

SEARCH CRITERIA

Model	Model C: Technological Development Model
Industry	Fruit and vegetable
Focus/Level	Industry
Purpose	Testing available knowledge, Creating new knowledge
Outcomes	Development of a management practice, development of a decision support system
Special Interest Groups	Other
Design and Implementation	Designed and managed by researchers/experts

1. PROJECT TITLE:

Yarwun Targinnie Sustainability Project

2. FUNDERS:

Primarily funded by National Heritage Trust. In kind Central Queensland University (CQU), Department of Primary Industries, Rockhampton (DPI) and Southern Pacific Petroleum provided support.

3. PROVIDERS:

Centre for Environmental Management, Central Queensland University has provided the employment framework and support for the YTSP Project Officer. Department of Primary Industries provided a Snr Horticulture Extension Officer for the project. Yarwun-Targinnie Fruit and Vegetable Growers Association Inc were responsible for acquiring funding for the project (with assistance from ImpaxSIA Consulting) and contributed to both the management and ongoing field activities for this project (in particular individual growers provided sites and assistance). Southern Pacific Petroleum provided a vehicle and associated operating costs, a computer, contributed to project management and made data available. ImpaxSIA Consulting contributed to project management and design.

3. KEY CONTACTS:

Dr Alistair Melzer, Director of Centre for Environmental Management, Central Queensland University. Garry Fullelove, Department of Primary Industries, Yarwun Targinnie Fruit and Vegetable Growers Association Inc.

4. INDUSTRY/ISSUE/GEOGRAPHY:

The Yarwun-Targinnie horticultural lies about 20km northwest of Gladstone. Central Queensland commercial fruit and vegetable production has been associated with the Yarwun-Targinnie area for over 80 years. This project was aimed at developing best practises for horticulture in the Yarwun-Targinnie district – specifically trialling model farm practises while maintaining economic viability. The impacts from horticulture on the surrounding ecosystems and waterways were also examined to pinpoint improvements that could be implemented to increase environmental sustainability over the longer term. Working with local industry to ensure that horticulture remained a viable industry in the area was an objective.

5. PROJECT CONTEXT:

Decreasing agricultural effects such as salt intrusion, erosion, pesticide use and other pollutants, improving the quality of soil and water and conserving water and nutrients on farm properties are nationwide objectives. Working to foster these ecological and natural heritage values at a regional level was identified as a primary method to bring these practises into being. Awareness programmes such as regular meetings, newsletters and public forums facilitated this process.

The Yarwun Targinnie Sustainability Project was undertaken to trial model farm practises to demonstrate to other property owners best practise land and horticultural management while maintaining economic viability. Five key sustainability issues were addressed: long term profitability; good financial and agronomic skills; viable rural communities; minimal off- site impacts; conservation and enhancement of natural resources. Links between local industry that may actively impact on the ecology and heritage values of the region and the Fruitgrowers were established. The information gained from this project contributed to recommendations for trailing modified farms.

6. PROJECT NICHE (SPECIFIC OBJECTIVES):

The project niche has been identified working directly with farmers to trial best practises. Value adding for other such initiatives lie primarily within the project outputs. At the completion of this project a Manual of Sustainable Horticultural Practises (DPI, Rockhampton) was distributed to a large array of people including Yarwun Targinnie Fruit and Vegetable Growers Association Inc, The Yarwun Targinnie Sustainability Group, individual growers in the area as well as distributed through DPI and via Fruitgrower newsletters and made available through the CQU library. Furthermore a conceptual model to describe the major influences on the "sustainability" of the Yarwun-Targinnie Horticultural Industry was developed and made available via similar channels. The project had application to the broader regional horticultural industry.

7. PHILOSOPHY/APPROACH:

Working directly with farmers to trial and develop best practises was a primary approach. Sustainable horticulture in the Yarwun/Targinnie area was modelled upon five underlying components: long term profitability; good financial and agronomic skills; viable rural communities; minimal off- site impacts; conservation and enhancement of natural resources. Many factors and farm management options can impact upon sustainability, however four issues were selected as focus topics for field activities of this project based upon their impact to sustainability, capacity for change over the short time frame of the project, and the ability to implement objective management techniques. These included Integrated Pest Management, Irrigation Management, Spray Application Management and Crop Nutrition Management.

Holistic Catchment Management was an important component of the project. Assessment of ecological natural heritage values and fostering stakeholder interest in these values was undertaken via biological monitoring by the project officer for farms and creeks (within two sub catchments). Public forums facilitated the delivery of outcomes of this monitoring to the community.

8. RESOURCES, MANAGEMENT AND STAFFING STRUCTURES:

National Heritage Trust provided the bulk of funding for this study over a 2-year period. Educational and Industry organisations provide in kind support. A steering committee made up of Stakeholders within the region and including outside consultant expertise was put into place. An Environmental Monitoring Technical Group was also established. These committees contributed advisory input to set

priorities for project on-farm activities. The Project Officer for the position was a member of staff at the Centre for Environmental Management, Central Queensland University, who were contracted to undertake the project by the Yarwun Targinnie Fruit and Vegetable Growers Association Inc.

9. PROCESS/METHODS USED:

The project officer was trained and practiced in all monitoring methodology as well as having career experience in working with community and agricultural groups and landowners. A steering group for the project was established early in the project to provide direction and advice for design and management.

Specific monitoring conducted by the project officer included

On farm Activities: Seven sites were chosen - one standard and one model practises pawpaw farm, one standard and one model practises mango farm, one standard farm associated bush site and two model farm associated bush sites. On-farm monitoring by the project officer included Ground active and litter associated invertebrates (pitfall traps) and Arboreal invertebrates (bagging of tree branches), to assess biodiversity and indicator species present Dam health (physico/chemical assessment, macroinvertebrate sampling, macrophyte identification) and Bird monitoring was also conducted.

Creek monitoring Activities: An audit of 2 creeks (physico/chemical parameters, riparian features, macrophytes and birds (list for each sub catchment) was undertaken to assess off-farm ecological values.

Community, stakeholder and farm related activities included public launch and forums; establishment of technical and advisory groups; field days (Integrated Pest Management, Irrigation Management day, Spray Application Management, Crop Nutrition Management); regular project progress meetings; workshop and grower meetings; discussion groups; newsletters and flyers; project signage and info, developing horticultural benchmarks; on farm consultancy; trailing on-farm water monitoring equipment; developing industry policy (SPP - Rapid Response Protocol); training provisions; presentation of project results to community at conferences.

10. IMPACTS TO DATE (AND EVALUATION APPROACHES USED):

(looking at reactions and change in knowledge, attitudes, skills and practise)

Evaluations techniques were by means of feedback from community via the final project forum and tracking of participation in different activities and events throughout the project. The response of the farming community initially and throughout the duration of the project was high. The fact that the Yarwun Targinnie Fruit and Vegetable Growers Association Inc initiated the project and application for funding was obtained by them was reflected in constant proactive attitudes. Field related activities promoted educational, training and increased knowledge in best practises. The environmental Technical Monitoring Group that was established early in the project provided feedback on skills and practises acquired. Outcomes identified that most of the on-farm best practices were already in place and farmers had a proactive attitude for economically viable changes in their farming to promote best practise. Feedback on the Manual of Sustainable Horticultural Practises (DPI) was enthusiastic and widespread.

11. EFFECTIVENESS:

Learning support throughout the community was high for reasons listed above.

12. PROJECT DOCUMENTATION AVAILABLE:

Project documentation (reports, presentations, outputs etc) can be obtained through the Centre for Environmental Management, Central Queensland University or the Department of Primary Industries at this time.

13. ISSUES:

Ongoing problems were experienced with the trailed moisture detection equipment and this was continually addressed and resolved by the DPI officer responsible. Additional unforeseen costs associated with monitoring in the way of extended laboratory work caused additional budget overruns on in kind commitments for Central Queensland University. The tension between the agricultural community and adjacent industry (in particular Southern Pacific Petroleum) was constant throughout the project and the delay in procedures initiated by this industry (for example Rapid Response Protocols for residents) aggravated the situation. Furthermore, the degraded socio-economic situation as a consequence of land values due to adjacent industry as well as stress on residents concerned about industry-associated atmospheric influences has since resulted in a government buyout (presently underway) of much of the Targinnie sector. This has compromised the future viability of the fruitgrowing region (e.g. it has been said the local co op will fold without input from Targinnie farms).

14. COMMENTS/CONCLUSIONS:

Biological and agricultural aspects of the project were highly successful as all objectives were accomplished successfully. Working with local community to develop best land management practises while maintaining economic viability and promoting stewardship of ecological and natural heritage values was accomplished. However due to the wider scope of the project, in particular the five recognised underlying components that 'Sustainable horticulture' in the Yarwun/Targinnie area was modelled upon (long term profitability; good financial and agronomic skills; **viable rural communities**; minimal off- site impacts; conservation and enhancement of natural resources), the final outcome was considered less than optimal by both the community and other participants in this project (due to the government buyout of much of the Targinnie region). Despite this, many project outputs (in particular the Manual of Sustainable Horticultural Practises) as well as the unique nature of the project have benefited the wider community as well as providing a case study for other agricultural provinces undergoing similar pressures.

15. REVIEW METHODS:

The above summary was based upon personal experience with the project and internal documentation and is the opinion of the managing bodies for the project (Centre for Environmental Management, Central Queensland University, The Department of Primary Industries and The Yarwun Targinnie Fruit and Vegetable Growers Association).