

SECTION: PROSPERITY

# VITAL CAPITAL INDEX FOR DAIRY AGRICULTURE, VERSION 3.0 (DRAFT BETA 3 FOR PEER REVIEW)

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Andrew Whitman

[awhitman@manomet.org](mailto:awhitman@manomet.org)

Manomet, 14 Maine Street, Suite 410, Brunswick ME 04011

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**TABLE OF CONTENTS**

INTRODUCTION AND PURPOSE ..... 5

    BACKGROUND ..... 5

    DESCRIPTION OF MODULES 1, 2, 3, AND 4 ..... 7

PROSPERITY ..... 9

    TOPIC #1 - BUSINESS OVERSIGHT AND STRATEGY ..... 9

        1.1 AWARENESS INDICATOR ..... 9

        1.2 PRACTICE INDICATORS ..... 9

        1.3 PERFORMANCE INDICATORS ..... 14

        1.4 SUSTAINABILITY INDICATOR ..... 14

    TOPIC #2 - FARM MANAGEMENT ..... 15

        2.1 AWARENESS INDICATOR ..... 15

        2.2 PRACTICE INDICATORS ..... 15

        2.3 PERFORMANCE INDICATORS ..... 16

        2.4 SUSTAINABILITY INDICATORS ..... 18

    TOPIC #3 - REVIEW OF FARM OPERATIONS ..... 20

        3.1 AWARENESS INDICATOR ..... 20

        3.2 PRACTICE INDICATORS ..... 20

        3.3 PERFORMANCE INDICATORS ..... 21

        3.4 SUSTAINABILITY INDICATORS ..... 23

PEOPLE ..... 24

    TOPIC #4 - FARM FAMILY WELL-BEING ..... 24

        4.1: AWARENESS INDICATOR ..... 24

        4.2: PRACTICE INDICATORS ..... 24

        4.3 PERFORMANCE INDICATORS ..... 25

        4.4 SUSTAINABILITY INDICATOR ..... 26

    TOPIC #5 – CONSUMER WELL-BEING ..... 28

        5.1 AWARENESS INDICATOR ..... 28

        5.2 PRACTICE INDICATORS ..... 28

        5.3 PERFORMANCE INDICATORS ..... 30

        5.4 SUSTAINABILITY INDICATORS ..... 31

TOPIC #6 – EMPLOYEE WELL-BEING .....	32
6.1. AWARENESS INDICATOR .....	32
6.2 PRACTICE INDICATORS.....	32
6.3 PERFORMANCE INDICATORS .....	34
6.4 SUSTAINABILITY INDICATORS.....	36
TOPIC #7 - LOCAL COMMUNITY WELL-BEING.....	38
7.1 AWARENESS INDICATOR.....	38
7.2 PRACTICE INDICATORS.....	38
7.3 PERFORMANCE INDICATORS .....	40
7.4 SUSTAINABILITY INDICATOR.....	41
PLANET .....	42
TOPIC #8 - ANIMAL CARE AND WELL-BEING.....	42
8.1 AWARENESS INDICATOR.....	42
8.2 PRACTICE INDICATORS.....	42
8.3 PERFORMANCE INDICATORS .....	45
8.4 SUSTAINABILITY INDICATOR.....	46
TOPICS #9 - LAND STEWARDSHIP.....	47
9.1 AWARENESS INDICATOR.....	47
9.2 PRACTICE INDICATORS.....	47
9.3: PERFORMANCE INDICATORS .....	51
9.4 SUSTAINABILITY INDICATORS.....	52
TOPIC #10. ECOSYSTEM CONSERVATION .....	54
10.1 AWARENESS INDICATORS.....	54
10.2 PRACTICE INDICATORS.....	54
10.3: PERFORMANCE INDICATORS.....	55
10.4 SUSTAINABILITY INDICATORS .....	57
TOPIC #11 - ENERGY, WASTE, AND GREENHOUSE GAS EMISSIONS .....	58
11.1 AWARENESS INDICATOR .....	58
11.2 PRACTICE INDICATORS .....	58
11.3 PERFORMANCE INDICATORS .....	61
11.4 SUSTAINABILITY INDICATORS .....	62
TOPIC #12 – WATER .....	64
12.1 AWARENESS INDICATOR .....	64

12.2 PRACTICE INDICATORS .....	64
12.3 PERFORMANCE INDICATORS .....	66
12.4 SUSTAINABILITY INDICATORS .....	66
REFERENCES .....	68

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## INTRODUCTION AND PURPOSE

Manomet, in collaboration with Agri-Mark/Cabot Creamery Cooperative (Agri-Mark), conceived of the **Vital Capital Index for Dairy Agriculture** (VCI) as a tool to help dairy farmers assess, benchmark, and manage the sustainability performance of their farms. Equally important, the VCI provides results that dairy farmers can use to communicate efforts of continuous improvement with a variety of stakeholders. The VCI is composed of practical, field-tested, science-based indicators developed to address a wide range of sustainability topics. This document is a beta version of VCI 3.0 that is currently under review by selected dairy farmers from the northeastern U.S. Two prior versions of the VCI have been developed and field tested.

Vital Capital refers to the five key capitals that are essential for human well-being and sustainability:

- *Natural Capital* is any stock or flow of energy and material that produces goods and services and is synonymous with ecosystem services (e.g., resources, processes).
- *Human Capital* consists of people's health, knowledge, skills and motivation which are vital to productive work.
- *Social Capital* consists of the institutions that help us maintain and develop human capital
- *Built or Manufactured Capital* is composed of material goods or fixed assets which contribute to infrastructure and the production process.
- *Financial Capital* is the money which plays a key role in our economy, enabling the other capitals to be owned and traded.

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## BACKGROUND

In 2013, Manomet, in partnership with Agri-Mark, launched version 3.0 of the online Vital Capital Index (VCI) to aid dairy farmers with benchmarking their sustainability and managing twelve key topics of stewardship (Table 1). With support from the Innovation Center for Dairy Agriculture, Manomet developed a beta VCI through discussions with dairy farmers and by reviewing dozens of leading farm sustainability frameworks, and then synthesizing those findings with review from industry experts. Version 3.0 is a confidential tool that begins with 12 questions of “Awareness” on key sustainability topics, and then will drill deeper on a topic-by-topic basis into three additional modules. The VCI’s four modules together are identified as M.A.P.P.S. – for the *Manomet Awareness, Practice, Performance and Sustainability* process. [Please note: VCI Module 1, the Awareness level, is “live”; the other sections are currently in development]. The VCI uses a go-at-your-own-pace approach, including the ability to easily enter and exit the tool. Ultimately, the VCI provides a snapshot of a farm’s sustainability story as well as a roadmap for a farm’s stewardship opportunities. The VCI takes a triple-bottom-line approach by covering economic, social and environmental components of sustainability. It takes dairy farmers about 15 minutes to complete Module 1 of the VCI. This document contains draft indicators for modules 2, 3, and 4 for review. A draft of the complete VCI has already been reviewed in the field on four pilot farms.

Pressing environmental and social issues related to dairy agriculture are occupying more and more of dairy farmers' time. The VCI was designed to help dairy farmers tackle these challenges by addressing a dozen core sustainability topics ranging from farm management to food safety to water stewardship. Farmers can use it as a benchmarking tool to track their continuous improvement. The results can help farmers communicate their sustainability story to supply chains and neighbors alike. Most importantly it allows farmers to be comprehensive and develop sensible strategies for tackling these challenges while enhancing the viability and stewardship of their operations.

**Table 1. The triple bottom lines and twelve sustainability topics in the Vital Capital Index for Dairy Agriculture, beta v.3.0.**

Triple Bottom Lines	Related Twelve Topics
Prosperity	
	Business Oversight and Strategy
	Farm Management
	Review of Farm Operations
People	
	Farm Family Well-being
	Consumer Well-being
	Employee Well-being
	Local Community Well-being
Planet	
	Animal Care and Well-being
	Land Stewardship
	Ecosystem Conservation
	Energy, Waste, and Greenhouse Gas Emissions
	Water

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## DESCRIPTION OF MODULES 1, 2, 3, AND 4

The VCI has four modules that provide the platform upon which farmers can take a business-based approach to sustainability (Figure 1). The underlying indicators were field-tested and are practical and science-based.

### MODULE 1: AWARENESS

A farmer can use Module 1 to identify their awareness and engagement on key sustainability topics. In Module 1, each indicator question has four possible responses. The user selects the one response that best describes the degree with which a key sustainability practice has been applied on their farm. The four possible responses are scored between 0 and 0.8 points per topic, with a total maximum of 10 points across the entire module (including 0.4 points for participating). A higher score indicates that a user has a high level of awareness of these key farm sustainability topics.

### MODULE 2: PRACTICE

Module 2 is composed of indicators to identify the various sustainability practices a dairy farmer might apply to their farm. Each indicator is a question regarding use of a list of related practices. Each practice has a weighed score based on the extent to which it might improve outcomes relevant to a specific topic. For each topic in Module 2, the scores of all responses to an indicator question are summed up. Total scores for each topic can range from 0 to 10 depending on which practices have been identified. A farmer can use Module 2 to benchmark practices and self-assess which additional ones might be considered in order to enhance their operations. A high score simply indicates that a user identified many sustainability practices in place on their dairy.

### MODULE 3: PERFORMANCE

Module 3 is composed of two types of performance indicators: (1) *Key Management Indicators* which describe the performance or level of the management around a specific topic, and (2) *Key Performance Indicators* describing the performance regarding a specific topic. *Key Management Indicators* score from 0 to 10. A “0” indicates no management practices are in place with regard to the topic; a “10” indicates strong management practices are in place to manage dairy farm risks. The *Key Management Indicators* are intended to capture key, holistic synergies among practices that can enhance the sustainability of a dairy. High scores indicate that a strong system is in place for managing a specific topic.

*Key Performance Indicators* have their own units and will include benchmarks from other sources in the future. Many of the *Key Performance Indicators* are widely in use in dairy agriculture already. Although the levels of both types of indicators are directional, what is sustainable is undefined as this could vary among dairy farms. A farmer can use Module 3 to assess and track continuous improvement on their farm performance over time.

### MODULE 4: SUSTAINABILITY

Using a context-based approach<sup>1</sup>, Module 4 allows farmers to see if they are sustainable for key topics. These indicators measure farm or business performance in terms of impacts on vital capitals, relative to current

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<sup>1</sup> McElroy and van Engelen 2012.

standards or norms (legal or broad-based social) in order to ensure stakeholder well-being<sup>2</sup>. We include context-based metrics for sub-topics wherein farmers may have obligations or responsibilities to themselves and/or other stakeholders (e.g., suppliers, employees, neighbors, consumers, et al.), typically following legal requirements and based on our interpretation of strongly prevailing social norms. For some topics, we determined that farmers do not currently have legal requirements or clear responsibilities and so did not include a context-based metric.

Figure 1: The four modules of the Vital Capital Index for Dairy Agriculture, beta v.3.0. Each of the 12 topics have indicators in each module.



<sup>2</sup> McElroy and van Engelen 2012.  
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## PROSPERITY

Farm prosperity is the state of having a financially successful farm and is an essential starting point for farm sustainability. It is key to the financial viability for the farm business and farm family. Financially-successful farmers are better able to produce wholesome milk, to add to local well-being, and be good environmental stewards. Their farms also contribute to the local economy. Key topics of managing for farm prosperity include farm business oversight and strategy, farm management, and review of farm operations. This follows the PDCA cycle (for Plan, Do, Check, Act) which is widely used for managing for continuous improvement and adaptive management efforts in business and elsewhere<sup>3</sup>.

### TOPIC #1 - BUSINESS OVERSIGHT AND STRATEGY

Business oversight is the management and supervision of farm operations to achieve desired goals. Effective oversight addresses key issues which reduces business risk and can enhance profitability. Sustainable business strategy is a long term action plan designed to achieve owner financial goals while enhancing the sustainability of the dairy farm.

#### 1.1 AWARENESS INDICATOR

A business plan is a map of strategies to help you achieve profitability and personal goals for your business. Loan agreements often include the basic information found in a business plan and can also help you achieve your business goals.

- 1.1.1. In the last five years, have you completed a business plan and/or loan agreement (0.8 pt)?
- a. Hardly or Not at All (0 pt)
  - b. Somewhat (0.2 pt)
  - c. Mostly (0.5 pt)
  - d. Yes or I don't borrow money for my dairy operation (0.8 pt)

#### 1.2 PRACTICE INDICATORS

##### BUSINESS OVERSIGHT (4 POINTS)

Business oversight or governance includes the methods and practices for ensuring accountability and financial success of the dairy business.

- 1.2.1. Business governance: Which of the following oversight-related practices are applied in the course of running your farm business? (4 pts)
- a. Regularly meet to review progress with other owners, family members, key employees, et al. (0.4 pt)

<sup>3</sup> Shewart 1980. This framework selected based on a suggestion by Brad Swanson, an SBDC counselor in Maine.  
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- b. Have core business values and ethics communicated and followed by employees/family workers and includes a notion of sustainability (including viability and stewardship of resources and people) as a core value (0.4 pt)<sup>4</sup>
- c. Align farm practices with goals for your farm (0.4 pt)
- d. Include decisions and efforts related to operational and financial sustainability into the core farm strategy (0.4 pt)
- e. Either directly or through family members, and/or employees, support or participate in efforts to create performance standards and/or voluntary sustainability programs in the dairy industry (0.4 pt)

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### SUSTAINABILITY STRATEGY (3 POINTS)

A sustainability strategy is a business approach that creates long-term owner value and enhances long-term viability while taking into consideration your employees, your local community, and local natural resources.

1.2.2. Business Strategies: Which of the following strategies are you using to ensure the long-term viability of your core farm business? (3 pts)

- a. Improving the tracking of farm financials (0.4 pt)
- b. Integrating livestock and crop production with an aim toward continuously increasing efficiency (0.4 pt)
- c. Expand innovative practices and use of technology without becoming over leveraged (0.15 pt)
- d. Using tools (e.g., hedging, enrollment in the USDA Margin Protection Program, states programs, etc.) to protect the price of your milk (0.1 pt)
- d. Improving employee/family worker supervision and engagement (0.2 pt)
- e. Reducing energy use and/or increasing use of renewable energy (0.15 pt)
- f. Improving nutrient use efficiency (including feed efficiency) (0.4 pt)
- g. Improving cow care and/or milk quality (0.2 pt)
- h. Improving ability to adapting to weather variation (0.1 pt)
- i. Understanding source of purchased feed and its supply and pricing vulnerabilities (0.1 pt)
- j. Applying new practices to get ahead of changing regulations (0.1 pt)
- k. Reducing the use and/or increasing the re-use and recycling of inputs and materials (0.15 pt)
- l. improving work/private life balance of self, family workers, and employees (0.2 pt)
- m. Applying cutting edge and significantly innovative cropping strategies (0.2 pt)
- n. participate in communicating sustainability efforts of your farm and the dairy industry (0.05)
- o. Have an environmentally preferable purchasing (EPP) policy to procure products such as recycled paper or low impact cleaning chemicals where feasible?<sup>5</sup>
- p. Other1 (please add): \_\_\_\_\_ (0.1 pt)
- q. Other2 (please add): \_\_\_\_\_ (0.1 pt)

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### BUSINESS PLANNING (3 POINTS)

<sup>4</sup> Austin Green Business Leaders Program (2015)

<sup>5</sup> Austin Green Business Leaders Program (2015)

A business plan is your guide to help you achieve financial and personal goals for your farm business. Loan agreements often include some of the basic information found in a business plan and can also help you achieve your business goals. Though a plan often changes, it can help you take stock and get you where you want to go.

1.2.3. Annual Planning: Which of the following annual business planning practices do you apply each year to achieve your business goals (1 pts)?

- a. Prepare an annual budget with projected revenue, expense, and profit, including multiple cash flow budget scenarios (e.g., most likely, best, and worst case) (0.35 point)
- b. Plan for owner's income so that it is sufficient to meet the business owner's needs (0.3 point)
- c. Make projections for production of milk and other agricultural products (0.15 point)
- d. Review and use forward contracting, hedging, Livestock Gross Margin for Dairy (USDA), and/or milk futures to reduce milk or feed price risk when applicable (0.1 point)
- e. Deploy family workers, employees, or contractors to complement your strengths and weakness when applicable (0.06 point)
- f. Other1 (please add): \_\_\_\_\_ (0.02 points)
- g. Other2 (please add): \_\_\_\_\_ (0.02 points)

1.2.4. Information Sources for Planning: In the last five years, which of the following information sources have you used to help you plan or consider new practices or technology to improve your farm business? (0.5 pts)

- a. Business consultants (Small Business Development Center or private counselors) (0.05 pt)
- b. Other farmers (0.08 pt)
- c. Ag. media (trade and farming magazines or web sites) (0.01 pt)
- d. Loan and lending officers (0.5 pt)
- e. Technical consultants such as Feed or crop consultants, equipment dealers, suppliers, milk truck drivers (0.06 pt)
- f. Veterinarians (0.07 pt)
- g. Customers and dairy co-op staff (0.04 point)
- h. Agency or university agricultural advisors and scientists (0.03 point)
- i. Workshops and field demonstrations (0.05 point)
- j. Other1 (add your information source): \_\_\_\_\_ (0.04 points)
- k. Other2 (add your information source): \_\_\_\_\_ (0.02 points)

1.2.5. Key Documents: Which of the following key farm documents do you have on-hand (can be in a safe deposit box) (0.5 pt)?

- a. Deeds and survey maps of properties (0.1 pt)
- b. Loan agreements or I don't have loans (0.1 pt)
- c. Milk contracts (0.05 pt)
- d. Agriculture-related permits and licenses (0.02 pt)
- e. Agreements and maps for leased farmland (0.02 pt)

- f. Farm layout map, including buildings, roads, pasture, cropping areas, fence lines, water bodies, forest, and other non-production areas (0.01 pt)<sup>6</sup>

1.2.6. Business Plan: Which of the following aspects are described in your current (<36 months old) business plan and/or loan agreement (check all that apply)? (1 points)<sup>7</sup>

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<sup>6</sup> Utz Indicator I.A.1 (area map)

<sup>7</sup> Carkner 2000; Utz Indicator I.A.12 (farm management plan)

a. I don't have a business plan or loan agreement (skip this section)

Plan Components	Information button text	I have a plan	I have a written or electronic plan or is N/A
b. Description of farm operation and goals	<i>This can include a concise statement that describes the purpose of your farm business, operational goals, profit goals, and description of your business organization (type of ownership, family involvement, employees/family workers) and farm operations (physical plant, herd, equipment, land base</i>	<input type="checkbox"/> 0.05 pt	<input type="checkbox"/> (0.25 pt)
c. Key farm financials	<i>This can include your balance sheet, cash flow records, and Income statement</i>	<input type="checkbox"/> 0.2 pt	<input type="checkbox"/> (0.3 pt)
d. Farm production plan	<i>This can include a description of your production system, quality control measures, risk management, stewardship efforts, and environmental and legal requirements for operating.</i>	<input type="checkbox"/> 0.2 pt	<input type="checkbox"/> (0.3 pt)
e. A marketing plan	<i>This can include a short description of your marketing relationship with a co-op or list of your products and services, an evaluation of market opportunities, strategies for reducing market risk, a description of how you market and sell your products, and a description of customers and their needs.</i>	<input type="checkbox"/> 0.05 pt	<input type="checkbox"/> (0.05 pt)
f. An organizational management plan (OR is not applicable because only myself and family members run the farm)	<i>This can include a list of employees/family workers, job title/description, and a description of compensation.</i>	<input type="checkbox"/> 0.05 pt	<input type="checkbox"/> (0.05 pt)
g. An emergency response plan <sup>8</sup>	<i>This addresses emergency contact list, power sources, feed and water for cows, veterinary assistance, map of facilities, pastures, utilities lines, water bodies, and storage of chemical and fuel, etc.</i>	<input type="checkbox"/> 0.02 pt	<input type="checkbox"/> (0.03 pt)

<sup>8</sup> Standard DP.b in Assurance Food Safety (2014).

h. A business succession plan.	<i>This can cover replacement of key employees/family workers and/or transitioning the farm to the next generation of owners</i>	<input type="checkbox"/> 0.02 pt	<input type="checkbox"/> (0.02 pt)
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### 1.3 PERFORMANCE INDICATORS

#### KEY PERFORMANCE INDICATORS

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1.3.1. **Business Strategy:** Having an overarching sustainability strategy creates the vision necessary for maintaining your farm operations and ensuring their long-term viability and operational sustainability.

**a. Sustainable Strategy score:**

Sum of score from Sustainable Business Strategy and Governance\*2 (max=10).

1.3.2. **Business planning:** Having a strong business plan can be a key step for creating your practical vision for your farm, tracking progress, and applying discipline to manage for your business goals.

**a. Planning performance:**

Business Plan Score (based Farm Business Plan score \* 2.5, max =10)

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### 1.4 SUSTAINABILITY INDICATOR

Refer to 2.4.1 (adequate profitability and payments of bills)

## TOPIC #2 - FARM MANAGEMENT

Farm management is the making and implementing of the decisions involved in operating a farm to achieve owner goals and profitability. The quality of farm management is most correlated with financial success<sup>9</sup> and so is a critical piece of dairy agriculture sustainability.

### 2.1 AWARENESS INDICATOR

Effective execution of a business strategy and plan can increase economic sustainability and lead to profitability. Improvements in equipment, feed systems, manure management, employee/family worker supervision, cropping, etc., can improve your profitability, though it may take time to realize a desired return on your investment.

2.1.1. In the last five years or as long as you have owned your farm (whichever is shorter), have you implemented practices on your farm each year that have significantly increased your profitability and efficiency, reduced your costs, reduced your financial risk, and/or created new product/market opportunities (0.8 pt)?

- a. Hardly or Not at All (0 pt)
- b. Somewhat (0.2 pt)
- c. Mostly (0.5 pt)
- d. Yes (0.8 pt)

### 2.2 PRACTICE INDICATORS

Farm management to optimize production and profit, and to achieve your personal goals is a lot of work. It may require diligently implementing and adjusting your plans and having a routine of practices that can help you achieve your farm goals.

2.2.1. Farm Management: Following a routine of key activities that begins with starting projects, assignment of responsibilities, and working through completion can ensure key tasks are well completed. Which of the following key practices do you on your farm (6 pts)?

Farm management

- a. Manage the business strategy and monitor the annual plan and budget to achieve profitability
- b. Identify and watch out for risks related to markets, production, and reputation
- c. Review capital requirements for herd, equipment, and building investment
- d. Address missed scheduling, budget, and performance goals as quickly as possible
- e. Delegate responsibilities to key employees or family workers, or outsource certain tasks
- f. Inspect herd health and assess production
- g. Inspect and maintain milking operations, milk room, and milking equipment
- h. Inspect and maintain other equipment and buildings

<sup>9</sup> Oliver and Erikson 2008, Oliver 2008.

- i. Timely purchases of feed, supplies, and equipment
- j. Foster effective relationships with family workers and employees

#### Marketing, sales, and purchasing

- k. Promote and sale of milk and other agricultural products **OR** belong to a co-op which manages marketing and sales of milk
- l. Foster beneficial working relationships with customers to achieve increased income
- m. Foster beneficial working relationships and manage conflicts with contractors and suppliers

#### Continuous improvement and innovation

- n. Foster beneficial relationships with people in dairy industry
- o. Seek out opportunities for continuous learning and education

#### Finance

- p. Manage cash flow including timely payment of bills (e.g., reconciling checkbook monthly)
- q. Foster beneficial relationships with lenders, contractors, and suppliers

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## 2.3 PERFORMANCE INDICATORS

### KEY MANAGEMENT INDICATORS

2.3.1 **Farm Management:** Which of the following best described the level of operational management and continuous improvement for on your dairy (select only one) (10 pts)?

- a. You and/or your managers always manage farm operations carefully at a level that has been well above for the industry in the last five years. Manager(s) routinely inspects herd health and production, maintains milking operations, milk room, and equipment and makes timely purchases of feed, supplies, and equipment. Risks related to markets, production, and reputation are reviewed weekly to monthly. Business strategy and annual plan are reviewed monthly. Planting and harvesting occur in a timely fashion and achieve production goals. Farmer fosters beneficial relationships with people in dairy industry and seeks opportunities for continuous learning and education. Farmer/managers have effective relationships with family workers and employees and delegate when necessary. Negative impacts of operations to financials only occur in some years when milk prices are low (10 pts).
- b. You and/or your managers often manage farm operations carefully at a level that has been above average for the industry in the last five years. Manager(s) routinely inspects herd health and production, maintains milking operations, milk room, and equipment and makes timely purchases of feed, supplies, and equipment. Risks related to markets, production, and reputation are regularly reviewed. Business strategy and annual plan are reviewed monthly. Farmer fosters beneficial relationships with people in dairy industry and seeks opportunities for continuous learning and education. Planting and harvesting occur in a timely fashion and achieve production goals. Farmer/managers have effective relationships with family workers and employees and delegate when necessary. Negative impacts of operations to financials only occur in years when milk prices are low. (8 pts).
- c. You and/or your managers often manage farm operations at a level that has been average for the industry in the last five years. Manager(s) routinely inspects herd health and production, and maintains milking operations, milk room, and equipment, and makes timely purchases of feed, supplies, and equipment. Risks related to markets, production, and reputation are occasionally reviewed each year. Planting and harvesting occur in a timely fashion and usually achieves production goals.



Farmer/managers have effective relationships with family workers and employees but may not delegate effectively. No actual negative impacts of operations to financials are identified. (6 pts).

- d. You and/or your managers typically manage farm operations at a level that has been below average for the industry in the last five years. Manager(s) routinely inspects herd health and production, maintains milking operations, milk room, and equipment and makes timely purchases of feed, supplies, and equipment. Risks related to markets, production, and reputation are not regularly reviewed. Planting and harvesting is variable and often misses production goals. Farmer/managers provide mediocre supervision of family workers and employees. Careful inspections of herd health and production, maintenance of milking operations, milk room, and equipment, and timely purchases of feed, supplies, and equipment necessary to mitigate adverse impacts to operations only occur in times of financial and production difficulty (2 pts).
- e. You and/or your managers typically manage farm operations at a level that has been well below average for the industry in the last five years. Risks related to markets, production, and reputation are not regularly reviewed. Planting and harvesting is variable and often misses production goals. Farmer/managers provide poor supervision of family workers and employees. Adequate inspections of herd health and production, maintenance of milking operations, milk room, and equipment and timely purchases of feed, supplies, and equipment necessary to mitigate adverse impacts to operations do not regularly occur (0 pt).

2.3.2 Farm Financial Management: Which of the following best described the level of financial management for on your dairy?

- a. You and/or your managers always manage farm financials carefully at a level that has been well above average for the industry in the last five years. Bills are always paid on time or in advance. Annual budget, financial records and accounts are reconciled monthly or more often to avoid and mitigate risks and adverse impacts to dairy financials and operations. Adjustments are made when income and expenditures deviate from the farm budget. You and/or your manager(s) take proactively strive to achieve excellent business and/or trading relationships with buyers, lenders, contractors, service providers, and suppliers through regular contact and review of key matters (10 pts).
- b. You and/or your managers often manage farm financials carefully at a level that has been above average for the industry in the last five years. Annual budget, financial records and accounts are regularly reconciled to avoid and mitigate risks and adverse impacts to dairy financials and operations. Bills are always paid before due. You and/or your managers maintain regular contact with buyers, lenders, contractors, service providers, and suppliers (8 pts).
- c. You and/or your managers often manage farm financials at a level that has been average for the industry in the last five years. Annual budget, financial records, and accounts are occasionally reconciled. Bills are usually paid before due. No actual negative impacts to financials are identified. You and/or your managers maintain occasional contact with buyers, lenders, contractors, service providers, and suppliers (6 pts).
- d. You and/or your managers typically manage farm financials at a level that has been below average for the industry in the last five years. Neither risks to financials nor their potential impacts to the dairy business are regularly reviewed. Bills are generally are paid before due. Adequate reviews of financial records and contact with commercial relationships necessary to mitigate risks and adverse impacts to financials only occur in times of financial and production difficulty (2 pts).
- e. You and/or your managers typically manage farm financials at a level that has been well below average for the industry in the last five years. Neither risks to financials and milk production nor their potential impacts to the dairy are regularly reviewed. Bills are often not paid before due. Adequate reviews of

financial records and contact with commercial relationships necessary to mitigate risks and adverse impacts to financials rarely ever occur (0 pt).

## KEY PERFORMANCE INDICATORS<sup>10</sup>

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2.3.2. **Liquidity** is the ability of your farm business to meet financial obligations as they come due – to generate enough cash to pay your family living expenses and taxes, and make debt payments on time. Current ratio measures the extent to which current farm assets, if sold tomorrow, would pay off current farm liabilities.

**a. Current liquidity ratio** = Total Current Farm Assets / Total Current Farm Liabilities OR

**b. Quick Cash Ratio** = (Cash + Short-term Securities)/ Total Current Farm Liabilities.

2.3.3. **Profitability** is the difference between the value of goods produced and the cost of the resources used in their production. Operating profit margin shows the operating efficiency of the business. If expenses are low relative to the value of farm production, the business will have a healthy operating profit margin. A low profit margin can be caused by low product prices, high operating expenses, or inefficient production.

**a. Operating profit margin** = (net farm income from operations + farm interest expense - value of operator and unpaid family labor)/gross revenue

2.3.4. **Repayment capacity** shows your ability to repay term debts on time. It includes nonfarm income and so is not a measure of business performance alone.

**a. Term debt coverage ratio** = (Net farm income + Depreciation + Net non-farm income – Family living & income taxes + Interest expense on term loans) / Scheduled principal & interest on term loans (including payments on capital leases)

2.3.5. **Financial Efficiency** shows how efficiently a farm uses financial inputs to produce a financial output. One key aspects of farm efficiency is the amount of net farm income that is generated from a given amount of gross revenue.

**a. Net farm income from operations ratio** = net farm income from operations/gross revenue range.

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## 2.4 SUSTAINABILITY INDICATORS

2.4.1. **Farm Income:** Farm owners have different income requirements and rely to varying degrees on income from their dairy operations. Typically, how well has your farm satisfactorily contributed to your income in each of the last five years (10 pts) (sustainability being “c” or better)?

- a. Unsatisfactory in all years (0 pt)
- b. Unsatisfactory most years (5 pt)
- c. Satisfactory most years (7 pt)
- d. Satisfactorily or better each year (10 pt)

2.4.2. **Current on payments:** Typically, how current is your farm business on making payments according to terms for payments to lenders and suppliers in each of the last five years (10 pts) (sustainability being “b” or better)?

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<sup>10</sup> after Becket et al. 2009, recommended by Bob Parson, UVM  
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- a. Mostly make payments on term (1 pt)
- b. Always make payments on term (5 pt)
- c. Mostly make payments before term is up(7 pt)
- d. Always make payments before terms up (10 pt)

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## TOPIC #3 - REVIEW OF FARM OPERATIONS

Routinely reviewing farm activities, including expenditures and income can help keep your farm on track. This often requires making adjustments in order to achieve your business and personal goals as the realities of your business change. A system for maintaining accurate financial records allows you to carefully manage your finances and reduce stress.

### 3.1 AWARENESS INDICATOR

A routine review of farm operations and financials can help ensure that your plan and management are achieving your goals for your farm. Controlling costs by routinely reviewing expenditures and income is one way to keep your farm on track.

3.2.1. Do you review farm costs, sales, other income, loans, and capital projects on at least a monthly basis (0.8 pt)?<sup>11</sup>

- a. Hardly or Not at All (0 pt)
- b. Somewhat (0.2 pt)
- c. Mostly (0.5 pt)
- d. Yes (0.8 pt)

### 3.2 PRACTICE INDICATORS

Maintaining a system of accurate farm records is a first step for benchmarking your farm business's progress toward achieving your goals. It also helps to use a routine of reviewing farm records to make proactive adjustments to help keep your farm on track. Maintaining farm records is a first step. Having a routine of review and adjustment for managing financials and production allows you to carefully manage your finances and can help achieve profitability while minimizing stress.

3.2.1. Financial and Production Records: Which of the following farm business records do you keep (3 pts)?

#### Financial Records

- a. Profit and loss statement (0.6 pt)
- b. Accurate and monthly records of cash balance accounts receivables, accounts payable (0.6 pt)

#### Production records

- c. Herd health/herd management (including heifers, calves)(0.2 pt)
- d. Milk production and quality (0.3 pt)
- e. Feed consumption (0.1 pt)
- f. Feed and forage production and quality **OR** I don't produce forage or feed on my farm (0.1 pt)
- g. Production of other agriculture products **OR** I don't produce significant amounts of other products (0.05 pt)
- h. Equipment maintenance (0.05 pt)

<sup>11</sup> Follows Criterion H.71, WWF 2015.

- i. Amounts and costs of inputs (e.g., fertilizer, fuel and electricity, etc.) (0.2 pt)

3.2.2. Financial record keeping system: Which of the following record keeping practices do you apply to your farm business? (1 pt)

- a. Keep business financial records separate from personal financial records (0.6 pt)
- b. Have a certified bookkeeper or accountant (0.1 pt)
- c. Maintain a well-established relationship with a lender by checking periodically OR I never borrow from a lender (0.4 pt)

3.2.3. Benchmarking and Making Changes: Which of the following practices do you apply to achieve your business goals (5 pts)?

Financials and Production (2.3 pts)<sup>12</sup>

- a. Compare monthly profit and loss statements, balance sheets, and cash flow statements to projections or your expectations and adjust expenditures when necessary (1.2 pt)
- b. Review monthly production, production goals and sales, and adjust expenditures and/or herd management when necessary (0.6 pt)
- d. Meet annually with your lender to discuss your farm's balance sheet and financial position OR your dairy doesn't borrow money or have a lender (0.3 pt)
- e. Compare your annual financial performance to industry benchmarks (0.1 pt)

Marketing (1 pt)

- f. Review milk quality data and adjust milk room practices when necessary (0.4 pt)
- g. Periodically review milk sales and quality with buyers or co-op staff (0.3 pt)
- h. Track sales statistics of other agricultural products OR my farm does not sell other agricultural products (0.1 pt)
- i. Review dairy market trends in pricing, production, and market development (0.1 pt)
- j. Review relationships with co-op OR trading partners to ensure I understand the pricing of my milk (1 pt)

Operations (1.3 pt)

- k. Review milk production, herd health, and feed consumption to identify wasteful practices (0.4 pt)
- l. Compare feed and forage production and quality to past years and adjust cropping practices OR I don't produce forage and feed on my farm (0.3 pt)
- m. Review feed/production ratio to identify inefficiencies (0.2 pt)
- n. Review fuel and electricity use to identify wasteful practices (0.2 pt)
- o. Review water use to identify leaks or wasteful practices (0.1 pt)

Employees/family workers (0.4 pt)

- p. Track employee/family worker performance to ensure that they are meeting agreed-to expectations and using their time efficiently OR I don't have family workers or employees (0.4 pt)
- q. have a document verification program for applicants unknown to me OR I don't have employees OR I hire only local labor (0.3 pt)

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### 3.3 PERFORMANCE INDICATORS

<sup>12</sup> Follows Criterion H.71, WWF 2015  
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## MANAGEMENT PERFORMANCE INDICATOR

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2.3.3 Farm Operational Review: Which of the following best described the level of management for the operational review on your dairy?<sup>13</sup>

- a. You and/or your managers track and understand you operations, including farm financials, milk production, herd health, feed/forage production, employee/family worker performance, and other aspects of farm management at a level that has been well above average for the industry in the last five years. Appropriate financial and other records are maintained and reviewed to make it possible to avoid and mitigate risks and adverse dairy financial and operational impacts. The farm also takes proactive action by requiring suppliers and service providers to provide annual statements reflecting costs and amounts of supplies and services used annually and monthly (10 pts).
- b. You and/or your managers track and understand you operations, including farm financials, milk production, herd health, feed/forage production, employee/family worker performance, and other aspects of farm management at a level that has been above average in the last five years. Appropriate financial and other records are maintained and routinely reviewed to make it possible to avoid and mitigate risks and adverse impacts to dairy financials and operations (8 pts).
- c. You and/or your managers track and understand you operations, including farm financials, milk production, herd health, feed/forage production, employee/family worker performance, and other aspects of farm management at a level that has been average for the industry in the last five years. No actual negative impacts to financials and milk production are identified. However, key financial and other records are not always accessible to the owner(s) or managers and/or are only occasionally reviewed though with generally no negative impact to dairy financials and operations (6 pts).
- d. You and/or your managers track and understand you operations, including farm financials, milk production, herd health, feed/forage production, employee/family worker performance, and other aspects of farm management at a level that has been below average in the last five years. Neither risks to financials and milk production nor their potential impacts to the dairy business are regularly reviewed. Adequate reviews of records and operations necessary to mitigate risks and adverse impacts to financials and milk production are only implemented in times of financial and production difficulty (2 pts).
- e. You and/or your managers track and understand you operations, including farm financials, milk production, herd health, feed/forage production, employee/family worker performance, and other aspects of farm management at a level that has been well below average in the last five years. Neither risks to financials and milk production nor their potential impacts to the dairy are regularly reviewed. Adequate reviews of records and operations necessary to mitigate adverse impacts to financials and milk production are never implemented. Adequate reviews of financials and operations necessary to mitigate risks and adverse impacts to financials rarely ever occur (0 pt).

## KEY PERFORMANCE INDICATORS

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3.3.2. Exceeding regulatory standards: One indication of operations being well tracked is that your dairy is able to avoid risk of costly regulatory actions. How well do your farm practices and impacts compare to regulatory standards for the dairy industry (10 pts)?

- a. Mostly Meet (1 pt)
- b. Always Meet (5 pts)
- c. Mostly Exceed (7 pts)

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<sup>13</sup> In part following Criterion H.71, WWF 2015  
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- d. Far Exceed (10 pts)

3.3.3. Reaching financial goals: When farm financials are sufficiently tracked, it makes it easier to achieve your financial goals. While profitability is always desired, sometime your annual financial goals in poor years may be to control losses. Typically, how well does your dairy meet your annual financial goals for in each of the last five years (10 pts)?

- a. Mostly Met (1 pt)
- b. Always Met (5 pt)
- c. Mostly Exceeded (7 pt)
- d. Far Exceeded or I don't have annual financial goals for my farm (10 pt)

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#### 3.4 SUSTAINABILITY INDICATORS

NONE: Farmers don't have obligations for tracking/review of operations that could be crafted into a context-based indicator.

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