

# VIETNAM

## Key statistics

<b>GDP per capita (US\$)<sup>a</sup></b>	1,041
<b>Population (million)<sup>a</sup></b>	89
<b>Funding</b>	<b>\$m</b>
2009–10 actual	3.08
2010–11 budget allocation	3.73
2011–12 budget estimate	4.72

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

*Smallholders harvesting a variety of mustard leaves, Tien Giang province, Vietnam*

## MEDIUM-TERM STRATEGY

Australia's strategic approach to aid in Vietnam targets three core areas: human resource development, economic integration and environmental sustainability. ACIAR's Vietnam strategy is directly in line with the core area on environmental sustainability, but also encompasses the core component of human resource development. Vietnam's significant economic growth in agriculture (and the rest of the economy) is due to market competitiveness and demand for exports. The benefits of the significant economic growth to date have primarily influenced the urban areas of Ho Chi Minh City, Hanoi and adjacent regions, but rural areas are lagging. Vietnam will continue to have a comparatively high percentage of rural population over the next decade or two, and issues of rural poverty and structural adjustment remain at the top of the policy agenda. Productivity on a land or labour basis is still very low. The small scale of production on individual farms, the fragmented land holdings and increases in input costs are significant problems but also conceal huge potential. Ethnic minority groups and those in remote regions are particularly affected and the Vietnamese Government is providing greater focus on programs to assist these groups. ACIAR's program is designed to address some of these major areas where Australian expertise has the ability to impact positively.

ACIAR's program in Vietnam supports technical and agribusiness research to enhance smallholder incomes from selected areas of high-value agriculture, aquaculture and forestry. In recent years the program has focused on three geographic regions where poverty has persisted and where there are threats to sustaining the agricultural natural resource base.

These are also geographic regions where Australian agricultural technical skills have an ability to assist in development:

*Mekong Delta*, which is particularly vulnerable to the impacts of climate variability and change. A program focusing on climate-change adaptation and mitigation in rice systems in this region has been developed, and the emphasis of interventions at the farm scale complements catchment-level and whole-of-(Mekong)-basin programs on water and climate change supported by AusAID and other donors.

*South-central coast*, where research to underpin profitable but sustainable crop cultivation and livestock production systems in challenging environments (poor, sandy soils under water-limiting conditions), and research on the development of sustainable mariculture systems for high-value species, is ongoing.

*North-western highlands*, where opportunities exist for selected horticultural products (high-value temperate fruits and vegetables), sustainable production of cash crops (maize), and livestock and forestry products. Parallel research will focus on improving supply chains from smallholder farmers to more valuable markets.

Linkages to the programs of AusAID and other donors working in these regions are regularly identified and supported. ACIAR's projects are increasingly multidisciplinary, and there will be a particular focus on linking central research institutes with provincially based research and extension departments. ACIAR has a program of annual consultations with major partner organisations in Vietnam to discuss program strategies and new projects. Regional consultations to establish specific priorities for cooperation in south-central coastal Vietnam were held in March 2008 and for the north-western highland regions in September 2008. A formal consultation on research priorities for the fisheries

program was conducted in March 2011. The full record of the consultations is available at <aci-ar.gov.au>. The following key areas were identified as medium-term research priorities:

- Securing rice-based farming systems in the Mekong Delta through resilience to the negative impacts of climate change: (*provincial focus: Bac Lieu, An Giang*)
  - » Development of rice germplasm and agronomic approaches for rice-based farming systems to adapt to the impacts of inundation, salinisation and drought
  - » Capacity building in greenhouse gas measurement and nutrient input, and agronomic strategies for mitigation of greenhouse gas emissions
  - » Risk assessment of climate change to rice production in the Mekong Delta region, and analysis of technical and policy approaches to reduce emissions from rice-based systems
- Optimising resource management for profitable and sustainable agricultural production in south-central coastal Vietnam: (*provincial focus: Ninh Thuan, Phu Yen and Binh Dinh*)
  - » Analysis of markets and supply chains to identify critical points for selected commodities, to focus technical intervention for delivery of market impact
  - » Enhancements in supply-chain performance, including assessment of incentives for improved quality at the farmer level, for example better postharvest handling
  - » Development of sustainable cropping systems and agronomic practices that target available markets
  - » Sustainable irrigation practices that make greatest use of on-farm water resources and protect groundwater resources from salinisation
- Poverty reduction through market engagement for smallholder farmers in the northern and north-western highlands: (*provincial focus: Son La, Dien Bien, Lai Chau, Lao Cai*)
  - » Better integration of smallholder farmers into profitable markets for high-value crops through market and supply-chain analysis
  - » Improving production and processing technologies for temperate fruit and vegetables
  - » Improved natural resources management to sustain crop productivity and profitability on sloping lands through improving crop, nutrient and land management
- » Quantifying soil fertility changes under different cropping systems, and integration of local knowledge to improve management
- » Improved management and marketing systems for smallholder ruminants and pigs, and improved feed availability and integration of appropriate forage varieties into the farming system
- » Improved management of reproduction and disease prevention and control
- » Enhanced capacity of local service providers (public and private sector) through alternative methods of delivery
- Development of high-value aquaculture industries: (*regional focus: Mekong Delta (Can Tho, Bac Lieu), central coast (Khanh Hoa), north-eastern Vietnam (Hai Phong, Quang Ninh)*)
  - » Introduction of cost-effective and environmentally friendly aquaculture feeds
  - » Development of profitable and environmentally responsible grow-out technologies for marine cage culture and pond culture of lobsters, and hatchery production and grow-out of molluscs
  - » Transfer of existing knowledge from ACIAR aquaculture projects to producers, government extension agencies and universities
- Towards higher value plantation forestry products: (*regional focus: northern Vietnam (Phu Tho), central Vietnam (Quang Tri), southern Vietnam (Bin Duong)*)
  - » Development of sustainable high-value technologies for fast-growing forest plantations suitable for smallholders, particularly on degraded soils
  - » Improvement of plantation wood-processing efficiency, especially for small eucalypts and acacias, through development of engineered products.

## 2011–12 RESEARCH PRIORITIES AND PROJECTS

### Securing rice-based farming systems in the Mekong Delta through resilience to the negative impacts of climate change

As a major rice exporter, Vietnam is a significant contributor to regional food security, but low-lying areas in the Mekong Delta are particularly prone to the anticipated negative impacts of climate change. The main aim of the program is to assist adaptation to climate change at the farm level, emphasising more-efficient use of soil and water resources.



*Sorting juvenile sea cucumbers at a research station in Nha Trang, Vietnam*

**SMCN/2009/021** Climate change affecting land use in the Mekong Delta: adaptation of rice-based cropping systems (CLUES)

The overall aim of the project is to increase the adaptive capacity of rice production systems in the Mekong Delta region affected by climate change.

**SMCN/2010/083** Adaptation to climate change in rice–aquaculture farming systems in the Mekong Delta

Research is focused on key issues such as: (1) pond design—soil management (indicators for soil suitability) and water management (at the farm, club scale; disease minimisation); (2) farm management—crop calendar, stocking density and practices for optimum productivity of shrimp and rice; and (3) institutional arrangements—community management, protecting the environment, technology transfer/extension/education.

**Optimising resource management for profitable and sustainable agricultural production in south-central coastal Vietnam**

The initial integrating focus is on development of more-profitable but sustainable field and tree crop cultivation and beef cattle production systems in challenging environments (poor sandy soils under water-limiting conditions) through technical cooperation in areas where Australian agencies have the necessary expertise. Initially, the emphasis will be on parts of the drier central and southern provinces, particularly on coastal and sloping areas less than 400 m above sea level. Research will address the vulnerability of the central coast of Vietnam to the negative impacts of climate change and desertification.

**SMCN/2003/035** Improving the utilisation of water and soil resources for tree crop production in coastal areas of Vietnam and New South Wales

The aim of this project is to improve smallholders' incomes by increasing the profitability of production of tree crops such as cashew nut.

**SMCN/2007/109** Sustainable and profitable crop and livestock systems for south-central coastal Vietnam

This multidisciplinary project (crops, livestock and agribusiness) aims to identify and facilitate adoption of promising resource management practices for sustainable and profitable crop and livestock production systems.

**Poverty reduction through market engagement for smallholder farmers in the northern and north-western highlands**

Many smallholder farmers in the north-western highlands have not seen the same benefits to livelihood improvements from engagement in the global economy as has the rest of Vietnam. Emerging markets created by improved infrastructure development have created an opportunity for market engagement by smallholder farmers. To meet increasing market demand, which is changing rapidly, farmers from the north-western highlands are expanding cultivation, especially of maize, onto sloping lands. With changing dietary preferences, livestock and other high-valued production is providing an opportunity for smallholder farmers to integrate these products as components of their farming systems.

### AGB/2006/066 Improving productivity and fruit quality of sweet persimmon in Vietnam and Australia

This project is enhancing the productivity, yield and fruit quality aspects of persimmon in Vietnam by changing from the traditional astringent varieties to new non-astringent varieties. Appropriate farmer development practices being used are based on low-level technologies, best orchard management practices and new handling systems.

### AGB/2006/112 Increasing the safe production, promotion and utilisation of indigenous vegetables by women in Vietnam and Australia

The project is developing and testing models that improve the profitability of women farmers supplying indigenous vegetables into transforming markets. It will develop effective communication strategies for women farmers that encourage practice change in both the production and marketing of their crop.

### AGB/2008/002 Improved upland production systems and agricultural market engagement in the north-western highlands of Vietnam

The aim of the project is to increase smallholder engagement in competitive value chains associated with maize- and temperate-fruit-based farming systems, while improving land and crop management practices, for the development of sustainable and profitable farming systems.

### AGB/2009/053 Improved market engagement for counter-seasonal vegetable producers in north-western Vietnam

Vietnam's growing retail sector has limited access to supplies of temperate vegetables in the north during

summer. The project aims to understand and support smallholder farmers' interaction with large, modern retailers in northern Vietnam.

### FST/2010/034 (proposed) Trees for improving the livelihoods of smallholder farmers in north-western Vietnam

This project aims to improve the performance of smallholder farming systems through agroforestry in Son La, Dien Bien and Yen Bai provinces.

### LPS/2008/049 Overcoming technical and market constraints to the emergence of profitable beef enterprises in the north-western highlands of Vietnam

Market demand for beef is increasing rapidly in Vietnam, but domestic beef production is unable to meet this demand. This new project aims to develop, evaluate and implement technical and market strategies to improve smallholder incomes from beef cattle in this region.

### Development of high-value aquaculture industries

The Vietnamese Government has invested heavily in research infrastructure and staff development for aquaculture. The ACIAR program has been tailored to complement this effort through targeted capacity building in key skill areas (genetics, fish nutrition), and the timely transfer and adaptation of suitable aquaculture technologies developed elsewhere under ACIAR-supported programs. Fish nutrition remains an important action area.

*Vietnamese worker at a research site near Cat Ba, Halong Bay, part of an ACIAR fisheries project*





*A Vietnamese woman delivering ice to the Vandon fish port, Quang Ninh province*

### **FIS/2003/059** Sea-ranching and restocking sandfish (*Holothuria scabra*) in the Asia–Pacific region

Technologies for producing sandfish in hatcheries (FIS/1995/703) and for releasing them in the wild (FIS/1999/025) have been developed. This project, which is being implemented in the Philippines, Vietnam and northern Australia, is replenishing selected sandfish populations through restocking into ponds and marine reserves, and evaluating a new livelihood option through releasing cultured sandfish in managed inshore habitats.

### **FIS/2005/114** Building bivalve hatchery production capacity in Vietnam and Australia

The project has been outstandingly successful in facilitating the development of an oyster farming industry in northern Vietnam. With production growing rapidly and expected to exceed 5,000 tonnes this year, the current emphasis is on refining hatchery production technology to ensure that seed supply meets rising demand.

### **FIS/2006/141** Improving feed sustainability for marine aquaculture in Vietnam and Australia

The project is being implemented in conjunction with the Vietnamese Government's aquaculture research institutes in Hanoi, Nha Trang and Ho Chi Minh City, as well as the University of Nha Trang.

### **FIS/2011/008** Development of land-based lobster production systems in Vietnam and Australia

This project will enable an assessment of lobster production in tanks, using under-utilised shrimp hatchery infrastructure.

### **SMAR/2008/021** Spiny lobster aquaculture development in Indonesia, Vietnam and Australia

This project is supporting the sustainable development of lobster farming in Indonesia and Vietnam to meet strong global demand, primarily from China, for high-value tropical lobsters. It addresses sustainability issues for the existing lobster farming industry in Vietnam and provides verification of lobster grow-out at commercial scale in Australia.

### **Towards higher value plantation forestry products**

Vietnam has nearly 1 million hectares of plantations of Australian acacias and eucalypts. These plantations supply major processing industries and export markets, generating substantial income for the smallholder plantation owners and the people engaged in forest industries. The forestry program adds value through deployment of improved genetic material, development of better silvicultural practices and expansion of value-adding of the plantation products.

### **FST/2006/087** Optimising silvicultural management and productivity of high-quality acacia plantations, especially for sawlogs

The aim of this project is to develop silvicultural systems that enhance the sustainability and profitability of plantations managed for sawlogs in the smallholder and community sectors.

### **FST/2008/007** Development of a sophisticated clonal deployment strategy for hybrid acacias in Vietnam

This project aims to add value to Vietnam's acacia tree improvement program, including development and deployment of hybrid clones and polyploid varieties.

This year the project will screen and plant at least 100 hybrid clones and evaluate hedge management options.

### FST/2008/039 Enhancement of veneer products from acacia and eucalypt plantations in Vietnam and Australia

The aim of this project is to improve the production of plantation-derived veneer products to enhance livelihoods for Vietnamese smallholders and increase markets for Australian acacia and eucalypt plantation products.

### Other projects

#### AGB/2005/113 Structural adjustment implications of trade liberalisation in Vietnam

This project is designed to develop capacity in the partner institution for quantitative analysis of structural adjustment issues, and provide policy advice on these issues.

#### AH/2010/045 Sustainable assessment of livestock movement and disease risk in the Mekong region

Regional movement of livestock is associated with disease transmission, especially FMD in cattle and pigs and CSF in pigs. This project will develop improved methods to assess disease risk and strategies for disease control, based on methods and data acquired in a previous project in Laos and Cambodia, in the six countries of the AusAID-supported South-East Asia and China Foot and Mouth Disease Campaign (SEACFMD) program implemented by the World Organisation for Animal Health (OIE): Laos, Cambodia, Vietnam, China, Thailand and Myanmar.

#### LPS/2010/047 (multilateral, ILRI) Supporting small-scale pig production in Vietnam through reducing disease risk, enhancing productivity and upgrading value chains

This project will use a risk-based approach to improve poor value-chain performance and reduce risks to animal and human health.

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#### Key program managers

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Mr Tony Bartlett, Forestry

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Dr Doug Gray, Animal Health

#### Country manager

Mr Geoff Morris



Processing sandfish, a type of sea cucumber, in Nha Trang, Vietnam

## KEY PERFORMANCE INDICATORS (2011–12)

- Integrated food/tree crop management practices developed for improving productivity in the south-central coast
- Diversification options, and options to increase productivity per unit of water, explored with a view to making rice-based production systems in the Mekong Delta more resilient to the negative impacts of climate change
- Various approaches tested in three projects to improve smallholder farmer livelihoods in the south-central coast and north-western highlands through improved productivity and market engagement
- New high-value markets investigated for agroforestry and plantation products
- A regional partnership program created between OIE, SEACFMD and participating countries to assess and control livestock biosecurity risks
- Improved tripartite linkages established between Vietnamese regional institutions, Vietnamese national institutions and Australian researchers in the three target geographic regions