



Key statistics

GDP per capita (US\$) ^a	1,010
Population (million) ^a	185
Funding	\$m
2009–10 actual	1.29
2010–11 budget allocation	2.43
2011–12 budget estimate	3.68

^a data from 2009 & 2010 <<http://unstats.un.org/unsd/demographic/products/socind/>>

Traditional packing of citrus fruits in wooden crates in Pakistan

MEDIUM-TERM STRATEGY

Australia's development strategy for Pakistan is to work with the Pakistan Government towards a stable, secure, democratic country through broad-based social and economic development and poverty reduction in line with the MDGs. Australia's program in Pakistan will be guided by the Australia–Pakistan Development Partnership. The program is based on four pillars:

- enhancing basic service delivery in health and education
- increasing agricultural productivity and improving rural livelihoods
- strengthening democratic governance
- supporting vulnerable populations through humanitarian assistance.

The second pillar of this strategy is detailed in the Australia–Pakistan Agricultural and Rural Development Strategy (APARDS). ACIAR collaborates closely with AusAID in the implementation of APARDS, notably in relation to the Australia–Pakistan Agriculture Sector Linkages Program (ASLP), which ACIAR is managing on behalf of AusAID.

Pakistan is a strategically important country, where the development challenges are considerable and were exacerbated by the unprecedented flood of 2010. Increasing pressure on availability of water resources for irrigation exists due to competing demands for urban and industrial uses. Poor irrigation management practices combined with poor drainage and soil management have resulted in significant salinity. High-value horticultural crops such as citrus and mangoes for both domestic and export

markets are an important source of farm income; however, crop management practices are often suboptimal and losses along the value chain are high. Pakistan is also one of the world's largest milk producers, with slightly less than half of that production from dairy cattle. Unit animal production is very low although genetic potential is quite good.

ACIAR's strategy for Pakistan is to work closely with the Pakistan Government, AusAID, other donor partners, NGOs and the Pakistani private sector to provide R&D and technical capacity building, technical support and carefully targeted R&D interventions to underpin Pakistan development programs. Poverty reduction, linking smallholders to markets, and gender equality are major issues for development programs in Pakistan, and are a key consideration for the ACIAR strategy. Australia is well placed to assist Pakistan in addressing irrigation, drainage and salinity management in major cropping systems, and this is an important focus of the program. ACIAR's work in dairy and horticulture in Pakistan revolves around the ASLP. A second phase of the ASLP is due to commence in early 2011, with the overall goal of collaboration to improve livelihood systems for the rural poor in Pakistan. The main objectives of ASLP 2 are to:

- foster value chains through commissioned R&D projects that enhance selected chains and benefit the rural poor through market and employment opportunities, addressing both technical and social issues to foster suitable outcomes
- enhance agricultural capability through 'smart linkages' and structured training that is responsive and catalytic, and complements the key initiatives supported under pro-poor value chains and other work

- encourage facilitation of well-grounded policy, codes of practice, or other operational frameworks or regulatory mechanisms that will 'enable' pro-poor value chains and more sustainable farming systems.

The ASLP extension will initially concentrate on the mango, citrus and dairy sectors, but with a greater focus on: gaining benefit for small and poor farmers and other disadvantaged groups; greater involvement of women; dissemination of results; and maximising project impacts. Flexibility will be built into the ASLP extension so that it can provide a mechanism for addressing additional sectors as well as agricultural R&D issues and enhanced capacity building.

Pakistan does not currently have a formal rural development strategy—the ACIAR strategy is based on informal consultation with Pakistan government agencies and other stakeholders. The most recent formal consultations were held in November 2008 during the review of the ASLP, which confirmed the importance of continuing research on dairy and efficient mango and citrus value chains. All continuing projects in Pakistan will include significant components of capacity building in participatory research and extension methodologies.

Key areas identified as research priorities across the medium term include:

- Developing more productive and competitive mango and citrus production and marketing systems
 - » Development, adaptation and adoption of integrated and sustainable management practices for horticultural and food sectors
 - » Analysis of strategic supply and value chains, and implementation of interventions to improve the efficiencies of these
- Improving livelihoods of dairy farmers
 - » Development of more-effective strategies for reducing risk and improving returns from smallholder dairy systems
 - » Development of improved dairy extension approaches
- Management of land and water resources to sustain productive enterprises
 - » Resource assessment and the development and implementation of sustainable management plans, with an emphasis on community engagement and increased community-level co-management

Dairy farmers at a buffalo farm, Sindh province, Pakistan, as part of an ACIAR project to improve production through extension services. Photographer: David McGill



- » Development, adaptation and adoption of irrigation, drainage and salinity management programs for major cropping systems
- Addressing policy, social and capacity constraints and issues
 - » Interventions to overcome cross-cutting economic, social and capacity constraints to smallholder household profitability/productivity
 - » Analysis of income utilisation, microfinance access, current production and marketing systems impacts on smallholder families, particularly with respect to equity, the role and effectiveness of women, and poor and other disadvantaged groups.

2011–12 RESEARCH PRIORITIES AND PROJECTS

Mango and citrus marketing and production systems

The horticulture sector in Pakistan is significant, both domestically and for export production; however, both mango and citrus experience major losses due to poor harvesting practices, packing and transportation. Key issues are inadequate orchard and irrigation/drainage management, and major diseases. Australia has strengths in mangoes and citrus that span the production system and supply chain, in particular the use of a systems approach and integration of end users in the planning, execution and evaluation of the research. The ASLP will capitalise on this by linking the Australian and Pakistan research teams with the agribusiness sector and introducing participatory activities with farmers.

HORT/2010/001 Mango value-chain improvement

This project aims to identify, develop and improve domestic and export value chains for Pakistan mangoes, with an emphasis on capacity building and linking poor farmers to markets in Sindh and Punjab provinces. The work will build on a previous project and include development of potential markets in China, Europe and the Middle East.

HORT/2010/002 The enhancement of citrus value-chain production in Pakistan and Australia through improved orchard management

This project will build on the citrus management technologies developed in a previous project. It will devise integrated approaches to citrus crop production in Punjab and Khyber Pakhtunkhwa provinces, with a focus on 'clean' planting material, superior cultivars and optimal tree management.

HORT/2010/006 Integrated crop management practices to enhance value-chain outcomes for the mango industry in Pakistan and Australia

Building on the results of an earlier project, this project will concentrate on the development of integrated approaches to mango production using 'clean' planting material, improved tree and crop management, IPM and postharvest management of fruit, with a particular focus on poor farmers in Punjab and Sindh provinces.

HORT/2011/002 ASLP agricultural capability

This project aims to develop capacity, technical skills and professional networks within the target ASLP sectors (mango, citrus, dairy and associated service support sectors) in all four provinces of Pakistan. A gap analysis will be conducted of skills training and capacity development needs, followed by the design and implementation of appropriate short-course training (in both Pakistan and Australia) and fellowships.

Dairy

Dairy is the largest livestock sector in Pakistan, with demand for milk and milk products growing at about 8% per year. Despite good genetic potential among animals, production is low due to poor nutrition, mismanagement, failure to control diseases and lack of proper marketing. This is compounded by a fragmented research effort and weak extension support services. The ASLP will support initiatives of the Pakistan Government to stimulate the dairy sector. The program will integrate activities and concentrate on mechanisms to increase individual animal production, principally through nutrition. The issues likely to be considered in this approach include social, economic and biophysical analysis of farming systems, development of seasonal feeding options, the introduction and evaluation of forages, and feed conservation strategies.

LPS/2010/007 Strengthening dairy value chains in Pakistan through improved farm management and more-effective extension services

Nearly 30% of household expenditure on food items in Pakistan is on milk and dairy products, which are mostly sourced from small farms comprising fewer than 10 animals. This project is addressing the marketing, production and extension constraints that keep most of these farms at very low levels of productivity (<5 litre/day).

LPS/2011/007 (proposed) Fodder seed systems for enhanced dairy production in Pakistan

The earlier LPS/2010/007 project focuses on options for managing fodder and alternative feeds to supply feed throughout the year to dairy cattle and buffalo. This sister project will identify options for formal and informal seed supply systems that ensure supply of good quality seed of adapted fodder varieties to small-scale farmers.



Dr Hafeez Ur Rehman (centre), an ACIAR citrus project coordinator in Pakistan, briefing ACIAR's Les Baxter (left) about the growth of recently imported germplasm from Australia

Land and water resources

Irrigated land supplies more than 90% of agricultural production in Pakistan. The main canal system and its secondary canals are managed at a provincial level by central irrigation agencies. Increasing competition for water by non-agricultural users will put additional strain on the systems, and there are uncertainties about future water supplies as a result of climate change. The cluster of projects in this subprogram is expected to have substantial linkages with the horticulture and dairy sectors, while improving the overall performance of the irrigation sector in Pakistan.

LWR/2005/144 Optimising canal and groundwater management to assist water-user associations in maximising crop productivity and managing salinisation in Pakistan and Australia

The project will develop tools for analysing hydrological and economic water management trade-off scenarios, use the results to develop improved canal and groundwater management options, and give support in implementing the improvements.

Policy, capacity building and social sciences

The 2009 scoping mission for APARDS identified enabling policy capacity and short-term training and capacity development opportunities as constraints to agricultural and rural development in Pakistan. Two components of the ASLP have been specifically designed to address these constraints. Social science R&D will provide valuable insights into the dynamics of poverty and gender inequality in Pakistan, as well as a better understanding of the drivers of, and barriers to, adoption of new technologies within these groups. The outputs of this work will provide valuable underpinning for the development of adoption strategies in the dairying and horticulture projects.

ADP/2010/091 ASLP enabling policy

This project aims to support the assessment and development of rural policy advice, legislation and codes of practice within Pakistan through capacity training, technical exchanges of staff and R&D interventions aimed at specific policy issues (with a particular focus on ASLP target sectors). Most of the work will be conducted in Islamabad and the provincial capitals of Sindh and Punjab in association with appropriate Pakistan collaborator agencies.

HORT/2010/003 Social research to foster effective collaboration and strengthen pro-poor value chains

This project aims to use social science methodologies to develop a better understanding of the dynamics of gender and the rural poor in Pakistan, including constraints and barriers to the adoption of new technologies and engagement of these groups with markets. This information will be used to underpin technical projects on dairy, mangoes and citrus, and will provide a robust basis on which to design and develop appropriate implementation and adoption strategies.

Principal regional coordinator

Dr John Dixon

Key program managers

Mr Les Baxter, Horticulture

Dr Simon Hearn, Agricultural Development Policy

Dr Peter Home, Livestock Production Systems

Dr Andrew Noble, Land and Water Resources

Dr Debbie Templeton, Impact Assessment

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KEY PERFORMANCE INDICATORS (2011–12)

- New/adapted integrated production technologies leading to increased productivity, enhanced nutrition, decreased water use, and resistance to pests and diseases being field tested under commercial conditions in citrus and mangoes
- Low-input extension approaches for improved small-scale dairy production identified and being trialled in at least two provinces
- Social, economic and environmental constraints to industry development by poor smallholder farmers and women identified and documented in at least two agricultural commodities
- At least one agricultural project designed and being implemented with the aim of environmental sustainability, reduced water use, reduced soil salinity and improved irrigation/water management
- Capacity constraints of farmers, researchers and extension staff in the citrus, mango, irrigation and dairy sectors identified and addressed through the design of an appropriate short-course training project