



## UNILEVER SUSTAINABLE AGRICULTURE PROJECT

“Development & Implementation of an Environmental Management System for Processing Tomatoes”

# PROJECT COMMUNICATION PACK

**30/05/2002**

*This report is confidential and intended solely for the use and information of  
Unilever Australasia, Horticulture Australia & Australian Processing Tomato Growers*



**Unilever Australasia**



**Horticulture Australia**



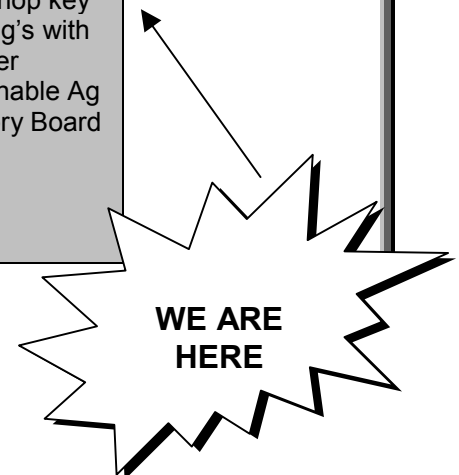
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Summary ...

**PHASE 1 OF THIS PROJECT HAS 5 MILESTONES OVER THE TWO SEASONS; WE ARE JUST COMPLETING MILESTONE 4.5 ...**

KEY PROJECT MILESTONES (PHASE ONE)						
OBJECTIVES	MILESTONE 1 16/10/2000	MILESTONE 2 28/02/2001	MILESTONE 3 1/07/2001	MILESTONE 4 28/02/2002	MILESTONE 4.5 3/06/2002	MILESTONE 5 16/08/2002
Key Content	HRDC Research, Development & Commercialisation agreement signed, voluntary funds received by HRDC, Project Initiated <ul style="list-style-type: none"> <li>□ HRDC Board Approval 1/12/2000</li> <li>□ Research Agreements Signed 21/12/2000</li> </ul>	Year 1 Mid Season Review <ul style="list-style-type: none"> <li>□ Progress on Rampup Phase and 1<sup>st</sup> Season Monitoring Reviewed</li> <li>□ Report on Field Day and Workshop</li> <li>□ Field Activities Reviewed</li> <li>□ Progress towards expected Outputs and Outcomes Reviewed</li> </ul>	Project Review Year 1 with Pilot Project Management Team & Consultative Group <ul style="list-style-type: none"> <li>□ Workshop on 6/06/2001 to review first year Results and Outputs</li> <li>□ Consultative Group Meeting on 7/06/2001 to review results and set directions</li> <li>□ Second year monitoring strategy reviewed and agreed</li> <li>□ Presentation for Unilever Workshop prepared for 11/06/2001</li> </ul>	Year 2 Mid Season Review <ul style="list-style-type: none"> <li>□ Progress on 2<sup>nd</sup> Season Monitoring Reviewed</li> <li>□ Report on 2<sup>nd</sup> Field Day and Workshop</li> <li>□ Major Field Activities Reviewed</li> <li>□ Progress towards expected Outputs and Outcomes Reviewed</li> </ul>	Interim Report on Season Two Data & Project Progress Due <ul style="list-style-type: none"> <li>□ Draft Framework for EMS developed</li> <li>□ Presentation of Progress to Tomato Industry via Tomato Symposium</li> <li>□ Implementation Strategy Discussed with Growers</li> <li>□ Workshop key learning's with Unilever Sustainable Ag Advisory Board</li> </ul>	Final Project Report Due <ul style="list-style-type: none"> <li>□ Framework for EMS developed</li> <li>□ Workshop with growers and Industry Stakeholders</li> <li>□ Implementation Strategy Resolved</li> </ul>



Introduction ...

## **THE AUSTRALIAN PILOT BEGAN AS A RESULT OF A JOINT FUNDING INITIATIVE BETWEEN UNILEVER AUSTRALASIA AND HORTICULTURE AUSTRALIA.**

- Since the 1970's Unilever have been developing agricultural best practice guidelines
- Mid 1990's work began to develop the sustainable agriculture initiative
- 1995 – two studies commissioned
- 1997 – first pilot project commissioned – Vegetables – Peas (UK)
- 1998 – Sustainable Agriculture Steering Group Established
  - 4 Principles of Sustainable Agriculture Developed
  - 10 Indicators of Sustainability Developed
  - Choice of five key crops
- 1999 – Consultative Groups Established and Pilots Commenced
- 2000 – Tomato Pilot in Australia Commences
  - Jan 00 – Scoping Study
  - June 00 – Sustainable Agriculture Workshop – London
  - July 00 – Australian Pilot Commences
  - October 00 – Horticulture Australia Support for Project Confirmed
  - June 01 – First Year Review of Key Learning's & Progress
  - July 01 – Australian Greenhouse Environmental Reviews Commence

**TO UNILEVER, SUSTAINABILITY IS ESSENTIAL TO SECURING THE SUPPLY CHAIN LONG TERM & IN SATISFYING END CONSUMERS & SHAREHOLDERS.**

<b>SUSTAINABLE AGRICULTURE</b>	<b>UNILEVER SUSTAINABILITY PRINCIPLES</b>	<b>SUSTAINABILITY INVOLVES</b>	<b>SUSTAINABILITY DELIVERS</b>
<p><i>Sustainable Agriculture is the use of farming practices and systems which maintain or enhance:</i></p> <ul style="list-style-type: none"> <li>❑ The economic viability of agricultural production;</li> <li>❑ The natural resource base; and</li> <li>❑ Other ecosystems, which are influenced by agricultural activities.</li> </ul> <p><i>Sustainability allows for the provision of current needs without compromise of the ability of future generations to meet their own need.</i></p>	<ul style="list-style-type: none"> <li>❑ Producing crops with high yield and nutritional quality to meet existing and future needs, while keeping resource inputs as low as possible</li> <li>❑ Ensuring that any adverse effects on soil fertility, water and air quality and biodiversity from agricultural activities are minimised and positive contributions are made where possible</li> <li>❑ Optimising the use of renewable resources while minimising the use of non renewable resources</li> <li>❑ Sustainable agriculture should enable local communities to protect and improve their well being and environments</li> </ul>	<ul style="list-style-type: none"> <li>❑ Ensuring the land is managed so as to guarantee ongoing yields of agricultural produce overtime</li> <li>❑ Minimising inputs and costs in terms of fossil fuel, fertilizers, pesticides, herbicides and/or other auxiliaries</li> <li>❑ Ensuring output is economically sustainable &amp; profitable</li> <li>❑ Ensuring environmental impact is reduced</li> <li>❑ Guaranteeing quality &amp; safety of products</li> <li>❑ Being responsive to changing consumer demands</li> <li>❑ Good stewardship - helping protect and improve current resources</li> </ul>	<ul style="list-style-type: none"> <li>❑ Economic stability</li> <li>❑ Environmental enhancement &amp; protection</li> <li>❑ Reduction in Liability &amp; Exposure</li> <li>❑ Product brand differentiation and premium price point opportunities</li> <li>❑ Satisfied multigenerational consumers</li> <li>❑ Strong grower partnerships</li> <li>❑ Satisfied shareholders</li> <li>❑ Life &amp; future success</li> </ul>

**SUSTAINABLE AGRICULTURE AND FUFILLMENT OF THE UNILEVER SUSTAINABILITY PRINCIPLES DEPENDS UPON; 1) RESOLVING ADEQUATE MEASURES (SUSTAINABILITY INDICATORS) TO SENSE AND MONITOR THE STATE OF THE ENVIRONMENT, 2) ESTABLISHING SUSTAINABLE VALUES FOR EACH SUSTAINABILITY INDICATOR, 3) DEVELOPING A HOLISTIC METHOD OF INTEGRATING THE SUSTAINABILITY INDICATORS FOR EACH ENVIRONMENT (THE ECO MAP). THIS ENTAILS THE DEVELOPMENT OF NEW FIELD METHODOLOGY FOR THE UNILEVER PILOT PROJECTS.**

### 3 PILOT PROGRAMS FOR PROCESSING TOMATOES

#### PILOT PROJECT

#### BROAD STRATEGY

#### ANTICIPATED OUTCOMES – Phase 1

##### Australia

##### Brazil

##### California

##### Phase One

- ❑ Partnering with 5 pilot growers who represent the diversity of climate, soil and management techniques for the Australian industry (similar approach employed with other pilots)
- ❑ Selection of sustainable/environmental indices for each of Unilever's sustainability indicator clusters
- ❑ Development of field assessment methods to assess indicators
- ❑ For several indicators including soil fertility & health indicators use native "semi undisturbed" ecosystems as reference sites for comparative interpretation of parameters
- ❑ Monitor indicators and study management practices over 2 initial seasons
- ❑ Use key learning's from monitoring program to fine tune indicator methods and provide a "preliminary" basis for interpretation
- ❑ Rationalise indicators and suggest revised monitoring program suitable for processing farm sustainability assessment
- ❑ Identify indicators where improvement may be required
- ❑ Document best management practices, combining learning's from each pilot project
- ❑ Develop a management system framework

##### Phase Two

- ❑ Develop the BMPs (compliant with ISO 14001) & Training Material
- ❑ Implement BMP's which includes EMS
- ❑ Environmental Indicator Research, employing BMP's to improve environmental performance, monitor change over time

1. Contribute to an outline of Best Management Practices for the sustainable production of processing tomatoes,
2. A processing tomato framework for a BMPs/EMS,
3. Generate preliminary estimates of the environmental impact of current management practices on pilot farms, and indicatively, for the industry,
4. Raise the level of grower awareness about environmental risks and the challenge of sustainable management practices, not only in Australia but also internationally via the parallel Unilever project running in Brazil & California,
5. Provide an EMS framework template for other Horticultural Row Crops and related industries,
6. It is expected the project will have a "spin-off" which contributes to the international and national effort to resolve environmental degradation and sustainable land management systems with a variety of crops.

## THE AUSTRALIAN PILOT RESEARCH STRATEGY – PHASE 1 (2000/2002)

	CATEGORY	DESCRIPTION OF ACTIVITY	KEY LEARNING'S
<b>RAMPUP PHASE</b>	<b>Literature Review</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Review of 340+ references/papers on sustainability, EMS &amp; BMP's for irrigated horticulture</li> <li><input type="checkbox"/> Review methodology for indicator assessment, interpretative thresholds etc</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Limited work done for tomatoes</li> <li><input type="checkbox"/> Conventions for sustainability assessment poorly defined, developed or agreed</li> <li><input type="checkbox"/> Tomato R&amp;D focus on yield &amp; quality</li> </ul>
	<b>Understanding the Natural Resource Base</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Soil survey &amp; land capability assessment</li> <li><input type="checkbox"/> Detailed soil profile descriptions</li> <li><input type="checkbox"/> Benchmark native and paddock soils</li> <li><input type="checkbox"/> Soil chemistry</li> <li><input type="checkbox"/> Develop soil maps, depth to impeding layer, RAW</li> <li><input type="checkbox"/> Geology, ground water review</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Defined the impeding layers to root growth, 1 grower has 40 cm top soil only</li> <li><input type="checkbox"/> Defined Readily Available Water (RAW) for paddock soils, to use in water scheduling</li> <li><input type="checkbox"/> Root systems in furrow to 80 cm</li> </ul>
	<b>Initial Environmental Review</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Develop a checklist for review, covering Unilever 10 sustainability indicator clusters &amp; waste management</li> <li><input type="checkbox"/> Detailed 2 day review of each farm</li> <li><input type="checkbox"/> Report for each grower identifying key learning's and environmental risks</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Up to 33 tonnes soil exported in harvest per farm, range 0.07 to 0.58 t/ha</li> <li><input type="checkbox"/> Calibration of equipment &amp; basis for inputs an area for concern</li> <li><input type="checkbox"/> Limited use of irrigation scheduling</li> <li><input type="checkbox"/> Disposal routes for wastes poorly defined</li> </ul>
<b>MONITORING SYSTEM DEVELOPMENT PHASE</b>	<b>Soil Fertility &amp; Health</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Soil sampling and analysis</li> <li><input type="checkbox"/> Soil mycorrhiza for tomato root systems</li> <li><input type="checkbox"/> Microbial biomass, activity assessments</li> <li><input type="checkbox"/> Earth worm density &amp; mass assessments</li> <li><input type="checkbox"/> Benchmark native and paddock soils</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Variation in microbial activity linked to organic matter, cultivation &amp; pesticides</li> <li><input type="checkbox"/> Mycorrhiza counts low, on some farms absent</li> <li><input type="checkbox"/> Earthworm activity variable, not present on some soils</li> </ul>
	<b>Soil Loss</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Review months soil remains without vegetation cover</li> <li><input type="checkbox"/> Monitor soil export to factory and factory waste management practices</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Typically 8 to 10 months of bare soil (&lt;50% vegetation cover)</li> <li><input type="checkbox"/> Cultivation of wet soil &amp; bed preparation key</li> </ul>
	<b>Nutrients</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Monitor % renewable resources used</li> <li><input type="checkbox"/> Determine nutrient budget – pre-plant fertility, amount applied, amount removed with crop, residual amount, leaching losses etc</li> <li><input type="checkbox"/> Review fertigation practices</li> <li><input type="checkbox"/> Ground water assessments for Quality</li> <li><input type="checkbox"/> Calibration of equipment review</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Zero use of renewable resources, limited use of soil testing, no deep soil tests</li> <li><input type="checkbox"/> Calibration of fertilizer injection equipment an issue</li> <li><input type="checkbox"/> Nutrient balance – No K inputs (300+kg/ha K removed/yr), Low P export – despite high inputs, High N inputs also</li> </ul>
	<b>Pest Management</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Review active ingredients used</li> <li><input type="checkbox"/> Review ecotoxicity &amp; fate potential for chemicals</li> <li><input type="checkbox"/> Review calibration of equipment &amp; point source issues</li> <li><input type="checkbox"/> Study pest pressure, presence of beneficial's throughout crop</li> <li><input type="checkbox"/> Study crop scouting techniques</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Ecotoxicity review underway</li> <li><input type="checkbox"/> Some persistent pesticides found in topsoil, Endosulfan at depth on one property</li> <li><input type="checkbox"/> IPM review indicates beneficial's can build up if pesticide regime allows</li> <li><input type="checkbox"/> Calibration of equip, aircraft drift issues</li> </ul>

## THE AUSTRALIAN PILOT RESEARCH STRATEGY – PHASE 1 (2000/2002) (Continued)

MONITORING SYSTEM DEVELOPMENT PHASE	CATEGORY	DESCRIPTION OF ACTIVITY	KEY LEARNING'S
	<b>Biodiversity</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Reconnaissance biodiversity review of each farm</li> <li><input type="checkbox"/> Literature review, develop indicators &amp; methods</li> <li><input type="checkbox"/> Apply indicator assessment system to each farm</li> <li><input type="checkbox"/> Develop biodiversity enhancement plans with each farm for; Shelter, Biodiversity Enhancement, Ground Water and Surface Water Management</li> <li><input type="checkbox"/> Review effectiveness of biodiversity indicators and revise monitoring program</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Existing vegetation on farms sparse and poorly maintained</li> <li><input type="checkbox"/> Environmental weeds an issue</li> <li><input type="checkbox"/> Trees &amp; understorey important for water balance on farm (water table)</li> <li><input type="checkbox"/> Focus on managing the house – native fauna benefits</li> <li><input type="checkbox"/> Improvements possible without jeopardising significant areas of productive land – e.g. road side enhancement</li> </ul>
	<b>Water Management</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Ground water depth &amp; quality review</li> <li><input type="checkbox"/> Monitor amount of water applied, efficiency of application, timing, placement, frequency</li> <li><input type="checkbox"/> Soil moisture sensors log water availability to 80 cm, weather stations assist in water balance review</li> <li><input type="checkbox"/> Evaluation of drip irrigation designs, products used, efficiency of operation, maintenance</li> <li><input type="checkbox"/> Tail water volume &amp; quality monitored</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Water tables &lt;1.5 m on 3 out of five properties, water table on all properties saline with high chloride. On one furrow property water tables rising 0.5 m/yr</li> <li><input type="checkbox"/> Drip systems “can” be very efficient if well designed and maintained. Several systems reviewed had significant variations in Distribution Uniformity (&lt;80%)</li> <li><input type="checkbox"/> Inefficiency DU &amp; Fertigation = Environmental Pollution &amp; Waste of Fert</li> <li><input type="checkbox"/> Drip systems over watering (every day), wet sub soil and leaching throughout season with some systems</li> <li><input type="checkbox"/> Soil moisture sensors save water</li> </ul>
	<b>Energy</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> AGO reviews</li> <li><input type="checkbox"/> Monitor fuel, power use</li> <li><input type="checkbox"/> Review trash management</li> <li><input type="checkbox"/> Monitor traffic movements, number of cultivations</li> <li><input type="checkbox"/> Consider number and type of machinery used for mixed farming practices</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Wide variation in efficiency of machinery used</li> <li><input type="checkbox"/> Number of traffic movements varies from 33 to 44 for a crop of tomatoes, up to 17 tillage activities</li> <li><input type="checkbox"/> Trash burning destroys OM, perceived disease control benefits un-quantified</li> </ul>
	<b>Product Value</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Monitoring yields on target paddocks &amp; overall</li> <li><input type="checkbox"/> Monitoring SS, Nutritional Value</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Yields from 49 to 154 t/ha monitored</li> <li><input type="checkbox"/> Water management linked to SS</li> </ul>

**WE ARE NOW IN A POSITION TO DEVELOP AND IMPLEMENT AN INTEGRATED MANAGEMENT SYSTEM**

## THE BENEFITS OF THIS EMS FOR THE AUSTRALIAN PROCESSING INDUSTRY GROWERS

Category	Description
Supply Chain Assurance	<ul style="list-style-type: none"> <li>❑ Providing transparent supply chain assurance for Unilever and other processors</li> <li>❑ Enabling traceability of produce and raw materials</li> <li>❑ Enabling substantiation of supply chain statements made by growers/processors/retailers regarding clean and sustainable produce</li> <li>❑ Management of key environmental issues impacting on sustainability – reduction in excessions to ground water table, enhancement of biodiversity, efficient use of inputs</li> <li>❑ Management of consumer and community perceptions relating to land management practices</li> </ul>
Efficiency (Cost Reduction)	<ul style="list-style-type: none"> <li>❑ Improvement in raw material input management (reason, rate, calibration, fate) – use less</li> <li>❑ Introduction &amp; routine assessment of environmental and production performance measures will enable growers to benchmark a range of indicators over time – adopting a continuous improvement review process</li> </ul>
Control	<ul style="list-style-type: none"> <li>❑ Quantification of areas where potential inefficiencies occur – over watering, inefficient irrigation distribution uniformity (DU), fertilizer leaching, spray drift, tail water loss, net drainage impacts on ground water table etc</li> <li>❑ Introduction of selected BMP's to assist growers gain control over inefficiencies</li> </ul>
Profitability	<ul style="list-style-type: none"> <li>❑ Efficiency gains with use of inputs realised as grower (not processor) profit</li> <li>❑ Increased yields from improved understanding and control of farming practices resulting in greater return on inputs (labour, fuels, fertilizer, chemicals, water, capital)</li> <li>❑ Greater longevity in capital realised through improved design (drip systems) and maintenance, reduction in asset depreciation</li> <li>❑ New end products developed and supplied by growers potentially realising greater supply chain profit</li> </ul>
Market Differentiation	<ul style="list-style-type: none"> <li>❑ Whole farm certification – Food Safety, EMS-ISO14001, IPM, etc</li> <li>❑ External recognition for environment and food safety excellence</li> <li>❑ Ability for growers to use this management system and associated external certification for other market sectors</li> </ul>
Presentation (Housekeeping)	<ul style="list-style-type: none"> <li>❑ Presentation is all about the visual aspects of environmental management,</li> <li>❑ Identifying these issues is important as they are the factors that influence external visitor perceptions of your performance – yes your productivity in the field is what really makes the difference, however the visual issues are easily quantified and can be cost effectively managed,</li> <li>❑ Point source issues such as dumping waste oil, boom clean, workshop wastes, leaving old trickle tape in field (ploughing in), old drums and rubbish around farm sheds, chemical storage facilities,</li> <li>❑ These issues present Occupational Health and Safety and in many cases Food Safety risks also – controlling these issues predominately deals with low capital improvements.</li> </ul>

**GIVEN LEARNING'S TO DATE WITH UNILEVER GROWERS AND SEVERAL NON-UNILEVER GROWERS, THE 80:20 RULE APPLIES. 80% OF THE "SUSTAINABILITY" ISSUES ARE NON-CAPITAL RELATED AND 20% MAY IN TIME REQUIRE SOME CAPITAL INVESTMENT.**

Phase 2.1: Developing & Implementing the Management System ...

**FARM MANAGEMENT FOCUS WILL MOST LIKELY INVOLVE TAKING CONTROL OF A RANGE OF ENVIRONMENTAL RISKS. THE SHORT TERM EMPHASIS OF THIS MANAGEMENT SYSTEM WILL RELATE PREDOMINATELY TO NON-CAPITAL ISSUES. THE SYSTEM WILL INVOLVE...**

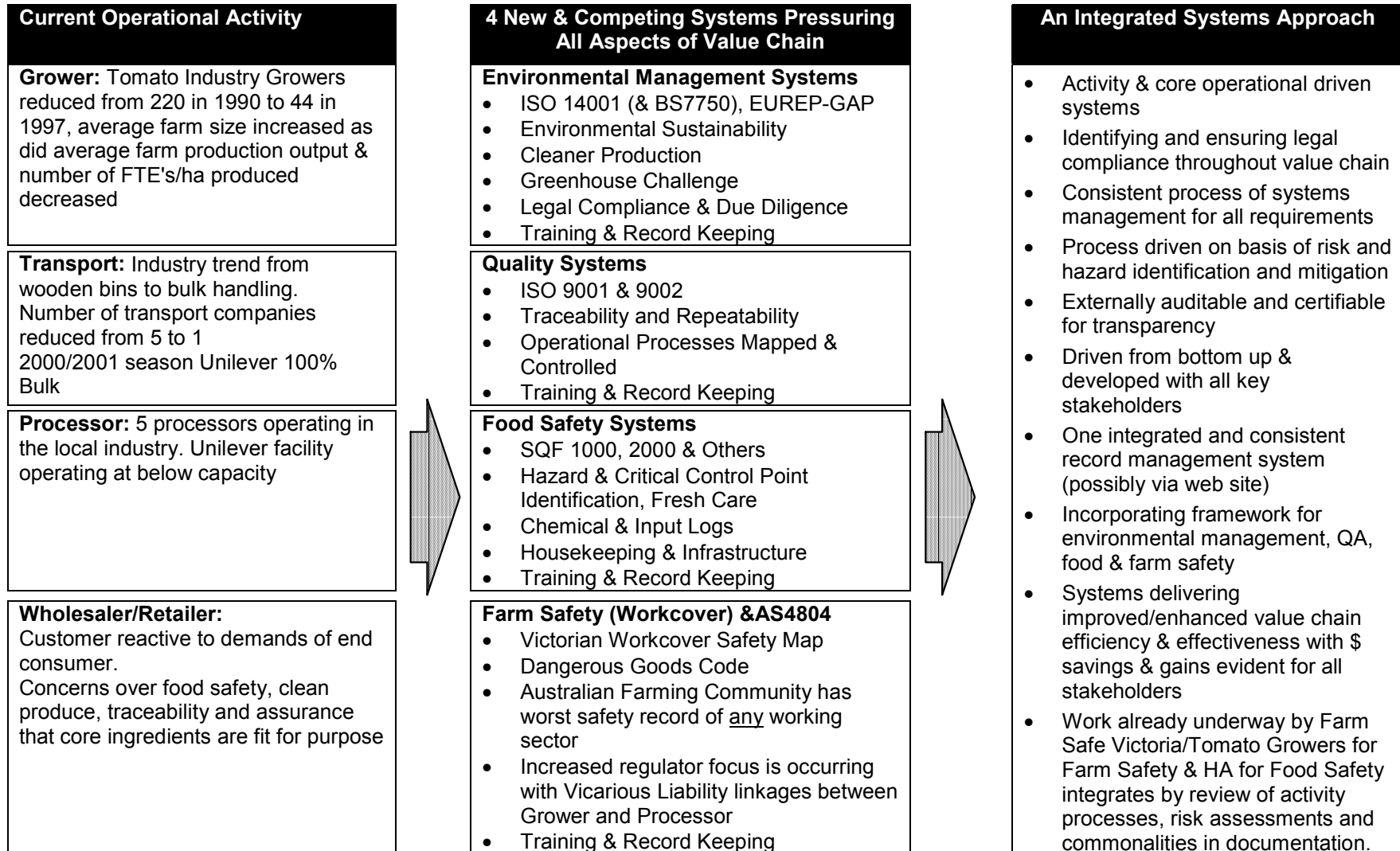
KEY ACTIVITY	CHANGE DRIVER	DESCRIPTION
<b>Attending Workshop in August 2002</b>	<input type="checkbox"/> People <input type="checkbox"/> Awareness	<input type="checkbox"/> The key learning's, experiences and recommendations arising from the two season sustainability review will be workshopped <input type="checkbox"/> A summary report will be available also. Planning for the next phase will also occur at this time
<b>Management System Training</b>	<input type="checkbox"/> People <input type="checkbox"/> Awareness	<input type="checkbox"/> Participate in a case study driven training program over a couple of days in winter <input type="checkbox"/> Unilever's 5 pilot growers will assist by providing their experiences and challenges having already implemented the system
<b>Initial Environmental Review</b>	<input type="checkbox"/> People <input type="checkbox"/> Awareness	<input type="checkbox"/> For growers participating in the AGO Environmental Review most of this work will have been completed. <input type="checkbox"/> For other growers a 1 to 2 day review of farm practices and activities will assist you identify key areas of environmental significance, and assist you in the preparation of your farm environmental monitoring program.
<b>Review of Core Farming Activities &amp; Processes</b>	<input type="checkbox"/> People <input type="checkbox"/> Awareness	<input type="checkbox"/> With our assistance you will next review each activity on farm (the system templates will streamline this process), identify environmental, OH&S (APTRC may help also with OH&S) and food safety risks for your farm <input type="checkbox"/> A summary of key activities, risks and proposed control measures will be drafted using the simple templates provided, these will be graphically presented also
<b>Adopt &amp; Initiate a Monitoring System</b>	<input type="checkbox"/> People <input type="checkbox"/> Awareness <input type="checkbox"/> Capital	<input type="checkbox"/> Select sustainability indicators suitable to key farming activities <input type="checkbox"/> Using the Management system monitoring methods set up the monitoring system <input type="checkbox"/> Install test wells, soil moisture sensors, GPS etc
<b>Adoption of BMP's</b>	<input type="checkbox"/> People <input type="checkbox"/> Awareness <input type="checkbox"/> Capital	<input type="checkbox"/> There are probably already many BMP's in place on your farm, don't throw them away, use them. <input type="checkbox"/> The management system may also offer you some new BMP's based on key learning's for the Australian, Brazil and Californian pilots
<b>EMS Implementation Review</b>	<input type="checkbox"/> People	<input type="checkbox"/> Someone external to the management system implementation process on your farm, checking that all the necessary components are in place <input type="checkbox"/> Now you are ready for external certification – this step is your call and at your cost.

## AT THE SAME TIME AS WE FOCUS ON SUSTAINABILITY IT IS CLEAR THAT INDUSTRY EXPOSURE & CHANGES IN LEGISLATION ARE DRIVING THE NEED FOR ENVIRONMENTAL REFORM IN THE AUSTRALIAN PROCESSING TOMATO INDUSTRY AT ALL LEVELS

Category	ISSUES	IMPLICATIONS & POTENTIAL EXPOSURE
<b>Raw Material Supplier</b>	<ul style="list-style-type: none"> <li>• Use of Agricultural Chemicals &amp; Fertilizers in Field               <ul style="list-style-type: none"> <li>• Effective Instruction</li> <li>• Product Quality &amp; Impurities</li> <li>• Down Stream Effects of Products</li> <li>• Build up and impact of products in food chain</li> </ul> </li> <li>• Snake oils being trialled with end-use impact ill-defined</li> <li>• Seed suppliers               <ul style="list-style-type: none"> <li>• Genetically modified crops &amp; long term implications unclear?</li> <li>• Disease &amp; pest resistance</li> </ul> </li> <li>• Efficacy of raw materials in field in some cases unclear due to inadequate field research and testing</li> </ul>	<ul style="list-style-type: none"> <li>• Raw material suppliers being forced into greater accountability for the end use/environmental fate of their products,</li> <li>• Product contamination and heavy metals accumulating in food chain,</li> <li>• Residues as a consequence of products being traced throughout food and supply chains,</li> <li>• Greater research emphasis into environmentally sound products.</li> </ul>
<b>Growers</b>	<ul style="list-style-type: none"> <li>• On farm use of chemicals &amp; fertilizers (MRL's)</li> <li>• Off site impacts associated with operational activities               <ul style="list-style-type: none"> <li>• Air Quality due to aerial spraying of crops</li> <li>• Stream, Storm Water &amp; Ground Water</li> <li>• Biodiversity decline due to land clearing etc</li> </ul> </li> <li>• Lack systems to identify legal compliance requirements or strategies to gain compliance</li> <li>• Inadequate Environmental Systems to monitor onsite/offsite impacts of cropping practices</li> <li>• Regulators, particularly in NSW, targeting grower groups over off site impacts (down stream effects).</li> <li>• Financiers requiring environmental impact &amp; due diligence guarantee's.</li> </ul>	<ul style="list-style-type: none"> <li>• Regulations relating to offsite impacts of farming activities becoming tighter (lower allowable discharge limits in water + MRL's) for chemicals and nutrients,</li> <li>• Food safety legislation and the power of consumers (end user) will increase, requiring improved management and record systems and external verification,</li> <li>• Farming Activities (Processing Tomato) may become licensable activities in time requiring on farm EMS to demonstrate compliance and sustainable management.</li> </ul>
<b>Food Processor</b>	<ul style="list-style-type: none"> <li>• Food hygiene &amp; food safety concerns - physical, biological &amp; operational</li> <li>• Quality Assurance systems fragmented</li> <li>• Process Waste Management pressure by Regulators</li> <li>• ECO packaging options required to satisfy end user expectations and to ensure full waste resource recovery</li> </ul>	<ul style="list-style-type: none"> <li>• Food safety, QA and Environmental regulations having greater day to day influence on operational activities.</li> <li>• Greater risk and compensation awareness of retailers</li> <li>• Environmental sustainability of processing activities, cleaner production and waste minimisation high priorities</li> </ul>
<b>Consumer</b>	<ul style="list-style-type: none"> <li>• Food safety concerns</li> <li>• Residues in food (heavy metals, chemicals)</li> <li>• Genetically modified food crop issues</li> </ul>	<ul style="list-style-type: none"> <li>• Consumers are expected to demand more effective food safety systems and assurance. Assurance also that raw material inputs are grown in an environmentally sustainable manner.</li> <li>• Consumers expected to respond favourably to ECO labelling and organic/green product solutions.</li> </ul>



**4 SEPARATE SYSTEM REQUIREMENTS ARE APPLYING COMPETING "NEW" PRESSURES ON ALL INDUSTRY STAKEHOLDERS. AN INTEGRATED APPROACH IS REQUIRED PROMOTE MANAGEMENT EFFICIENCY & AVOID DUPLICATION OF EFFORT.**

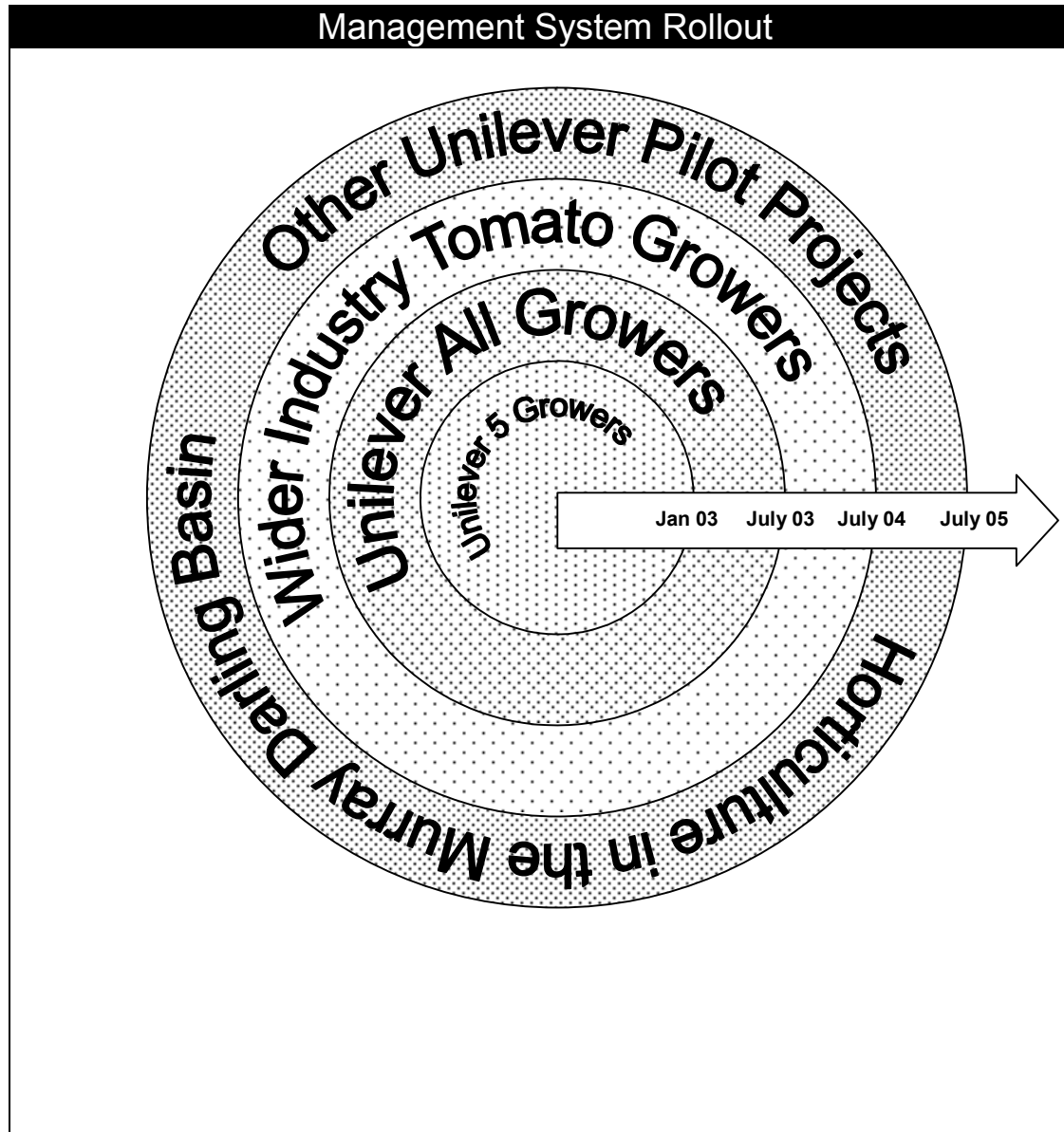


**IMPLEMENTING A MANAGEMENT SYSTEM DRIVEN BY ACTIVITY PROCESSES WILL AVOID DUPLICATION OF EFFORT, PAPER WORK, TIME AND COST FOR GROWERS**

## THE NEXT IMPORTANT PHASE OF THIS PROJECT WILL INVOLVE 3 ELEMENTS

COMPONENT	DESCRIPTION	TIMELINE
<b>Build the Integrated Best Management Practice System</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Develop EMS Policy (workshop, document, desktop publish)</li> <li><input type="checkbox"/> Quantify &amp; develop environmental risks matrix template</li> <li><input type="checkbox"/> Conduct legal compliance review for landholders (E, OHS, QA)</li> <li><input type="checkbox"/> Document BMP's, Integrate Unilever Global Experience</li> <li><input type="checkbox"/> Develop farm environmental plans template and performance tracking tools/systems               <ul style="list-style-type: none"> <li><input type="checkbox"/> Simplify indicator assessment methods for growers</li> <li><input type="checkbox"/> Develop implementation tool kits for each indicator</li> <li><input type="checkbox"/> Document interpretative tools and role of indicators</li> </ul> </li> <li><input type="checkbox"/> Develop integrated management framework &amp; process for combining EMS, Occupational Health and Safety, Food Safety and QA into simple farmer management system               <ul style="list-style-type: none"> <li><input type="checkbox"/> Review ISO &amp; Australian Standards</li> <li><input type="checkbox"/> Review existing farm systems (EMS, Food, Safety, QA)                   <ul style="list-style-type: none"> <li><input type="checkbox"/> Provide platform to integrate work currently underway by Farmsafe Victoria in conjunction with the Australian Processing Tomato Industry on Occupational Health &amp; Safety and HA on Approved Supplier/Food Safety</li> </ul> </li> <li><input type="checkbox"/> Develop &amp; document conceptual framework to integrate systems</li> </ul> </li> <li><input type="checkbox"/> Develop EMS &amp; Technical Support Tools</li> <li><input type="checkbox"/> Scope &amp; develop competency based training system</li> </ul>	July to Dec 02
<b>Implement the Best Management Practice System</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Pilot implementation on 5 farms, then use these farms as case study examples of implementation</li> <li><input type="checkbox"/> Implementation of management system on farm (plus to Wider Industry Post Jul 03)               <ul style="list-style-type: none"> <li><input type="checkbox"/> Awareness training for all staff and contractors</li> <li><input type="checkbox"/> Support with documentation, risk assessments, farm reviews, biodiversity assessments and plan development, development of on farm monitoring system</li> </ul> </li> <li><input type="checkbox"/> Farm implementation review and internal assessment (plus to Wider Industry Post Jul 03)</li> <li><input type="checkbox"/> External verification &amp; pre-certification audit (plus to Wider Industry Post Jul 03)</li> </ul>	Jan to Jul 03
<b>Conduct Environmental Indicator Research</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Utilizing the 5 benchmark properties from phase 1, identify environmental indices (EI's) for each grower that are non sustainable in value,</li> <li><input type="checkbox"/> Review current growing expertise &amp; production technology,</li> <li><input type="checkbox"/> Propose a "causal" mechanism which has generated the EI's in question (those with negative or unsustainable impacts),</li> <li><input type="checkbox"/> For each EI of concern, resolve a corrective management strategy to bring the EI value back in line with sustainability tolerances,</li> <li><input type="checkbox"/> Integrate the proposed EI indices and corrective strategies for each property to formulate a causal holistic model for environmental change,</li> <li><input type="checkbox"/> On the basis of the causal model, resolve a production strategy or plan to change the values of the EI's of concern and bring them within sustainability tolerances,</li> <li><input type="checkbox"/> Apply the strategy(s) resolved in season 3 (02/03) on each of the five benchmark grower properties monitored during stage 1 and monitor the values of the EI's in question,</li> <li><input type="checkbox"/> Evaluate the effectiveness of management strategy(s) upon EI values and amend the causal model.</li> <li><input type="checkbox"/> Repeat the above steps for seasons 4 (03/04) and 5 (04/05)</li> <li><input type="checkbox"/> Communicate results and findings via web media, workshops and grower agronomy nights etc.</li> </ul>	Start Aug 02  Review May & July 03, 04, 05

## ROLLOUT STRATEGY FOR MANAGEMENT SYSTEM



- Details**
- ❑ Learning's from Phase One communicated to growers via a workshop June/July 02
  - ❑ Learning's from 3 tomato pilots collectively reviewed (by Unilever Consultative Group – June 02)
  - ❑ Development of the Management System (by December 02)
  - ❑ Integration of QA, Food Safety & Occ Health & Safety requirements (by December 02). Link in the existing work done by Farm Safe Victoria in conjunction with Processing Tomato Growers on Occupational Health & Safety and the Approved Supplier Program facilitated by Horticulture Australia
  - ❑ Develop training material and systems linking to (or establishing) competency standards (By May 03)
  - ❑ Pilot Application & Rollout to Unilever Core 5 Growers (by July 03)
  - ❑ Application & Rollout of Management System for Unilever Growers (By December 03)
  - ❑ Initiation of Indicator change management process on 5 pilot farms (start August 02 for 3 seasons).
  - ❑ Release Management System & Training to Wider Tomato Industry (July 03)
  - ❑ Make Management System Process, System & Training available to wider horticultural industry (December 03)