Strengthening Northern Australia's horticultural sector through assessing protected cropping (PC) value chain linkages and pathways for adoption. IMPACT PATHWAY

CRITICAL ISSUES

What are the current issues or opportunities in the Australian tropics that this project will address?

Issues 1:

- Domestic and potential export markets opportunities demanding **supply assurance** of **high quality** for **extended periods.**
- **Vegetable and fruit export value chains can be strengthened by supporting industry with PC knowledge** (e.g. cost-effective technologies that address climate variability; new commodities; high productivity).

Issue 2:

- Limited information and understanding among growers and value-chain actors about **PC opportunities and constraints** (including environmental, technological, economic, marketing, and social aspects) that are region-specific in the tropics.

Issues 3:

- Value chain actors as well as organisations assisting with resources will benefit from having a better understanding of the **vision for PC uptake in the tropics** and the **changes that are required** to support adoption.
- **A roadmap of potential pathways for increased benefits to farmers through PC adoption** will provide current and new growers tangible steps that can be taken and identify ways that northern Australia's vegetable and fruit export value chains can be strengthened.

INPUTS

What are the resources available for this project?
(E.g. capability, funding, time, etc.)

- Capability with PC systems for warm climatic regions from current and past R&D in north QLD and warm regions overseas.
- Recent PC gap analyses and economic assessment of technologies for the Australian tropics; a review on PC feasibility in north WA; industry PC network in NT; north QLD grower reports on PC prepared as part of their industry study programs.
- Team members already providing support to the emerging industry in the tropics, in collaboration with users and PC input suppliers.
- History of networking and collaboration with PC industry and more recently across stakeholders in QLD, NT and WA.
- Vast information, data and visuals from current and previous R&D as well as from PC industry.
- Knowledge about sea freight transport challenges and opportunities in northern Australia and with export-related project linked to PC.
- A PC demonstration and R&D site available to the industry to be completed in north QLD (late 2019).
- Existing network with key domestic and overseas PC industry stakeholders willing to assist organising a study tour so that Australian stakeholders can visit PC industries in regions with similar warm climatic constraints. Involved previously in similar study tours.
- Project team members in-kind, cash contribution, time.
- CRCNA funding.

ACTIVITIES

What are the things that will be done in this project?
(See proposal document for details)

Activity 1: **Project inception meeting** to review and agree on monitoring and evaluation and communication plans.

Activity 2: **Develop, with key industry partners, region-specific potential pathways for PC adoption (with a focus on QLD; and broader considerations for WA and NT) via the sub-activities listed below.**

- A2.1 Literature review.
- A2.2 Collation of expert knowledge.
- A2.3 Participatory meetings.
- A2.4 Presentations and symposia.
- A2.5 Visits to demonstration site (QLD).
- A2.6 Industry study tour (Mexico).
- A2.7 Semi-structured interviews and requests for feedback.
- A2.8 Sea freight transport analysis.
- A2.9 Compilation of all information into adoption pathway report and visual diagrams.

Activity 3: **Development of additional written and visual outputs to support early PC adopters**

- A3.1 Development of case studies.
- A3.2 Production of short videos.

OUTPUTS

What will we produce in this project?
(See proposal document for details. Key outputs in bold)

Output 1: Project monitoring and evaluation and communication plans.

Output 2: Draft spheres of influence diagram for outputs.

Output 3: List of critical information on opportunities and constraints to PC adoption to be gathered from review of secondary data.

Output 4: Document with list of questions that guide semi-structured interviews.

Output 5: Presentations to industry stakeholders and documented information gathered from participatory meetings and farm visits.

Output 6: Presentations and documented information gathered from participation at conference and symposia events.

Output 7: Crop production data and information with visuals from crops at PC commercial and demonstration sites.

Output 8: Comprehensive illustrated industry PC study tour report.

Output 9: Situation analysis of north Queensland's sea-freighted export supply chain for horticultural produce.

Output 10: Final report with region-specific potential pathways for PC adoption. End-of-project presentations.

Output 11: Four case-study short communications from PC growers across the tropics.

Output 12: Two short videos as communication materials and general guidelines for adopting PC in warm environments.

OUTCOMES

Within scope of this project — *Outside scope of this project (potential outcomes for future projects)*

Short-term (within lifetime of proposed project)

Longer-term for Northern Australia (> 6-10 years)

For growers and cropping industry value chain actors engaged in the CRCNA project:

- Have **increased awareness, understanding**, and **knowledge** about the potential opportunities (e.g. innovative technologies and agronomic practices, export markets) and challenges for adopting PC in key regions of Northern Australia.
- Have increased **interest (motivation)** and **enhanced skills** to adapt PC practices and improve value chain efficiencies.
- Are beginning to **engage** with each other to identify ways to facilitate the adoption of PC in the key regions of Northern Australia.
- Have **contributed to articulating a vision** of the PC industry in the Australian tropics and a roadmap and pathway for adoption in the key regions of Northern Australia.
- Have a better **recognition** of the value of R&D in enhancing understanding of the whole value chain for PC in Northern Australia.

For R&D organisations:

- Have an **increased knowledge** of PC opportunities and challenges in northern Australia and **improved understanding** of the role they can have in supporting its adoption.

Longer term outcomes for Northern Australia:

- Strengthen networking among industry stakeholders with regional presence.
- Sound business investments (financially and environmentally) are supported by early awareness and knowledge provided to early adopters.
- Export opportunities are better supported with the availability and knowledge about cost-effective technologies that assure supply commitments.
- Support an increased adoption of new and transformational production systems that contribute to the long term sustainability of the vegetable industry.

Longer term outcomes for Northern Australia CRCNA-specific:

- Contributed to remove barriers and improved supply and value chains for new and existing northern agricultural industries
- Improved supply chain efficiencies
- Increased investment
- Increased gross domestic product (GDP)
- Generation of new jobs and skills to assist population growth

Contribution to IMPACT

Changes in the economy, investment, employment, markets, skilled population and wellbeing status of beneficiaries

ASSUMPTIONS: Cost effective PC technologies can be developed and adopted by industry in the Australian tropics if industry stakeholders better understand the current technology options and challenges. By mitigating climate variability, PC technologies can support value chains of domestic markets as well as current and future export opportunities. The interest in PC technologies is arising from different positions within value chains. Expansion of PC will occur in concurrence with increases of several other efficiencies within value chains (E.g. export opportunities; market access achievements; produce transport logistics and infrastructure).