

Australia – Pakistan

# Agriculture Sector Linkages Program

Annual Report 2006-2007  
&  
Annual Operational Plan 2007-2008

July 2007

ACIAR  
Australian Centre for International Agricultural Research

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## 1. Executive Summary

The focus of the current FY has been to complete the design of the four R&D projects (mango disease/production management, mango supply chain development, citrus production, dairy cattle management) and to implement these projects:

*HORT/2005/153: Development of integrated crop management practices to increase sustainable yield and quality of mangoes in Pakistan and Australia (A.1.3+A.1.4+A.1.5)*  
and

*HORT/2005/157: Optimising mango supply chains for more profitable horticultural agri-enterprises in Pakistan and Australia (A.2.3+A.2.4)*

These two projects were designed to closely link with each other and linkages between both projects will be facilitated by a technical steering committee including key stakeholder groups from the mango sector, as well as representatives from both project teams. Both projects were launched in November 2006 and have now been fully implemented. The mango disease/production management project is led by the Queensland Dept. of Primary Industries and coordinated in Pakistan through PARC. The supply chain development project is led by the University of Queensland and coordinated in Pakistan through PDHEB, with collaboration with the University of Agriculture Faisalabad.

A successful citrus workshop was held in Sargodha and Islamabad in July 2006. The workshop was combined with a citrus delegation from Australia visiting Pakistan. Both activities provided the basis for the development of the citrus project:

*HORT/2005/160: Increasing citrus production in Pakistan and Australia through improved orchard management techniques (B.1.3 + B.1.5)*

The project commenced in April 2007 and is led by a team from NSW DPI, in collaboration with PARC/NARC, the Punjab Orange research Institute, the NWFP Agricultural Research Institute and UAF.

*LPS/2005/132: Improving dairy production in Pakistan through improved extension services*

Implementation of this project has been slower than anticipated. Whilst the scoping study conducted in May 2006 provided the framework from which to develop the project, an additional project development trip was required in September 2006, involving the designated commissioned organisation from Australia (University of Sydney) and the relevant ACIAR research program manager (Dr Bill Winter). Initial unavailability of some of the key Uni Sydney team members due to other commitments and ongoing negotiations with some of the key Provincial stakeholders are the reasons for further slippage, so the proposal was only finalised in early 2007. The project was approved by ACIAR and the LDDDB/MINFAL in May 2007 but has since then been further delayed due to the transfer of the project leader from the University of Sydney to Charles Sturt University. It is now due to commence in July 2007 once sign-off by Charles Sturt University has occurred.

Concurrently, several other activities (industry exposure visits, workshops) occurred as per ASLP plan. The ASLP Steering Committee met for the first time in Nov. 2006 to coincide with the launch of the mango projects. A Dairy Knowledge Fair and Technical Workshop targeting the corporate dairy sector was jointly organised with Austrade in Lahore in February 2007.

An ASLP website (hosted on the ACIAR website) was launched in November 2006, during the Steering Committee meeting. This website (<http://www.aciar.gov.au/web.nsf/doc/ACIA-6TZ8CH>) provides a repository for all reports, documents, workshop proceedings, presentations etc. generated in the course of the ASLP.

## 2. Review of Progress FY 06-07

### 2.1 Overview

The focus of the current FY has been to complete the design of the four R&D projects (mango disease/production management, mango supply chain development, citrus production, dairy cattle management) and to implement these projects. Concurrently, several other activities (industry exposure visits, workshops) occurred as per ASLP plan. The ASLP Steering Committee met for the first time in November 2006 to coincide with the launch of the mango projects. A dairy knowledge fair was jointly organised with Austrade in Lahore in February 2007.

### 2.2 Program Activities

#### *Horticulture – mangos*

*A.1.1 Short term consultancy to rapidly diagnose mango dieback and malformation*

*A.1.2 Technical workshop on mango diseases, tree/orchard agronomy, and irrigation and drainage management*

These activities were concluded in FY 05-06 and reported in the previous ASLP annual report. Materials and documentation can be downloaded from the following webpage: <http://www.aciar.gov.au/web.nsf/doc/ACIA-6VJ2NM>

*A.1.3 Development and delivery of training modules on participatory research and extension methodologies in mango production*

*A.1.4 R & D project to develop and implement mango disease management strategies and certified nursery programs*

*A.1.5 R & D project to improve mango production through improved orchard and water management*

As communicated in the previous ASLP annual report, these three ASLP activities have been combined into one large integrated project:

*HORT/2005/153: Development of integrated crop management practices to increase sustainable yield and quality of mangoes in Pakistan and Australia*

This project was designed to closely link with the sister project on supply chain development (see A.2.3+A.2.4) and linkages between both projects will be facilitated by a technical steering committee including key stakeholder groups from the mango sector, as well as representatives from both project teams. The project was launched in November 2006 and has now been fully implemented. It is led by the Queensland Dept. of Primary Industries and coordinated in Pakistan through PARC. The Australian team spent 3 weeks in Pakistan during February/March 2007 to carry out project inception and training workshops and to develop and implement detailed work plans for the coming year. More details of the project can be accessed at: <http://www.aciar.gov.au/web.nsf/doc/ACIA-6XGLTK>

*A.2.1 Short term scoping studies and mango supply chain analysis*

This activity was concluded in FY 05-06 and reported in the previous ASLP annual report. A detailed report of the scoping study is available at: [http://www.aciar.gov.au/web.nsf/att/ACIA-6VL6RG/\\$file/Constraints%20analysis%20of%20Pakistan%20mango%20supply%20chains.pdf](http://www.aciar.gov.au/web.nsf/att/ACIA-6VL6RG/$file/Constraints%20analysis%20of%20Pakistan%20mango%20supply%20chains.pdf)

### *A.2.2 Mango sector exposure visit by Pakistan technical experts and agribusiness entrepreneurs to Australia*

This activity took place as planned in November 2006, to coincide with the Australian mango harvesting season. The Australian Mango Industry Association and QDPI&F developed the programme and hosted the Pakistan delegation, in liaison with the University of Queensland supply chain team. The Pakistan delegation comprised 3 officials from the Federal Govt. (PDHEB, PARC), 1 official each from the collaborating provincial research institutes (Mango Research Station Shujabad; Agriculture Research Sindh), 4 mango growers (2 each from Punjab and Sindh) and 2 processors/exporters. The delegation visited research stations, mango farms and processing facilities in Ayr, Mareeba, Brisbane and Nambour. Trip reports provided by delegation members will be posted on the ASLP website pending final editing.

### *A.2.3 Development and delivery of training modules on post-harvest management*

### *A.2.4 R & D project to develop efficient mango supply chains and improve value adding*

Similar to the mango production project, these two ASLP activities have been combined into one large integrated project:

### *HORT/2005/157: Optimising mango supply chains for more profitable horticultural agri-enterprises in Pakistan and Australia*

This project was designed to closely link with the sister project on mango disease/and production management (see A.1.3+A.1.4+A.1.5) and linkages between both projects will be facilitated by a technical steering committee including key stakeholder groups from the mango sector, as well as representatives from both project teams. The project was launched in November 2006 and has now been fully implemented. It is led by the University of Queensland and coordinated in Pakistan through PDHEB, with collaboration with the University of Agriculture Faisalabad. A first supply chain mapping exercise took 20 project participants from Pakistan to Singapore and Australia in January 2007 to obtain first hand exposure to marketing requirements for mango export markets. More details of the project can be accessed at:

<http://www.aciar.gov.au/web.nsf/doc/ACIA-6WKLTM>

## ***Horticulture - citrus***

### *B.1.4 Citrus sector exposure visit by Pakistan technical experts and agribusiness entrepreneurs to Australia*

This activity was concluded in FY 05-06 and reported in the previous ASLP annual report. A report of the delegations visit can be accessed under: [http://www.aciar.gov.au/web.nsf/att/ACIA-6VL6UR/\\$file/Final%20report%20of%20Pakistan%20citrus%20delegation%20visit%20to%20Australia.pdf](http://www.aciar.gov.au/web.nsf/att/ACIA-6VL6UR/$file/Final%20report%20of%20Pakistan%20citrus%20delegation%20visit%20to%20Australia.pdf)

### *B.1.1 Short term visits by Australian citrus experts to Pakistan*

### *B.1.2 Technical workshop on citrus diseases, tree/orchard agronomy and irrigation and drainage management*

These two activities took place jointly in July 2006. A team of 5 Australian citrus R & D specialists, one industry-nominated Australian citrus grower, the ACIAR Horticulture Program Manager, and the ASLP Program Officer participated in the exposure visit, while several Pakistani colleagues contributed to planning the activities and/or joined in various activities. The citrus workshop took place in Sargodha and Islamabad (22<sup>nd</sup> July and 24-25<sup>th</sup> July, respectively). Apart from the Australian citrus delegation, the workshop also involved representatives from a broad cross-section of the public and private segments of the Pakistan citrus sector (MINFAL, PARC/NARC, Provincial research and extension departments, university researchers, PDHEB,

Punjab and NFWP citrus growers and processors). Both activities provided a solid basis from which to develop the citrus R&D project (see below), as well as establishing linkages between the public and private sector citrus segments (the workshop was a first ever to bring together researchers with the private sector). The citrus report will be posted on the ASLP website soon, and details of the workshop can be found at: [http://www.aciar.gov.au/web.nsf/att/ACIA-6VL6UE/\\$file/Workshop%20on%20citrus%20research,%20development%20and%20extension%20in%20Pakistan%20and%20Australia.pdf](http://www.aciar.gov.au/web.nsf/att/ACIA-6VL6UE/$file/Workshop%20on%20citrus%20research,%20development%20and%20extension%20in%20Pakistan%20and%20Australia.pdf)

*B.1.3 Development and delivery of training modules on participatory research and extension methodologies in citrus production*

*B.1.5 R & D project to improve citrus production through improved disease, certified nursery, orchard and water management.*

A project proposal combining the above two activities into one integrated project has been finalised and signed off by ACIAR:

*HORT/2005/160: Increasing citrus production in Pakistan and Australia through improved orchard management techniques*

The project has commenced following sign-off by MINFAL and PARC in May 2007.

### ***Livestock - dairy***

*C.1.1 Scoping study and constraints analysis to identify critical R, D & E investment priorities in dairy production*

This activity was concluded in FY 05-06 and reported in the previous ASLP annual report. A copy of the scoping study report can be accessed at [http://www.aciar.gov.au/web.nsf/att/ACIA-6VL6WC/\\$file/Dairy%20constraints%20analysis%20report.pdf](http://www.aciar.gov.au/web.nsf/att/ACIA-6VL6WC/$file/Dairy%20constraints%20analysis%20report.pdf)

*C.1.4 Dairy sector exposure visit by Pakistan technical experts and agribusiness entrepreneurs to Australia*

This activity was deferred to FY 07-08 in order to link it with training and travel activities to Australia to be carried out within the auspices of the dairy R & D project. Given that agribusiness entrepreneurs have already visited Australia (Austrade activity, see C.1.5 below), this activity will now focus on technical exchange aspects.

*C.1.2 R & D project to develop and implement improved animal husbandry and nutrition for increased milk production*

*C.1.3 Development and delivery of training modules on participatory research and extension activities in dairy production*

A project proposal combining the above two activities into one integrated project has been finalised and signed off by ACIAR:

*LPS/2005/132: Improving dairy production in Pakistan through improved extension services*

Implementation of this project has been slower than anticipated. Whilst the scoping study conducted in May 2006 provided the framework from which to develop the project, an additional project development trip was required in September 2006, involving the designated commissioned organisation from Australia (University of Sydney) and the relevant ACIAR research program manager (Dr Bill Winter). Initial unavailability of some of the key Uni Sydney team members due to other commitments and ongoing negotiations with some of the key Provincial stakeholders are the reasons for further slippage, so the proposal was only finalised in early 2007. The project was approved by ACIAR and the LDDB/MINFAL in May 2007 but has

since then been further delayed due to the transfer of the project leader from the University of Sydney to Charles Sturt University. It is now due to commence in July 2007 once sign-off by Charles Sturt University has occurred.

#### *C.1.5 Sourcing and transfer of animal germplasm (Australian Friesian Sahiwal) and drought and salt-tolerant forage germplasm from Australia to Pakistan*

This activity became superseded because an Austrade sponsored delegation comprising about 10 corporate dairy entrepreneurs from Pakistan visited Australia in September 2006 to source and acquire animal germplasm. This visit ended in the acquisition and import to Pakistan of about 2,200 high performance dairy cattle into Pakistan in January 2007. The cattle arrived in Pakistan in reasonable condition. Quarantine in Karachi was also satisfactory. Since then the cattle have been distributed to a number of corporate and some small, semi-commercial dairy farmers.

During the ASLP Steering Committee meeting in Islamabad last year, it was agreed to redirect the funds earmarked for this activity towards organising a Dairy Knowledge Fair and Technical Workshop, jointly with Austrade. This was a successful event, taking place in February 2007 in Lahore and involving key corporate dairy entrepreneurs, as well as providing a forum for Australian dairy enterprises to expose their products and services. The Technical Workshop, which was organised by ACIAR and involved leading Australian and Pakistan dairy experts, focused on presenting management strategies required to maximise the production potential of high-quality livestock, taking into account the environmental conditions in Pakistan.

Despite this attempt at providing training support on how to manage high performance cattle adequately, there is a risk that poor management and suboptimal welfare conditions will predispose the Australian cattle to a range of diseases these animals would not normally be exposed to in Australia, leading to poor animal performance or higher mortality. This development is being closely monitored by Austrade, and close liaison is being maintained with DAFF, the Australian High Commission in Islamabad and Austrade, to assist the corporate importers of these cattle to minimise such losses. In joint discussions held with DAFF, it has been proposed by ACIAR to establish a herd monitoring system in collaboration with Pakistan. Whilst this would enable tracking of animals and performance (e.g. poor management rather than the quality of the animals) this system could also be designed in a way to become a precursor for a breeding herd monitoring database. Alternative options to provide assistance are also being considered and are likely to be the subject of a scoping study in 2008. Industry representatives are being consulted by DAFF on the study. ACIAR will continue to provide input as this DAFF-led initiative is further scoped.

### **2.3 Communication**

An ASLP website (hosted on the ACIAR website) was launched in November 2006, during the Steering Committee meeting. This website (<http://www.aciar.gov.au/web.nsf/doc/ACIA-6TZ8CH>) provides a repository for all reports, documents, workshop proceedings, presentations etc. generated in the course of the ASLP. It also provides a means of keeping all interested parties updated on planned workshops and reciprocal visits, including the provision of details on programmes and itineraries. Continued involvement by ACIAR communications staff in the development and maintenance of the website will ensure consistency and quality standards of all posted information are met.

### **2.4 Steering Committee**

The first Steering Committee meeting was held Islamabad on the 22<sup>nd</sup> November 2006. The minutes of the meeting are provided in appendix 5.2.

### 3. Annual Operational Plan FY 07-08

#### 3.1 Overview

Following completion of project design and implementation of the four projects in FY 06-07, the focus in FY 07-08 will shift to monitoring project progress. Concurrently, ACIAR will scope the development of two policy linkages projects, using funds from ACIAR's core program in Pakistan. These two projects arose out of recommendations made in the dairy and mango scoping studies to flank the technical projects with policy analysis in the dairy and the horticulture sectors, respectively. In his latest visit to Pakistan, the ASLP Coordinator held talks with MINFAL and possible partners for such policy projects, and it was agreed to progress this with a project development trip to Pakistan in June 2007 by the relevant ACIAR research program manager (Dr Jeff Davis).

#### 3.2 Program Activities

##### *Horticulture – mangos*

*HORT/2005/153: Development of integrated crop management practices to increase sustainable yield and quality of mangoes in Pakistan and Australia (A.1.3 + A.1.4 + A.1.5)*

Activities in the project will be undertaken as per the schedule below:

Objective	Activities/tasks (P = Pakistan; A = Australia)	Time line (year & month)	Milestones
1. To facilitate the establishment of clean mango nurseries in Pakistan	1.1. Establish a clean and high quality model nursery in the major mango production districts of Punjab and Sindh. In doing so, study how different nutrient and irrigation practices influence disease development in nurseries, young and established orchards (P&A).	Yr1, m3 to yr3, m10	- High quality, clean containerised seedlings adopted by the Pakistani mango growers association as preferred planting stock. Yr3, m3
	1.2. Develop a mango nursery production manual, outlining in detail procedures and practices for the establishment of a clean nursery (P)	Yr2, m1 to yr3, m10	- A nursery production manual made available to growers Yr3, m12
2. To develop improved tree husbandry and management options to produce sustainable and quality fruit.	2.1. Acquire and introduce disease, salt and high pH resistant rootstocks into the Pakistan mango industry program (P). - Acquire and introduce other poly-embryonic rootstocks with resistance to sudden death pathogens (P) - Evaluate the introduced potential rootstocks in saline and high pH soils at multi-locations to identify superior ones that could be multiplied and used in nursery establishments.	Yr1, m3 to yr3, m10	- Suitable new rootstocks with desired characteristics identified and multiplied for use in establishing nurseries for all new plantings  Yr 3, m7

	2.2. Develop a rapid nitrogen test - Evaluate improved nitrogen, potassium and canopy management strategies for different mango production districts (P&A)	Yr1, m6 to yr3, m10	A rapid nitrogen test for mango, developed and tested across a range of environments. - Establish the effects of fruit potassium concentrations on the severity of postharvest disease and fruit quality - Improved guidelines for nutrient monitoring and management available to growers Yr3, m12
3. To develop improved detection and management strategies for MSDS and other major diseases of mangoes	3.1: Establish methods of detecting initial infection of MSDS (P)	Yr1, m3 to yr3, m10	- Methods of initial MSDS disease detection made available to growers Yr2, m6
	3.2. Study the epidemiology of the sudden death syndrome (P) and of dendritic spots (A).	Yr1, m3 to yr3, m10	- Published documentation detailing the epidemiology of sudden death and dendritic spots. Yr3, m10
	3.3. Screen and identify suitable potential postharvest treatment replacements for mango dips (A).	Yr1, m6 to yr2, m12	- New alternatives to current postharvest dips identified Yr2, m10
	3.4. Develop and evaluate integrated field management practices with grower involvement (P&A)	Yr 2, m1 to yr3, m12	- Guidelines for sustainable management of MSDS available to growers Yr3, m12
4. To build capacity in the industry to undertake integrated crop management research.	4.1. Carry out some workshops targeting RD&E staff in the supply chain in a “Train the Trainer” way. Direct others at growers, contractors and field workers (P)	Yr1, m3 to yr2, m6	- Project commencement workshop held Yr1, m6 - Selected Growers and contractors trained to a level to train others Yr2, m8
	4.2. Develop workshop modules covering various aspects of orchard management including disease and pest management, nutrition, irrigation, phenology (P&A).	Yr2, m1 to yr2, m10	- Training modules covering different production aspects completed Yr2, m12
	4.3 Develop internet learning programs for growers based on training modules (A).	Yr1, m6 to yr3, m3	- Internet learning programs in place Yr3, m6
	4.4. Be involved in the selection and facilitation of graduate student training for researchers and Extension officers in appropriate institutions to undertake graduate RD&E training (P&A).	Yr1, m3 to yr3, m10	- End-of-project workshop bringing together those directly involved and trained through the project Yr3, m12

*HORT/2005/157: Optimising mango supply chains for more profitable horticultural agri-enterprises in Pakistan and Australia (A.2.3 + A.2.4)*

Activities in the project will be undertaken as per the schedule below:

Objective/ Activities	Tasks	Time line (Yr and m)	Milestones
<b>Objective 1: To improve and maintain mango quality from harvest to consumption</b>			
1.1: Australian mango export case study	<ul style="list-style-type: none"> <li>Conduct case study of Australian mango export chain (8 day continuous workshop visit to Singapore and Australia)</li> </ul>	Yr1, m1-2	<ul style="list-style-type: none"> <li>Each participant objectively assesses the case study chain's performance, and produces a report interpreting findings for his particular situation</li> </ul>
1.2: Improve postharvest quality	<ul style="list-style-type: none"> <li>Ship and set up equipment in postharvest laboratory. Train in equipment use and experimental design and measurement.</li> <li>Document, verify (monitor) and analyse existing domestic and export supply chains. Identify where quality is lost and the causes</li> <li>Set up 3 demonstration supply chains using recommendations from previous season and monitor</li> <li>Conduct laboratory simulations to determine the optimum storage procedures</li> <li>Incorporate recommendations into the 3 commercial demonstration supply chains. Monitor and refine protocols for next season</li> <li>Determine best ripening procedures for Chaunsa and Sindhri</li> <li>Laboratory simulations</li> <li>(b) Commercial application in demonstration supply chains</li> <li>Assess best time for harvest based on visual attributes and ripening performance. Develop a harvesting guide for Chaunsa and Sindhri.</li> <li>Identify postharvest diseases</li> <li>Develop control strategies and test in commercial demonstration supply chains</li> </ul>	Yr1, m4-5  Yr1, m5-9  Yr 2 & 3, m5-9  Yr2, m5-8  Yr2, m6-9 & yr3, m5-8  Yr1, m5-9 Yr 2 & 3, m5-9 Yr1, m5-9  Yr2, m5-9  Yr1, m5-8 Yr 2 & 3, m5-9	<ul style="list-style-type: none"> <li>Postharvest laboratory set up at UAF</li> <li>Collaborators trained in equipment use and experimental design and measurement</li> <li>Documented existing supply chain. Recommendations for demonstration supply chains. Recommendations for training</li> <li>Documented monitoring of demonstration supply chains and recommended improvements. Recommendations for training</li> <li>Develop optimum storage protocols for Chaunsa and Sindhri and make recommendations for market suitability.</li> <li>Documented product performance using recommended protocols.</li> <li>Recommendations for ripening Chaunsa and Sindhri</li> <li>Successful commercialisation of ripening procedures</li> <li>Time of harvesting recommendations based on optimum maturity</li> <li>Postharvest diseases identified</li> <li>Control strategies implemented and tested commercially</li> </ul>
1.3: Identify the causes of skin browning in Australian mangoes	<ul style="list-style-type: none"> <li>Sample mangoes from harvest to cooling in packing sheds to determine incidence of skin discolouration</li> <li>Determine possible causes of skin discolouration</li> </ul>	Yr1, m11-12  Yr2, m1-3, 11-12	<ul style="list-style-type: none"> <li>Skin discolouration defined and causes documented. Recommendation for its minimisation</li> </ul>

1.4: Training of Pakistan R&D collaborators in Australia	<ul style="list-style-type: none"> <li>• Train 2 Pakistan colleagues in mango handling practices and mango research techniques</li> </ul>	Yr2 & 3, m12, 1-2	<ul style="list-style-type: none"> <li>• Collaborators trained in mango handling and research techniques</li> </ul>
<b>Objective 2: To identify present market needs and likely future opportunities for Pakistan mangoes, using this information to inform the analysis of existing supply chains and the development of improved supply chain management systems and practices</b>			
2.1: Carry out market research in domestic markets	<ul style="list-style-type: none"> <li>• Carry out desktop research, followed by in-market research. Analyse and interpret results for feedback to sub-project 3</li> <li>• Train collaborators to ensure they have the skills necessary</li> </ul>	Yr1, m3-4	<ul style="list-style-type: none"> <li>• Results are used in demonstration supply chain plans and activities and are dissemination</li> </ul>
2.2: Carry out market research in major existing export markets (Middle East, UK and SE Asia)	<ul style="list-style-type: none"> <li>• Carry out desktop research, followed by in-market research in Dubai, UK and Singapore. Analyse and interpret results for feedback to sub-project 3</li> <li>• Train collaborators to ensure they have the skills necessary</li> </ul>	Yr1, m3-4	<ul style="list-style-type: none"> <li>• Results are used in demonstration supply chain plans and activities and are dissemination</li> </ul>
2.3: Desktop and in-market research to identify prime target(s) for future market development	<ul style="list-style-type: none"> <li>• Carry out desktop research, followed by in-market research. Analyse and interpret results for feedback to sub-project 3</li> <li>• Train collaborators to ensure they have the skills necessary</li> </ul>	Yr1, m9-11	<ul style="list-style-type: none"> <li>• Results are used in demonstration supply chain plans and activities and are disseminated</li> </ul>
<b>Objective 3: To work with selected mango supply chains so that they can demonstrate to the rest of the industry the impact of improved supply chain management on competitiveness</b>			
3.1: Conduct a study of factors that may impact on applying supply chain management principles to the Pakistan mango industry	<ul style="list-style-type: none"> <li>• Carry out desktop research validated by interviews with key stakeholders and opinion leaders</li> <li>• Train UAF staff in supply chain management strategic principles</li> </ul>	Yr1, m1-3	<ul style="list-style-type: none"> <li>• Results are used in developing the specific supply chain management approach to be adopted</li> </ul>
3.2: Initiate and develop three demonstration supply chains, one domestic, two export	<ul style="list-style-type: none"> <li>• Conduct formation and implementation workshops</li> <li>• Carry out continuous through-season support and training</li> <li>• Conduct end of season review and planning workshops</li> <li>• Action learning by extension, PHDEB, UAF, project staff and participants co-developing the supply chain</li> </ul>	Yr1, m5, m6 Yr1, 2, 3 m5-9 Yr1, 2, 3 m9-10 Yr1, 2, 3 continuous	<ul style="list-style-type: none"> <li>• Satisfactory commercial performance of demonstration supply chains</li> <li>• Collaborators able to use results and experiences as part of dissemination activities</li> </ul>
3.3: Undertake a study of the three demonstration chains, possibly also an international comparative case	<ul style="list-style-type: none"> <li>• Conduct continuous study of the development of demonstration supply chains</li> <li>• Action learning by PhD scholar and other participants to identify success factors</li> </ul>	Yr1, 2, 3 continuous  Yr1, 2, 3 continuous	<ul style="list-style-type: none"> <li>• Satisfactory collection, analysis and interpretation of data</li> <li>• Collaborators able to use results and experiences as part of dissemination activities</li> </ul>

## Horticulture - citrus

*HORT/2005/160: Increasing citrus production in Pakistan and Australia through improved orchard management techniques (ASLP B.1.3 + B.1.5)*

Activities in the project will be undertaken as per the schedule below:

Objectives/ Activities	Tasks P = Pakistan A = Australia	Time line (Yr and m)	Milestones
<b>Objective 1: To improve nursery production practices and production of a package incorporating QA procedures for maintaining disease free material and to introduce germplasm to extend the marketing season based on the climatic suitability to specific growing areas</b>			
1.1: Develop and implement disease-free, high quality nursery production (A & P)	<ul style="list-style-type: none"> <li>Establishment of the detailed plan, resource identification</li> <li>Establish a clean citrus nursery in Punjab and NWFP. Study the current practices and procedures and address the gaps (P)</li> <li>Develop a citrus production manual, outlining detail procedures and practices for the establishment of a clean nursery (P &amp; A)</li> <li>Training modules and courses available</li> <li>Visits EAMI Labs</li> <li>Inspection of commercial nurseries</li> </ul>	<p>Yr 1, m4</p> <p>Yr 1, m4 to Yr 3, m10</p> <p>Yr 2, m2 to Yr3, m10</p> <p>Yr 1, m11</p>	<ul style="list-style-type: none"> <li>A detailed worked out plan both for Punjab and NWFP trial sites agreed</li> <li>A High quality, clean containerised seedlings adapted by the citrus growers as preferred planting stock</li> <li>Nursery production manual available to growers</li> <li>Staff trained in operational procedures</li> </ul>
1.2: Select potentially superior germplasm and establish assessment trials (A & P)	<ul style="list-style-type: none"> <li>Obtain climatic data from Punjab and NWFP (P)</li> <li>Work out Heat units and assess the regional requirement for a specific variety (A)</li> <li>Assess additional climatic variables (A)</li> <li>Source rootstock seeds and scion material from Australia (P)</li> <li>Raise new rootstocks (P)</li> <li>Budding new cultivars</li> <li>Establish new trees (P)</li> <li>Compiling available research information (fact sheets) about the new rootstock and varieties based on Australian information (A)</li> <li>Root structure and health assessment (Valencia)</li> <li>Rootstock evaluation Stage 3 &amp; 4</li> <li>Roots structure and health Stage 1</li> <li>Roots structure and health Stage 2</li> </ul>	<p>Yr 1, m4-m10</p> <p>Yr 1, m10</p> <p>Yr 1, m12 Y2</p> <p>Yr 1, m4 to Yr 2, m4</p> <p>Yr2, m1 to Yr 3, m10</p> <p>Yr1, m5</p> <p>Yr1, m5-m8 to Yr 3</p> <p>Yr 2 m9</p> <p>Yr3, m9</p>	<ul style="list-style-type: none"> <li>Heat unit work completed</li> <li>Decision made on rootstock and variety selection and rootstock sent to Pakistan</li> <li>Seed and bud wood sourced and sent to Pakistan</li> <li>New trees developed and mother tree established</li> <li>New varieties established and multiplied for use in establishing nurseries for all new plantings</li> <li>Trees from Valencia rootstock uprooted and assessed</li> </ul>
1.3: Establishment of phenology data collection for navel	<ul style="list-style-type: none"> <li>Detailed phenology data collection</li> </ul>	<p>Yr1, m7 to Yr3, m12</p>	<p>Phenology information collected and collated and fruit size prediction model completed</p>

cultivars (A & P)	<ul style="list-style-type: none"> <li>• Fruit growth data for fruit size prediction</li> </ul>	Yr3, m12	
1.4: Explore regions for growing blood oranges (A & P)	<ul style="list-style-type: none"> <li>• Sourcing climatic data from NWFP</li> </ul>	Yr1, m4 to Yr2, m10	<ul style="list-style-type: none"> <li>• Blood orange regions identified using Chill Unit Modelling</li> </ul>
1.5: Assessment of the internal quality using new NIR sweetness head (A&P)	<ul style="list-style-type: none"> <li>• Obtain and assess fruit samples from rootstock trial</li> <li>• Establish methodology</li> <li>• Develop quality parameters</li> </ul>	Yr2, m7-m12	<ul style="list-style-type: none"> <li>• Quality parameters and methodology documented</li> </ul>
<b>Objective 2: To demonstrate 'Best Practice' orchard management focussing crop management, nutrition and irrigation management.</b>			
2.1: Planning and establishment of 'best practice' tree/crop management demonstration trials (P)	<ul style="list-style-type: none"> <li>• Establishment of the detailed plan, resource identification</li> <li>• Meeting held to identify the growers sites (P)</li> <li>• Level of pruning and thinning decided (P)</li> <li>• Pruning/fruit thinning applied (P)</li> </ul>	Yr 1, m4  Yr1, m4-8  Yr2, m4-6	<ul style="list-style-type: none"> <li>• A detailed worked out plan both for Punjab and NWFP trial sites agreed</li> <li>• Data collated and structured in a fashion relating to the intent of the regulations.</li> </ul>
2.2: Modification of flood irrigation system and establishment of modern drip irrigation trials (P & A)	<ul style="list-style-type: none"> <li>• Meeting held to identify irrigation sites (P)</li> <li>• Water monitoring equipment installed (P)</li> <li>• Flood irrigation modification (P)</li> <li>• Plan pressurised systems</li> <li>• Installation of drip systems (P)</li> <li>• Irrigation training courses (P)</li> <li>• Irrigation training held (A)</li> <li>• Irrigation information package prepared (A)</li> </ul>	Yr1, m4  Yr1, m10  Yr1, m10  Yr 1, m10  Yr2, m2 Yr2, m8 Yr2, m2	<ul style="list-style-type: none"> <li>• Twin furrow system adapted</li> <li>• Recommendation made on pressurised systems</li> <li>• Irrigation courses package available</li> </ul>
2.3: Outline basic nutrition requirements for mandarin and blood orange (A)	<ul style="list-style-type: none"> <li>• Incorporation of adaptive research and drafting key nutrition practices (A)</li> </ul>	Yr2, m2 to Yr3, m4	<ul style="list-style-type: none"> <li>• Key nutrition practices included in Citrus manual</li> </ul>
2.4: Development of a production manual for Citrus (P & A)	<ul style="list-style-type: none"> <li>• Key management practices identified and drafted (A)</li> </ul>	Yr2, m2 to Yr3, m10	<ul style="list-style-type: none"> <li>• Management methods and procedures included in citrus manual</li> </ul>
<b>Objective 3: To enhance the research, extension and production capacity of Pakistan citrus institutions and industry</b>			
3.1: Training of researchers and relevant extension personnel in varietal evaluation (P)	<ul style="list-style-type: none"> <li>• Establishment of the detailed plan, resource identification</li> <li>• Training in maintenance of varietal trials</li> <li>• Training in varietal evaluation (Australia)</li> </ul>	Yr 1, m4-10  Yr 1, m 4-10  Yr 2 m4-10 Yr 3 m4-10	<ul style="list-style-type: none"> <li>• Detailed plan for varietal evaluation work developed</li> <li>• Researchers trained maintenance of varietal trials</li> <li>• Researchers trained in varietal evaluation methodology</li> </ul>
3.2: Train Extension Workers, Industry Practitioners in 'best practice' crop production techniques (P)	<ul style="list-style-type: none"> <li>• Training designed in 'best practice' crop production</li> <li>• Training implemented</li> </ul>	Yr1, m11 to  Yr4, m4	<ul style="list-style-type: none"> <li>• Research and extension personnel trained and implementing new techniques</li> </ul>
3.3: Extension staff and key growers trained in grower	<ul style="list-style-type: none"> <li>• Training designed in 'best practice' group processes and extension methods</li> <li>• Training implemented</li> </ul>	Yr1, m11	<ul style="list-style-type: none"> <li>• Training courses and material developed</li> </ul>

group dynamics and processes and other extension techniques (P)	<ul style="list-style-type: none"> <li>Hands on work with groups</li> </ul>	Yr 2, m4 to Y3, m11	<ul style="list-style-type: none"> <li>Extension personnel trained</li> <li>At least six grower groups established and operational</li> </ul>
3.4: Project staff training in research methodology (P)	<ul style="list-style-type: none"> <li>Staff training in orchard management</li> </ul>	Yr1, m11 to Y3, m4	<ul style="list-style-type: none"> <li>Training program developed and staff trained</li> </ul>
3.5: Short term visits for Research and extension staff to Australia (A)	<ul style="list-style-type: none"> <li>Provide training and courses</li> </ul>	Yr1, m11 Yr2, m8 Yr3, m1	<ul style="list-style-type: none"> <li>Selected staff trained in research and development/variety evaluation/citriculture</li> </ul>

### ***Livestock - dairy***

*LPS/2005/132: Improving dairy production in Pakistan through improved extension services (C.1.2 + C.1.3)*

Activities in the project will be undertaken as per the schedule below:

<b>Objectives/Activities</b>	<b>Tasks</b>	<b>Timeline</b>	<b>Milestones</b>
<b><i>Objective 1: To demonstrate the economic and social benefits of improved extension services to smallholder dairy farmers.</i></b>			
1.1: Collection of benchmark data on the whole farming system from smallholder farmers in two contrasting regions.	<ul style="list-style-type: none"> <li>Select the communities that will be the subject of the survey and will become participants in the farmer training and farm monitoring program.</li> <li>Multi-disciplinary team develops and tests the survey tool</li> <li>Train extension workers in the collection and reporting of information.</li> <li>Collect and collate survey data from 100 households</li> </ul>	m1  m1-2 m2  m3-15	Survey information provides a comprehensive picture of the operation of smallholder dairy systems and provides insights into possible areas for intervention to improve productivity and profitability.
1.2: Training extension staff in milk production technologies and extension techniques arising from Objective 2.	<ul style="list-style-type: none"> <li>Identify the extension workers from Halla (40) &amp; NRSP (40) who will participate in the 1<sup>st</sup> round of training. The training programs will occur at locations suited to participants (using government and community facilities where possible).</li> <li>Provide training for 40 extension officers from the Punjab L&amp;DD associated with one of the national development programmes.</li> </ul>	m15-18   m19-20	Training provides extension personnel with the knowledge and tools necessary to advise smallholder dairy farmers on how to improve productivity and profitability.
1.3: Implement farmer training for at least 100 farmers at each site, and monitor adoption and benefits.	<ul style="list-style-type: none"> <li>Deliver farmer training programs to NGO farmer groups using primary + follow-up delivery approach</li> <li>Maintain monitoring program of farm operations</li> <li>Collect and collate problems encountered by farmers that require additional information.</li> <li>Conduct on-farm field visits to</li> </ul>	m18-30	Training provides smallholder dairy farmers with the knowledge and tools to improve productivity and profitability.

Objectives/Activities	Tasks	Timeline	Milestones
	encourage interaction between farmers, extension workers and researchers.		
1.4: Provide feedback to researchers on knowledge and information gaps identified by farmers.	<ul style="list-style-type: none"> <li>Report problems encountered by farmers to researchers.</li> <li>Researchers to adjust extension worker training programs accordingly.</li> </ul>	m18-30	Regular communication between farmers and extension personnel provides insights into possible areas for intervention from researchers to address knowledge and information gaps.
<b>Objective 2: To enhance the scope and quality of information used for training extension personnel.</b>			
2.1: Collate existing information in Pakistan and Australia into about 12 modules, in an appropriate language for extension personnel and farmers.	<ul style="list-style-type: none"> <li>Refine the farming systems Integrated Assessment Tool (IAT) to accommodate dairy production and all the crops and forages.</li> <li>Finalise the scope and nature of the training modules.</li> <li>Select the appropriate teams to develop each module, including extension and Australian expertise.</li> <li>Teams review currently available extension training material.</li> <li>Teams conduct workshops to identify tasks, responsibilities &amp; timelines.</li> <li>Drafts of modules reviewed by the trainers for appropriateness of language and style, and by independent scientists for content. Modules modified accordingly.</li> <li>Modules put into a range of media formats (print, DVD, posters, etc).</li> </ul>	m1  m1-6  m2  m2  m3  m9  m10-12	Collation of information into 12 training modules provides the Pakistan dairy industry with the knowledge and tools to improve productivity and profitability.
<b>Objective 3: To enhance the research capacity of Pakistani scientists in priority fields relevant to the ongoing development of the dairy sector.</b>			
3.1: Undertake reviews and applied research activities in areas identified in Objective 2.	<ul style="list-style-type: none"> <li>Agree on skill areas that warrant review &amp; identify potential reviewers and review program.</li> <li>Undertake reviews, with Terms of Reference to include follow-on recommendations for consideration by the Board.</li> <li>Agree on initial areas for applied research activities &amp; implement.</li> <li>Implement applied research activities identified as knowledge gaps in the development of training modules and/or as recommendations from the reviews.</li> </ul>	m2  m3-6  m2-20  m10-24	Reviews and applied research activities enhance present knowledge and assist to develop new tools to further improve productivity and profitability for the Pakistan dairy industry.
3.2: Provide a range of skills-enhancement activities for leading scientists.	<ul style="list-style-type: none"> <li>Agree on skill areas that warrant training, the modality and people who will participate in that training.</li> <li>Design and implement the training activities in conjunction with Australian and Pakistani agencies and individuals.</li> </ul>	m12-30	Opportunities for leading and young promising Pakistani scientists to enhance their skills will assist in ensuring improvement in productivity and profitability for the Pakistan dairy industry is sustained.

Objectives/Activities	Tasks	Timeline	Milestones
<b>Objective 4: To promote the benefits of agency linkages and enhanced extension services to National and Provincial research and extension agencies and NGO groups.</b>			
4.1: Hold a national forum mid-project to outline the aims and approach adopted and to present initial benchmarking survey information, review and research results and an overview of the new extension material.	<ul style="list-style-type: none"> <li>• Make arrangements for the forum at least 3 months in advance to enable attendance by key stakeholders.</li> <li>• Develop a program that captures an understanding of the diversity of the farming systems and potential intervention opportunities: make the training material available for review and possible use by groups not included in the project, and present the outcomes of program reviews &amp; initial applied research.</li> </ul>	m13  m16	A mid-project national forum to review project progress as well as training module content reinforces agency linkages and promotes involvement in on-going applied research.
4.2. Hold a final national forum that reviews the achievement of project aims and objectives, considers opportunities to improve the approach and for scaling out.	<ul style="list-style-type: none"> <li>• Make arrangements for the forum at least 3 months in advance to enable attendance by key stakeholders.</li> <li>• Develop a program that provides a comprehensive coverage of project activities and outcomes, particularly including the impacts achieved to that time by smallholder farmers; the flow of information between farmers, extension workers and scientists; and linkages formed between Australian and Pakistani scientists. The program will include farm visits.</li> <li>• A workshop will be designed to consider opportunities to improve on the approach used in this project based on experiences, and to consider options for scaling out.</li> </ul>	m27  m30	An end of project national forum to review project achievements, consider improvement opportunities and scaling out options promotes agency linkages and enhances extension services. This will ensure that improvements in productivity and profitability for the Pakistan dairy industry are sustained.

#### *C.1.4 Dairy sector exposure visit by Pakistan technical experts and agribusiness entrepreneurs to Australia*

This activity will be timed to link with training and travel activities to Australia to be carried out within the auspices of the above dairy R & D project. Given that agribusiness entrepreneurs have already visited Australia, this activity will now focus on technical exchange aspects.

### **3.3 Communication**

The ASLP website will continue to be the main communication tool for the ASLP. This will be complemented by ongoing visits by the SLP Coordinator to Pakistan. The ASLP PSO will maintain regular liaison with all four project teams, as well as continuing to provide networking and liaison between stakeholders and other similar donor activities.

### **3.4 Steering Committee**

The ASLP Coordinator will liaise with AusAID and MINFAL to establish to most convenient venue and date for the next meeting, which is likely to take place in February or March 2008.

### 3.5 Risk Management

An updated risk assessment framework and management plan is provided below. The highest order operational risk continues to be the potential for changed internal security conditions that may lead to an inability of Australian experts and project staff to travel to Pakistan due to ensuing travel restrictions. At the time of preparation of the AR 05-06/AOP 06-07, this risk was upgraded to medium, with a very high to high potential impact on the ASLP. Levels of sectarian violence during 2006/2007 initially subsided, but have now flared up again, so this risk has been retained as medium. Despite this continued higher level of risk last year, Australian teams were able to visit Pakistan. Their safety was ensured through close liaison with MINFAL, that put in place a series of additional security measures (e.g. police escorts) to ensure the risks were minimised. The spate of recent, politically motivated anti-government rioting is being monitored and Australian teams appraised of circumstances.

The issue of slippage of project starts due to delays in sign-off times in Pakistan identified as a potential issue in the last AR 05-06/AOP 06-07 was successfully managed through an agreement between MINFAL and the ASLP Coordinator on a modality to fast track sign-off through MINFAL (see appendix 5.3). However, project development on the citrus and dairy projects has been more complex than anticipated, leading to slippage of the start dates of these projects. It is now suggested that AusAID and ACIAR formalise the carry over of funds after the formal end of the ASLP into FY 09-10 by way of an unfunded extension of the ASLP until 31<sup>st</sup> December 2009, in order for these projects to have sufficient time for completion.

As already mentioned in section 2.2, the import of Australian high performance dairy cattle into Pakistan in early 2007 under the auspices of the Austrade-managed component of the ASLP has some elements of risk to the ACIAR-managed component of the ASLP in terms of stakeholders in Pakistan concerned with underperformance or increased mortality of these animals. The risk management approach is two-fold. On the one hand we have continued to press upon Austrade that future exports need to have greater involvement of the Australian exporters in after sales cattle management in Pakistan, as well as influencing a more careful selection of receiving dairy farms (e.g. to meet minimal management standards). At the same time, we have worked closely with DAFF in their consideration of undertaking a scoping study of establishment of a herd monitoring system or other assistance to enable improved management of Australian cattle in Pakistan.

Updated risk assessment framework and management plan (*changes since July 06 in bold italics*)

Category	Description of Risk	Probability	Impact on Task	Containment Measures
<i>public perception</i>	<i>ASLP associated with death of imported Australian cattle</i>	<i>medium</i>	<i>low</i>	<i>close liaison with Austrade, DAFF and key Pakistan partners (LDDB, Dairy Pakistan) to manage possible negative publicity; better planning of future exports taking into account capacity of local institutions and partners</i>
institutional	incentive structures within Pakistan NARES inhibit transition of researchers to participatory research and extension modality	medium	high	maintain close liaison with PARC leadership to support research management and institutional change

scope definition	program duration too short for interventions tested to deliver impacts in R&D projects	medium to high	medium to high	maintain funding to selected topics through ACIAR core program beyond life of ASLP
scope definition	scope too broad for resources available	low	medium to high	renegotiate tasks and/or reduce scope; reassign resources
security	short-term restrictions for Australians to travel to Pakistan	medium	high	bring forward activities in Australia, defer activities in Pakistan; provision of additional security by Pakistan authorities
security	long-term restrictions for Australians to travel to Pakistan	low	very high	enlist support of South Asia based CGIAR centres (ILRI, IWMI); appoint higher level local technical support; shift emphasis of plan and downsize field research dependant on Australian input and increase range of activities possible in Australia (exposure visits, training)
resources	staff of commissioned organisation resign or unavailable	low to medium	high to medium	outsource to other providers; reappoint; renegotiate tasks and/or reduce scope
resources	staff of commissioned organisation lack appropriate knowledge and/or skills	low	high	resource appropriately; close scrutiny of commissioned organisation staff; form consortia with track record to spread risk
<b>contractual</b>	<b>longer project development and design timelines; delays in Pakistan sign-off procedures</b>	<b>project development: medium</b>	<b>high</b>	<b>allow unfunded extension of projects for up to 6 months beyond formal finish of ASLP</b>
		<b>delays in sign-off: low</b>		
contractual	collaborators do not provide in-kind contribution	low to medium	high	renegotiate tasks and resources; defer payments; enlist support of Secretaries of Agriculture in line ministries / departments
organisational	changes to organisational structures	low	medium	renegotiate tasks and/or reduce scope; reassign resources; defer payments
timing/schedule	milestones not delivered on time	low to medium	medium	reassign existing resources; defer payments
technical	poor quality outputs	low	high	resource appropriately; outsource to other providers; defer payments;
communications	communications plan ineffective	low	high	resource appropriately; revise plan
environmental	detrimental impacts on environment	low	low	revise plan

## 4. Budget

### 4.1 FY 06-07

The expenditure budget for FY 2006 – 2007 is summarised in the table below; a formal acquittal for the period July 2006 - June 2007 is provided separately.

ASLP code	Short title	Balance 30-Jun-06	FY 06-07 AOP forecast	FY 06-07 actual
A.1.1	Diagnosis of dieback and malformation	-24,164	0	
A.1.2	Workshop mango production	42,816	0	5972
A.1.3	Training modules mango production			
A.1.4	R&D project mango diseases	0	258,461	268,876
A.1.5	R&D project orchard/water management			
A.2.1	Scoping study/supply chain analysis	-8,455	0	0
A.2.2	Industry exposure visit	0	105,000	96,664
A.2.3	Training modules mango supply chain			
A.2.4	R&D project supply chain mgt	0	379,330	380,285
B.1.1	Expert visit citrus production	58,080	42,000	34,507
B.1.2	Workshop citrus production	96,816	30,000	22,126
B.1.3	Training modules citrus production	0	100,000	197,619
B.1.5	R&D project citrus production			
B.1.4	Industry exposure visit	160	0	0
C.1.1	Scoping study/constraints analysis	78,177	78,177	96,411
C.1.2	R&D project dairy animal productivity			
C.1.3	Training modules dairy production	0	275,000	0
C.1.6	Evaluation of germplasm			
C.1.4	Industry exposure visit	0	105,000	0
C.1.5	Sourcing and transfer of germplasm	60,000	80,000	67,988
	Contingency for changed priorities	28,984	50,000	0
	<i>Subtotal - program activities</i>	<i>332,414</i>	<i>1,502,968</i>	<i>1,170,448</i>
	PSO salary and operating	8,329	31,500	34,266
	Travel	-15,081	15,000	21,130
	<i>Subtotal ASLP management costs</i>	<i>-6,752</i>	<i>46,500</i>	<i>55,396</i>
	<b>Total ASLP</b>	<b>325,662</b>	<b>1,549,468</b>	<b>1,225,844</b>

Overall, the ASLP has been operating close to budget. Variations are explained below:

- A.1.2: residual payments from FY 05-06 accrued in FY 06-07
- A.1.3-A.1.5: variation to budget to cater for funds management by ICARDA in Pakistan on behalf of PARC
- B.1.1, B.1.2: savings allocated to increase in budget of B.1.3+B.1.5 - citrus project
- C.1.1: residual payments from FY 05-06 accrued in FY 06-07; over-expenditure due to greater number of experts included in scoping study team
- C.1.2+C.1.3+C.1.6: delay in project implementation (see section 2.2, p.5) has resulted in funds being carried over to FY 07-08

- C.1.4: deferred into FY 07-08; budget reduced as some travel for dairy industry experts will take place as part of the dairy project
- C.1.5: funds redirected towards Dairy Knowledge Fair and Technical Workshop, as agreed in ASLP Steering Committee meeting; savings allocated against dairy project
- PSO salary and operating; slightly above budget to cater for higher than anticipated office establishment costs (PSO had to vacate AusAID office) ASLP travel: overspend due to higher than anticipated travel costs by PSO officer as part of project implementation; it is anticipated that these will return to lower levels in FY 07-08.

## 4.2 FY 07-08

The projected budget for FY 07-08 is summarised below, followed by explanations to variations.

ASLP code	Short title	Balance 30-Jun-07	FY 07-08 as per ASLP plan	FY 07-08 forecast as per AOP
A.1.1	Diagnosis of dieback and malformation	0	0	0
A.1.2	Workshop mango production	-5,972	0	0
A.1.3	Training modules mango production	-10,415	450,000	300,890
A.1.4	R&D project mango diseases			
A.1.5	R&D project orchard/water management			
A.2.1	Scoping study/supply chain analysis	0	0	0
A.2.2	Industry exposure visit	8,336	0	0
A.2.3	Training modules mango supply chain	-955	300,000	352,487
A.2.4	R&D project supply chain mgt			
B.1.1	Expert visit citrus production	7,493	0	0
B.1.2	Workshop citrus production	7,874	0	0
B.1.3	Training modules citrus production	-97,619	250,000	197,394
B.1.5	R&D project citrus production			
B.1.4	Industry exposure visit	0	0	0
C.1.1	Scoping study/constraints analysis	-18,234	0	0
C.1.2	R&D project dairy animal productivity	275,000	425,000	438,313
C.1.3	Training modules dairy production			
C.1.6	Evaluation of germplasm			
C.1.4	Industry exposure visit	105,000	0	40,000
C.1.5	Sourcing and transfer of germplasm	12,012	0	0
	Contingency for changed priorities	50,000	113,500	0
	<i>Subtotal - program activities</i>	<i>332,520</i>	<i>1,538,500</i>	<i>1,329,084</i>
	PSO salary and operating	-2,766	31,500	31,500
	Travel	-6,130	20,000	15,000
	Review	0	50,000	0
	<i>Subtotal ASLP management costs</i>	<i>-8,896</i>	<i>101,500</i>	<i>46,500</i>
	<b>Total ASLP</b>	<b>323,624</b>	<b>1,640,000</b>	<b>1,375,584</b>

The main change with respect to the original plan is some level of variance in the project budgets, as well as deferring the ASLP review into early FY 08-09, due to slippage in project start dates.

- A.1.3-A.1.5: lower forecasted expenditure reflects cash flow adjustments to the project and an overall reduction to the budget of the mango production project to cater for an increase in budget of the mango supply chain project reflecting shift of post harvest work from mango production project to mango supply project (overall project budget can be taken from Table in section 5.4)
- A.2.3+A.2.4: higher forecasted expenditure reflects cash flow adjustments to the project and an overall reduction to the budget (see comments for A.1.3-A.1.5; overall project budget can be taken from Table in section 5.4)
- B.1.3+B.1.5: lower forecasted expenditure reflects cash flow adjustments to the project and to even out higher expenditure in FY 06-07 (overall project budget can be taken from Table in section 5.4)
- C.1.1: residual payments from FY 05-06 accrued in FY 06-07; over-expenditure due to greater number of experts included in scoping study team
- C.1.4: budget reduced as some travel for dairy industry experts will take place as part of the dairy project; savings re-allocated to dairy project
- Contingency funds: have been re-allocated to cater for budget increases in supply chain project
- ASLP travel: it is anticipated that these will reduce to lower levels than previous years
- ASLP review: to be deferred into FY 08-09; contingent on approval by steering committee.

A projection of the whole of ASLP budget into the outyears is provided in appendix 5.4. At this point in time, it is anticipated that the ASLP will be about AU\$ 84,828k overspent. This increase is mainly to cater for increases to project budgets. The shortfall will be made up out of the ACIAR core Pakistan program and a budgetary provision has been made to that effect. There will be some carry-over into FY 09-10, which will require an unfunded extension of the RoU to the 31<sup>st</sup> March 2010 between AusAID and ACIAR. The main variations over the life of the ASLP have been to budgets of the three horticulture projects, partly by absorbing savings from some of the other activities, and partly through re-allocation of contingency funds.

## 5. Appendices

### 5.1 List of Acronyms

ASLP	Agriculture Sector Linkages Program
DAFF	Dept. of Agriculture, Forestry and Fisheries
DEST	Dept. of Education, Science and Technology
EAD	Economic Affairs Division
ICARDA	International Center for Agricultural Research in the Dry Areas
LDDDB	Livestock and Dairy Development Board
MINFAL	Ministry for Food, Agriculture and Livestock
MSA	Memorandum of Subsidiary Agreement
MSDS	Mango Sudden Decline Syndrome
NARC	National Agricultural Research Center
NGO	Non-Government Organisation
NRSP	National Rural Support Program
NSW DPI	New South Wales Dept. of Primary Industries
NWFP	North West Frontier Province
PARC	Pakistan Agricultural Research Council
PHDEB	Pakistan Horticulture Development and Export Board
QDPI&F	Queensland Dept. of Primary Industries and Fisheries
R&D	Research and Development
R, D&E	Research, Development and Extension
RoU	Record of Understanding
SC	Steering Committee
UAF	University of Agriculture Faisalabad
UQ	University of Queensland

## 5.2 Minutes of the 1<sup>st</sup> ASLP Steering Committee meeting Islamabad, 21.11.06

### Agenda item 1: Apologies and confirmation of agenda

The Steering Committee (SC) confirmed the agenda. Apologies were given for Secretary Qureshi, who was unable to attend due to an overseas trip. The EAD representative (Mr Imran) arrived towards the end of the meeting. Committee members attending were:

- Mr M Saleem Khan, Additional Secretary MINFAL (Co-chair)
- Mr Tusneem, Chairman PARC
- Dr Iftikhar Ahmad, Member PARC
- Dr Afzal, DG NARC and CEO Livestock & Dairy Development Board (LDDDB)
- Ms Fabia Shah, Chief Program Advisor AusAID (co-chair)
- Mr Jason Robertson, Deputy HC, DFAT (standing in for the High Commissioner, HE Ms Zorica McCarthy, who joined later)
- Dr Christian Roth, ASLP coordinator, ACIAR

### Agenda item 2: ASLP Coordinator's report for FY 05-06

The ASLP coordinator gave an overview presentation. Members of the SC noted the program was moving along well and complimented both sides on the good progress. Additional Secretary MINFAL informed the SC that additional funding has been made available to PARC to bolster the ASLP projects with additional funds for supplementary activities where ASLP funds have left gaps. He also reiterated the need to set up project steering committees involving all sector stakeholders and for the steering committees to meet on a regular basis.

### Agenda item 3: ASLP coordinator's report on planned activities 06-07

The ASLP coordinator provided an overview presentation and also tabled a proposal for a dairy knowledge fair / technical workshop to be organised jointly with Austrade, the LDDDB and Dairy Pakistan.

The SC noted progress on the mango projects (covered in item 5) and endorsed the general direction of the citrus and dairy projects, as well as confirming the need to achieve implementation of these projects in April 2007. With regard to the citrus project's objective of developing nurseries for clean citrus rootstock, the Additional Secretary commented that MINFAL had earmarked funds to allow for a broader approach to be taken, including other nursery crops. With respect to the dairy project, the SC in general emphasised the need to ensure there was a meaningful involvement of the project with partners in the Sindh. It was agreed that Dr Afzal and the ASLP coordinator explore options to do this in the further development of the proposal.

The variations to the budget in FY 06-07 were noted and the SC strongly supported the proposal of reallocating funds originally destined to the introduction of germplasm from Australia (ASLP activity C.1.5) towards a dairy knowledge fair and technical workshop. It was suggested to link this event with the annual cattle and livestock trade fair in Lahore (end of February).

**Agenda item 4: Pakistan-Australia agriculture scientists training program**

The SC noted the options available for support of training of agricultural research scientists in Australia as presented in the discussion paper prepared by the ASLP coordinator. The Additional Secretary clarified that funding was less of an issue, and that the main interest lay in obtaining assistance in placement. It was agreed that once PARC has further refined its needs and determined more precise numbers of candidates, the ASLP coordinator in Islamabad would assist PARC in identifying appropriate universities in Australia and facilitate contacts to interested universities, liaising with DEST and AusAID as appropriate. Once these contacts have been established PARC could then directly pursue the negotiation of placement protocols and MoUs with selected Australian universities.

**Agenda item 5: Launch of ASLP mango projects**

Additional Secretary MINFAL informed the SC that the Supply Chain project had been signed by the Secretary MINFAL and the MSA sent to the Pakistan Horticulture Development and Export Board for its signature. With respect to the Mango Production project, after discussion on the modality of fund disbursement in Pakistan, it was agreed to retain the proposed modality of channelling the funds through ICARDA, but that PARC continue to reform its financial and accounting systems to avoid the need of using the ICARDA route for future projects. Accordingly, the Additional Secretary committed to signing the MSA for the Mango Production project immediately, allowing the SC to formally launch both projects through a media release and statements made to the media by the Additional Secretary and the Australian High Commissioner at the end of the SC meeting.

**Agenda item 6: Other business**

The ASLP coordinator provided the SC with a demonstration of the ASLP website, which was welcomed. The SC requested that the URL be notified to key stakeholders in Pakistan and in Australia, which the ASLP coordinator will undertake upon his return to Australia.

The Chairman PARC informed the SC about an international MDG conference in India, where he gave a presentation on the ASLP, highlighting its approach of integrated activities as an example of best practice in developing and implementing a research program.

### **5.3 Modus Operandi for sign-off of ASLP projects in Pakistan (updated in March 2007)**

#### *Background*

- In November 2005, the Governments of Pakistan and Australia, represented through MINFAL and the Australian High Commission, signed the ASLP Implementation Plan, which outlines the agreed activities, projects and notional budget allocations for the life of the program.
- Advice received from EAD in August 2005 was that it would not be necessary to channel the individual project memoranda of subsidiary arrangements (MSA) through the EAD/PC-1 process, but rather, these agreements could be signed off directly between the Australian Commissioned Organisation and the Pakistan lead collaborator, provided the projects remained within the scope of the ASLP Implementation Plan and EAD was kept informed of the project sign-off by MINFAL.

#### *Sign-off process*

- Finalized project MSA s are due to be signed off by the Director of ACIAR before being submitted to the Australian Commissioned Organisation for signature.
- Following sign-off by the Australian Commissioned Organisation, project MSAs will be submitted to MINFAL to facilitate sign-off by the lead Pakistan partner organisations, PARC in the case of the mango management project, PDHEB in the case of the mango supply chain project, PARC in the case of the citrus project and LDDDB in the case of the dairy project.
- MINFAL will then notify EAD in writing on the outcome and if required, provide copies of the approved project MSAs to EAD and copies of the letter of notification to ACIAR.
- Under this modality, operational flexibility for the Pakistan partner organisations will be retained as no PC-1 format needs to be prepared. Provision of flexibility and maintaining tight timelines are essential if all ASLP projects are to commence as planned. The fact that the projects do not entail any cash support from Pakistan partners (only in-kind support) is a further reason for not needing to go through the PC-1 format.

## Appendix 5.4: Projections of ASLP budget into outyears

ASLP code	Short title	FY 05-06 as per ASLP as per plan	FY 05-06 actual		FY 06-07 as per ASLP plan	FY 06-07 as per Jun 07 actual*	FY 07-08 as per ASLP as per plan	FY 07-08 as per AOP forecast	FY 08-09 as per ASLP as per plan	FY 08-09 as per AOP forecast	FY 09-10 as per ASLP as per plan	FY 09-10 as per AOP forecast	Total as per ASLP as per plan	Total as per AOP forecast
A.1.1	Diagnosis of dieback and malformation	100,000	124,164		0	0	0	0	0	0	0	0	100,000	124,164
A.1.2	Workshop mango production	100,000	57,184		0	5,972	0	0	0	0	0	0	100,000	63,156
A.1.3	Training modules mango production	0	0	}	500,000	268,876	450,000	300,890	300,000	315,929	0	164,233	1,250,000	1,049,928
A.1.4	R&D project mango diseases	0	0											
A.1.5	R&D project orchard/water management	0	0											
A.2.1	Scoping study/supply chain analysis	100,000	108,455		0	0	0	0	0	0	0	0	100,000	108,455
A.2.2	Industry exposure visit	0	0		105,000	96,664	0	0	0	0	0	0	105,000	96,664
A.2.3	Training modules mango supply chain	0	0	}	200,000	380,285	300,000	352,487	150,000	339,844	0	149,360	650,000	1,221,976
A.2.4	R&D project supply chain mgt	0	0											
B.1.1	Expert visit citrus production	60,000	1,920		0	34,507	0	0	0	0	0	0	60,000	36,427
B.1.2	Workshop citrus production	100,000	3,184		0	22,126	0	0	0	0	0	0	100,000	25,310
B.1.3	Training modules citrus production	0	0	}	100,000	197,619	250,000	197,394	150,000	172,733	0	86,550	500,000	654,296
B.1.5	R&D project citrus production	0	0											
B.1.4	Industry exposure visit	105,000	104,840		0	0	0	0	0	0	0	0	105,000	104,840
C.1.1	Scoping study/constraints analysis	100,000	21,823		0	96,411	0	0	0	0	0	0	100,000	118,234
C.1.2	R&D project dairy animal productivity	0	0	}	375,000	0	425,000	438,313	350,000	561,306	0	198,107	1,150,000	1,197,726
C.1.3	Training modules dairy production	0	0											
C.1.6	Evaluation of germplasm	0	0		105,000	0	0	40,000	0	0	0	0	105,000	40,000
C.1.4	Industry exposure visit	0	0		20,000	67,988	0	0	0	0	0	0	80,000	67,988
C.1.5	Sourcing and transfer of germplasm	60,000	0		78,500	0	113,500	0	104,000	0	0	0	325,000	16
	Contingency for changed priorities	29,000	16											
	<i>Subtotal - program activities</i>	<i>754,000</i>	<i>421,586</i>		<i>1,483,500</i>	<i>1,170,448</i>	<i>1,538,500</i>	<i>1,329,084</i>	<i>1,054,000</i>	<i>1,389,812</i>	<i>0</i>	<i>598,250</i>	<i>4,830,000</i>	<i>4,909,180</i>
	PSO salary and operating	21,000	12,671		31,500	34,266	31,500	31,500	31,000	31,000	0	0	115,000	109,437
	Travel	15,000	30,081		15,000	21,130	20,000	15,000	15,000	10,000	0	0	65,000	76,211
	Review						50,000	0	50,000				50,000	50,000
	<i>Subtotal ASLP management costs</i>	<i>36,000</i>	<i>42,752</i>		<i>46,500</i>	<i>55,396</i>	<i>101,500</i>	<i>46,500</i>	<i>46,000</i>	<i>91,000</i>	<i>0</i>	<i>0</i>	<i>230,000</i>	<i>235,648</i>
	<b>Total ASLP</b>	<b>790,000</b>	<b>464,338</b>		<b>1,530,000</b>	<b>1,225,844</b>	<b>1,640,000</b>	<b>1,375,584</b>	<b>1,100,000</b>	<b>1,480,812</b>	<b>0</b>	<b>598,250</b>	<b>5,060,000</b>	<b>5,144,828</b>

\* expenditure 06-07 as per ASLP Annual Report 06-07, table section 4.1, column 4

