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SUPPORTING SOUTH AFRICAN GROWERS

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BerriesZA Research Framework

R&D Working Group Document

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This document presents the finalized research framework for BerriesZA, outlining the comprehensive approach to guide research initiatives from 2025 onward. This framework aligns with BerriesZA's commitment to fostering a sustainable, resilient, and globally competitive South African berry industry.

1. Introduction

The introduction establishes the purpose and vision of the BerriesZA Research Framework, setting the stage for long-term research planning. This section emphasizes BerriesZA's commitment to fostering sustainability, resilience, and global competitiveness within the South African berry industry. It outlines the scope and objectives of the framework, designed to address both current industry challenges and future growth opportunities.

- **Purpose**: A comprehensive research framework that will guide BerriesZA's research initiatives for the next 5 to 10 years. This framework aims to enhance sustainability, resilience, market access, and the overall competitiveness of the South African blueberry industry.
- **Scope**: The document outlines our research philosophy, timelines, types of research, fields of study, long-term goals, research partnerships, funding objectives, organizational structure, and research calendar.

2. Research Philosophy

This section describes the guiding philosophy behind BerriesZA's research initiatives. It articulates the organization's mission, vision, and core principles, including relevance, innovation, sustainability, and collaboration. These principles ensure that all research efforts are closely aligned with the practical needs of the industry, prioritize innovative solutions, and promote environmentally sustainable practices. This philosophy underpins every aspect of the framework, supporting both immediate and long-term industry goals.

- **Vision**: To lead the South African berry industry towards sustainability and global competitiveness by fostering research that is innovative, applied, and aligned with industry needs.
- **Mission**: To conduct research that addresses the immediate and long-term challenges faced by our growers, ensuring high-quality, low-residue, and market-preferred products.
- **Core Principles**:

- **Relevance**: Focus on research that directly benefits growers in terms of productivity, quality, and market access.
- **Innovation**: Prioritize research that introduces new techniques, technologies, and practices.
- **Sustainability**: Ensure that research contributes to the long-term environmental and economic sustainability of the industry.
- **Collaboration**: Work closely with universities, research institutions, and industry experts to leverage the best knowledge and resources.

3. Industry Goals

In this section, BerriesZA articulates its goals for the industry, focusing on sustainability, global competitiveness, and leadership in innovation. This vision sets ambitious targets for transitioning the industry toward more environmentally conscious practices, strengthening its market position, and positioning BerriesZA as a research leader in the berry sector. These goals guide the research framework's direction and ensure that each initiative contributes to a sustainable and competitive future for the industry.

- **Short-Term Goals (1-2 Years)**: Address urgent industry challenges, such as pest and disease management, phytosanitary issues, crop production efficiency, and immediate market access barriers.
- **Mid-Term Goals (3-5 Years)**: Develop and implement new practices for environmentally supportive, low residue & efficient production, improved post-harvest quality, and enhanced market access (phytosanitory certification).
- **Long-Term Goals (5-10 Years)**: Transition towards environmentally supportive and low-residue practices, establish BerriesZA as a global leader in berry research and sustainability.
- **Global Competitiveness**: Strengthen market access and brand recognition for South African berries on the global stage, supported by constant excellent quality berries with exceptional shelf life.
- **Environmental Sustainability**: Transition towards environmentally supportive and low-residue practices.
- **Innovation Leadership**: Position BerriesZA as a leader in berry research and innovation.

4. Types of Research

This section categorizes the types of research that BerriesZA prioritizes, including applied, basic, and market research. Each type addresses different industry needs, from practical solutions to fundamental scientific understanding, with a particular focus on areas like crop protection, production, and market access. By distinguishing between these types of research, BerriesZA can tailor its approach to effectively meet the broad needs of the berry industry.

- **Applied Research**: Focus on solving practical, immediate problems faced by growers, such as pest and disease management, irrigation management, nutrition management and post-harvest handling.
- **Basic Research**: Investigate fundamental aspects of berry physiology/quality, genetics, and bioecology of pests and diseases to build a deeper understanding that can inform future applied research.
- **Market Research**: Analyse global market trends, consumer preferences, and trade barriers to enhance market access and competitiveness.

5. Fields of Research

This section outlines the specific fields within the berry industry that BerriesZA's research initiatives cover, such as crop protection, crop production, market access, post-harvest management, and sustainability. Each field represents a key area where research can drive industry improvements, from boosting yield and quality to enhancing environmental sustainability. By targeting these fields, BerriesZA ensures that research efforts address all aspects of berry production and market readiness.

- **Crop Protection**: Integrated pest and disease management, pest and disease resistance, and reducing chemical residues/synthetic inputs, technology
- **Crop Production**: Improving yields and optimizing fertilization, technology, water efficiency, energy efficiency
- **Market Access**: Understanding and overcoming barriers to export, compliance with international standards, and exploring new markets.
- **Post-Harvest**: Extending shelf life, improving fruit quality, and reducing post-harvest losses.
- **Sustainability and Regenerative Practices**: Researching environmentally supportive and low-residue practices, soil health, water conservation, and reducing carbon footprint.

6. Research Partnerships and Execution

This section highlights the importance of research partnerships and collaboration for effective project execution. By working with universities, private contractors, and in-house researchers, BerriesZA leverages a range of expertise to address the berry industry's most pressing challenges. The section also outlines possible structures for project teams, ensuring that each research area is supported by the appropriate knowledge and resources.

- **University Collaborations**: Leverage the expertise and resources of South African universities by funding student research, secondments, and joint projects.
- **Private Contractors**: Engage specialized research organizations for targeted studies that require specific expertise or resources.
- **In-House Research**: Consider employing dedicated researchers and technicians within BerriesZA or seconding staff to universities to ensure focus on priority areas.

International & national collaboration: Leverage expertise and resources from international collaboration and also between South African blueberry groups to address research questions.

7. Funding Objectives

The funding objectives section provides a roadmap for allocating financial resources across BerriesZA's research priorities. This section emphasizes the importance of supporting critical areas such as crop protection, production efficiency, post-harvest quality, and market access. By aligning funding schedules with research needs, BerriesZA can ensure that resources are deployed effectively to achieve impactful results.

- **Primary Focus Areas**:
  - **Crop Protection**: Allocate funds to projects that develop sustainable pest and disease management practices.
  - **Crop Production**: Invest in research to optimize production techniques and improve yields.
  - **Post-Harvest**: Prioritize funding for studies that enhance fruit quality and reduce post-harvest losses.
  - **Market Access**: Support research that facilitates compliance with export standards and opens new markets.

- **Funding Schedule**: Align with the research cycle, ensuring funds are allocated in line with industry needs and academic schedules.

8. Organizational Structure

This section outlines the framework for BerriesZA's R&D working group, which will coordinate and oversee research initiatives across key areas in the berry industry. This structure ensures that each priority research area—Crop Protection, Crop Production, Post-Harvest, and Market Access—is represented within a single, collaborative group. Regular meetings scheduled throughout the year provide dedicated time for gap analysis, proposal evaluation, funding decisions, and progress reviews, enabling the group to guide and adapt research efforts effectively as the industry's needs evolve.

- **R&D Working Group Structure**:
  - Form a single comprehensive working group with representatives from each key research area: Crop Protection, Crop Production, Post-Harvest, Market Access.
- **Meetings**:
  - **Frequency**: January-February Meeting, May-Jun Meeting, October and November Meetings for R&D working group.
  - **Agenda**: Meetings will focus on focus on gap analysis, proposal evaluation, funding allocation, and progress reviews based on the research cycle.

9. Transferring Research to Growers

This section outlines a comprehensive approach to ensure the seamless transfer of knowledge from research funding to practical application on farms, enabling growers to benefit directly from the research initiatives.

- **Funding and Project Selection:**
  - **Focused Funding Allocation:** Projects should be selected and funded based on their alignment with BerriesZA's core research objectives, prioritizing those that provide practical solutions for immediate grower needs. Emphasis should be placed on projects that address market access, crop protection, production efficiency, and sustainability.
  - **Clear Outcome Expectations:** Funded projects should define clear, actionable outcomes that include practical applications and recommendations for growers. This should ensure that researchers focus on delivering results that are directly relevant to industry challenges.
- **Collaboration with Industry Experts:**
  - **Partnership with Technical Personnel:** BerriesZA should collaborate with technical personnel from various berry groups and agronomists who specialize in berry crops. These professionals should help translate scientific findings into farm-level practices and offer tailored recommendations.
  - **Grower-Led Input and Feedback:** BerriesZA should regularly gather input from grower advisory boards or representatives on priority topics and challenges. This input should shape research objectives and project selection, ensuring that research aligns with the day-to-day realities and constraints of berry production.
- **Simplified Research Communication:**
  - **Plain Language Summaries:** Researchers should be required to produce summaries in clear, straightforward language. These summaries should focus on the practical implications and immediate applications of the research findings for growers.

  - **Visual Aids and Demonstrations:** Research reports should be supplemented with visual aids, infographics, and demonstration videos. This could include step-by-step guides, recommended practices, and visual results from pilot studies or field trials.

- **Regular and Accessible Updates:**

  - **Seasonal Bulletins and Technical Updates:** BerriesZA should distribute regular, concise bulletins providing updates on ongoing research projects, preliminary findings, and emerging best practices. Each update should be timed with the relevant growing season stage to maximize applicability.
  - **Field Days and On-Farm Demonstrations:** BerriesZA should host field days where researchers and extension specialists demonstrate new techniques, technologies, and best practices in real-life farm settings. This should give growers the opportunity to observe, ask questions, and understand how research findings apply to their operations.

- **Digital Platforms for Wider Access:**

  - **Online Knowledge Portal:** BerriesZA should develop an accessible, centralized portal where growers can access research summaries, best practice guides, and technical resources at any time. The portal should include an FAQ section, addressing common questions about research outcomes and applications.
  - **Webinars and Interactive Sessions:** BerriesZA should host live and recorded webinars that walk growers through key findings and their practical applications. These sessions should allow growers to engage directly with researchers and industry experts, fostering a more interactive learning experience.

- **Continuous Feedback Loop and Impact Assessment:**

  - **Feedback Collection:** After communicating new findings, BerriesZA should gather feedback from growers on the clarity, usefulness, and applicability of the information. This feedback should help refine communication methods and better address grower needs.
  - **Measure Uptake and Impact:** BerriesZA should track the adoption of recommended practices and assess their impact on grower productivity and profitability. This data should guide future funding decisions and help fine-tune research directions to ensure continuous improvement in the transfer of knowledge.

By following this approach, BerriesZA will ensure that research initiatives not only address critical industry challenges but also reach growers in a way that is clear, actionable, and beneficial to their operations. Through ongoing communication, collaboration, and feedback, research will be translated from scientific findings into practical, field-ready applications that enhance the resilience and competitiveness of the South African berry industry.

9. Timeframes

The timeframe section provides a structured schedule for the research cycle, aligning BerriesZA's research initiatives with the academic and industry calendars. This section enables effective planning and execution of research projects across key areas. By breaking down the research cycle into clear phases, this section ensures that each research stage—from planning to review—happens at the most relevant time for both researchers and growers.

- **Research Cycle**: Align research initiatives with both the academic and industry calendars:
  - **January-February**: Finalization and submission of the BerriesZA budget. Gap analysis and planning for the following research year.
  - **March-April**: Call for research proposals and final reports and early-season research initiation.
  - **May:** Proposal presentations by researchers, proposal evaluation, final report evaluation.
  - **June**: Finalization of funding decisions for the following year. Inform researchers of funding decisions.
  - **October**: Call for progress reports, call for project amendments and extensions and 2nd call for research proposals for the following year.
  - **November**: Progress report review, proposal presentations by researchers, evaluation of 2nd call research proposals. Inform researchers of funding decisions. Reflection on research outcomes and adjustments for ongoing projects. Finalize the research plan for the new year.

10. Research Objectives for Project Selection and Funding

This section defines the core priorities that will guide BerriesZA's research initiatives to ensure alignment with industry needs and strategic goals. Based on input from the strategic plan, survey insights, and overarching framework goals, these objectives are developed by the BerriesZA R&D Working Group to address both immediate and long-term challenges. Through a structured process that includes input from growers, researchers, and stakeholders, research questions are categorized into short-, mid-, and long-term priorities. These objectives support projects that expand market access, enhance crop protection, optimize production practices, promote sustainable farming, foster collaborative research, and increase data-driven research capabilities. This focused approach ensures that each project selected and funded contributes meaningfully to the resilience, sustainability, and global competitiveness of the South African berry industry.

This is based on the strategic plan, survey insights, and framework goals – conducted and developed by the BerriesZA R&D Working Group.

- **Process**:
  - Solicit input from growers, researchers, and industry stakeholders.
  - Categorize research questions into short-term, mid-term, and long-term priorities.
- **Objectives:**
  - Expand Market Access: Support studies that address phytosanitary compliance, trade regulations, and post-harvest quality improvements to bolster export readiness and global market penetration.
  - Enhance Crop Protection: Develop innovative, sustainable pest and disease management strategies that mitigate yield loss, reduce chemical use, and ensure compliance with international phytosanitary standards.
  - Optimize Production Practices: Conduct research focused on efficient use of resources such as water and fertilizers to improve yields and lower production costs, tailored to South African growing conditions.

- Promote Sustainable Farming Practices: Investigate environmentally supportive and low-residue practices to improve soil health, water efficiency, and overall sustainability within berry production.
- Foster Collaborative Research: Engage in multidisciplinary projects that connect growers, researchers, and international experts, ensuring research outcomes are relevant, applied, and capable of addressing real-world challenges.
- Increase Data-Driven Research Capability: Invest in digital tools and data-sharing infrastructures that enhance research efficiency, facilitate regulatory compliance, and enable predictive analysis for future industry challenges.

These objectives are designed to strategically guide project selection and funding for BerriesZA, addressing both current needs and future industry resilience.

11. Funding Schedule

The funding schedule section provides a timeline for submitting and allocating research funds, aligning financial planning with the research calendar. By establishing a clear funding timeline, BerriesZA can ensure that resources are available to support both ongoing projects and new initiatives, allowing for flexibility to address emerging industry needs.

- **Budget Submission**: Ensure that the budget is submitted by February each year to align with the BerriesZA financial year end and research calendar.
- **Funding Allocation**: Distribute funds in a way that supports both ongoing and new research initiatives, with flexibility to adapt to emerging challenges.

Terms of Reference for R&D Working Group Members

This section outlines how members are selected, their roles, and the policies for their rotation. It ensures that the group remains dynamic, diverse, and effective in achieving its research objectives.

1. Selection Criteria

1. **Expertise and Experience**:
   - Members should have relevant experience and expertise in one or more key areas of research such as crop protection, crop production, post-harvest, market access, or sustainability.
   - Preference will be given to individuals with a proven track record in agricultural research, industry experience, or academic credentials in related fields.
2. **Stakeholder Representation**:
   - Ensure representation from various stakeholders including blueberry growers, researchers from universities, industry experts, and agronomists.
   - The composition should reflect the diversity of the industry and encompass different geographical regions if applicable.
3. **Commitment and Availability**:
   - Members must demonstrate a commitment to attending meetings, participating actively in discussions, and contributing to research initiatives.

2. Roles and Responsibilities

1. **General Duties**:
   - Attend and actively participate in meetings and discussions.
   - Contribute to the development and review of research proposals and initiatives.
   - Provide insights and feedback based on expertise and experience.
2. **Specific Duties**:
   - **Chairperson**: Facilitate meetings, ensure adherence to the agenda, and represent the group in external communications.
   - **Secretary**: Record meeting minutes, manage documentation, and coordinate logistics.
3. **Ethics and Conduct**:
   - Adhere to ethical standards in research and communication.
   - Ensure transparency, accountability, and confidentiality as required.
   - Resolve conflicts of interest and disclose any potential biases.

3. Term and Rotation Policy

1. **Term Duration**:
   - Members will serve a term of **three years**.
2. **Rotation and Reappointment**:
   - At the end of each three-year term, members may be reappointed or replaced based on their willingness, continued relevance, and the evolving needs of the research group.
   - A review will be conducted to assess the contribution of each member, with feedback collected from other members and stakeholders.
3. **Transition and Succession**:
   - A transitional period of **three months** before the end of a term will be used to identify and onboard new members, ensuring continuity and minimal disruption.
   - Outgoing members will assist in the transition process, including providing briefings and handovers to new members.
4. **Vacancies and Mid-Term Changes**:
   - In the event of a vacancy due to resignation or other reasons, a replacement will be selected following the same process as for new appointments.
   - Mid-term changes will be addressed promptly to maintain the functionality and effectiveness of the research group.

4. Review and Amendments

1. **Review Process**:
   - The Terms of Reference will be reviewed annually to ensure they remain relevant and effective.
   - Recommendations for amendments can be proposed by any member and will be discussed and approved by the research group and BerriesZA Board.
2. **Approval and Amendments**:
   - Any changes to the Terms of Reference must be approved by the BerriesZA Board.

Appendix A: BerriesZA Strategic Research Plan Overview (2024-2025) – Conducted on 28 Aug 2024 @ Six 33 Produce

The BerriesZA Strategic Research Plan outlines long-term goals and priorities to foster sustainability, resilience, and market competitiveness. The plan's primary objectives are to address core industry challenges and position the South African berry industry as a global leader in sustainable and innovative agricultural practices.

Core Strategic Priorities:

- **Market Competitiveness:** Strengthen market access and brand recognition for South African berries globally.
- **Sustainability:** Transition towards eco-friendly, resource-efficient, and low-residue practices.
- **Resilience:** Develop crop protection methods to withstand climate change, phytosanitary issues, and shifting legislation.
- **Innovation Leadership:** Position BerriesZA as a leader in applied and transformative research in berry agriculture.

SWOT Summary:

- **Strengths:** Strong collaboration network, focus on industry-relevant R&D, and partnerships with academic institutions.
- **Weaknesses:** Limited funding, slow technology transfer, and IP sensitivity.
- **Opportunities:** Adoption of new technologies, increasing demand for sustainable produce, and potential for new market access.
- **Threats:** Phytosanitary barriers, legislative changes, and climate variability.

The strategic plan further emphasizes the need for collaborative, multidisciplinary projects that address immediate grower needs, prepare for future market demands, and enhance BerriesZA's research capabilities.

Appendix B: 2024/2025 Industry Research Survey Results – Conducted in Aug 2024

The industry survey identified key research needs among South African berry growers, reflecting immediate concerns and priorities in the following areas:

- **Market Access and Phytosanitary Compliance:** Need for support in overcoming export barriers, understanding trade requirements, and compliance with international standards.
- **Pest and Disease Management:** High demand for actionable, applied research addressing emerging pests and diseases that impact crop yield and quality.
- **Production Efficiency:** Interest in research on irrigation management, fertilization optimization, and cost-effective production practices tailored to local conditions.
- **Sustainability:** Increased focus on soil health, water conservation, and practices that reduce environmental impact, aligning with broader consumer trends toward sustainable products.

These insights guide immediate research prioritization, particularly emphasizing market readiness, pest management, and production techniques to support industry competitiveness.