohibited. The active ingredients of these chemicals degrade many of Vermont's water bodies. Soil fertility and crop nutrients should be managed through mechanical tillage and cultivation practices, crop rotations and cover crops, supplemented with animal and crop waste materials and, under specified conditions, certain permitted synthetic materials. The use of sewage sludge should also be prohibited.

Consideration of farmer goals and lifestyle choices: Management decisions should reflect not only environmental and broad social considerations, but also individual goals and lifestyle choices. For example, adoption of some technologies or practices that promise profitability may also require such intensive management that one's lifestyle actually deteriorates. Management decisions should promote water quality improvement, sediment and nutrient reduction targets, as well as nourish the community and individual.

Animal Production Practices⁸

Management planning: Including livestock in the farming system increases the complexity of biological and economic relationships. The mobility of the stock, daily feeding, health concerns,

⁷ Adapted from: SARE, Plant Production Practices, <http://goo.gl/O9egFX>.

⁸ Adapted from: SARE, Animal Production Practices, <http://goo.gl/3YGgTb>.

breeding operations, seasonal feed and forage sources, and complex marketing are sources of this complexity. Therefore, a successful operation plan should include enterprise calendars of operations, stock flows, forage flows, labor needs, herd production records, and land use plans to give the manager control and a means of monitoring progress and mitigating water quality infractions.

Animal selection: The animal enterprise should be appropriate for the farm and natural resources. Farm capabilities, potential impacts on water bodies and aquatic features, and constraints such as feed and forage sources, landscape, climate, and skill of the manager should be considered in selecting which animals to produce.

Animal nutrition: Feed costs are the largest single variable cost in any livestock operation. While most of the feed may come from other enterprises on the farm, some purchased feed is usually imported from off the farm. Feed costs can be kept to a minimum by monitoring animal condition and performance and understanding seasonal variation in feed and forage quality on the farm. Producers should feed livestock feed products that are 100 percent organic, but may also feed permitted vitamin and mineral supplements. All animals should have ready access to pasture and, for the entire length of the grazing season, should get 30 percent of their feed on a dry-matter basis from pasture. Minimizing the use of feed supplements can reduce excess nutrients discharging into waterways.

Reproduction: Using quality germplasm to improve herd performance is another key to sustainability. In combination with good genetic stock, adapting the reproduction season to fit the climate and sources of feed and forage reduces health problems and feed costs. The benefits also extend to minimizing synthetic inputs.

Herd health: Animal health greatly influences reproductive success and weight gains, two key aspects of successful livestock production. Unhealthy stock waste feed and require additional labor and inputs that may negatively impact water quality. To maintain health, animals should be raised in clean environments with adequate space to reduce animal-stress and the likelihood of infections. The use of antibiotics should be prohibited except in the case of acute infections in sick animals.

Grazing management: The stocking rate must be correct for the landscape and the forage sources. Prolonged concentration of stock that results in permanent loss of vegetative cover on uplands or in riparian zones should be avoided. Livestock should be excluded from surface waters, river corridors, and inundation areas. Livestock may have temporary access to surface waters at defined livestock crossings.

Confined livestock production: Animal health and waste management are key issues in confined livestock operations. Confined livestock production is increasingly a source of surface and ground water pollutants, and should be avoided. All livestock must have ready access to pasture and, for the entire length of the grazing season, should get 30 percent of their feed on a dry-matter basis from pasture. Livestock production systems that disperse stock in pastures so the wastes are not concentrated and do not overwhelm natural nutrient cycling processes are strongly

encouraged. Animals should only be temporarily confined, and only for reasons of health, safety, to protect soil or water quality, and/or the animal's state of production.

*Economics and Social Context*⁹

Profitability: Farms are businesses that rely on turning a profit. Transitioning to an agricultural system that internalizes the costs of production can affect the farmer's bottom line. Therefore, farmers should adhere to business models that increase their price point, including but not limited to organic, value-added, and diversified farming operations that supply local and regional markets. Economic stability is an important driver that enables environmental protection. Oftentimes producers do not feel they have the option of conserving water quality and stewarding their land because of financial constraints.

- ***Organic:*** American consumer demand for organic products has grown by double-digits every year since the 1990s. Organic sales have increased from \$3.6 billion in 1997 to over \$39 billion in 2014. The vast majority of Americans purchase some organic products with a recent *Consumer Reports* survey demonstrating that 84 percent of American consumers purchase organic food.¹⁰ With restrictions on synthetic chemical use under the new RAPs, transitioning to organic would be fairly straightforward. Vermont farmers could also take advantage of large organic consumer hubs in Boston, New York, and Philadelphia.
- ***Value Added:*** Value-added production changes the state of a product or alters the production process to enhance the value of the end product.¹¹ Providing value can be in the form of marketing a unique product, filling a market niche, simplifying the supply chain, providing a service, and many other ways. Examples of value added products include organic milk or yogurt.¹²
- ***Diversified:*** Diversified farming systems are a set of methods and tools developed to produce food sustainably by leveraging ecological diversity at plot, field, and landscape scales. While there is no single template, an example of diversified farming includes multiple crops and/or varieties and integration with livestock.¹³ If adequate management and labor resources exist, diversification reduces financial risk. Diversification hedges against drought and economic pressures from increased input costs, commodity price declines, and regulations that affect the supply of certain commodities.¹⁴
- ***Local and Regional:*** In 2012, 163,675 farms in the U.S. were marketing foods locally, defined as either direct-to-consumer or intermediated sales of foods. The number of farms with direct-to-consumer sales increased by 17 percent and sales increased by 32 percent between 2002 and 2007. Overall, sales of local foods were estimated to have

⁹ Adapted from: SARE, The Economic, Social, & Political Context, <http://goo.gl/5110Ap>.

¹⁰ Organic Trade Association, State of the Industry, <http://goo.gl/iMf2c2>.

¹¹ USDA, Value-Added Producer Grant, <http://goo.gl/7h96GJ>.

¹² Agricultural Marketing Resource Center, What Is Value-Added Agriculture?, <http://goo.gl/ieeWbz>.

¹³ Berkeley Food Institute, Center for Diversified Farming Systems, <http://goo.gl/lyMsbi>.

¹⁴ UW-Madison, Center for Integrated Agricultural Systems, <http://goo.gl/OsBzOJ>.

grown from \$4 billion in 2002 to \$6.1 billion in 2012.¹⁵ Vermont, in particular, has a rich farm to plate culture with potential for significant increase in direct-to-consumer sales.¹⁶

Land use: Conversion of agricultural land to urban uses is a particular concern in Vermont as rapid growth and escalating land values threaten farming on prime soils. Existing farmland conversion patterns often discourage farmers from adopting sustainable practices and long-term perspective on the value of land. Adopting sustainable farming practices can play a key role in building public support for agricultural land preservation.

Conservation and preservation of productive agricultural land and water resources for long-term stewardship should be a priority over development. Those seeking to convert needed agricultural land to other uses bear the burden of proving that the proposed new use is more important to current and future public welfare than agriculture and that there is no other feasible location for the proposed use. Comprehensive statewide land use planning is necessary to ensure a balance of lands for all purposes. It is important that there be wide public and professional participation in the land use planning process.

Labor: In Vermont, the conditions of agricultural labor are generally far below accepted social standards and legal protections in other forms of employment. On-the-farm policies should provide adequate wages, safe working conditions, health benefits, and changes for economic stability. The needs of migrant labor for year-round employment and adequate housing are a particularly critical issue. Labor exploitation, like environmental degradation, is often an economic issue. Social and environmental considerations are overlooked because of the upfront costs. It is critical to encourage fair working conditions at the same time as demanding water quality protection – as both are proxies for farm stability.

Rural community development: Locally based sustainable agriculture encourages strong, rural communities by creating jobs, developing a community ethos, protecting water resources, providing food security, and connecting rural and urban areas.¹⁷

¹⁵ USDA, *Trends in U.S. Local & Regional Foods Systems* (Jan. 2015), <http://goo.gl/bRxHMk>; John Ikerd, *The Economics of Sustainable Farming*, <http://goo.gl/i7hBxY>.

¹⁶ Farm to Plate, 3.7: Nutrient Management, <http://goo.gl/b4pRMt>.

¹⁷ Duke Law Community Enterprise Clinic, *Developing Whole Communities: Community Economic Development & Locally Based Sustainable Agriculture*, <https://goo.gl/sYf5jK>.