

Landcare Research New Zealand Ltd



***International Business Group
2003***

The Organisation

Landcare Research New Zealand Ltd is New Zealand's leading environmental consultancy and research company. It focuses on sustainable land management practices including the economic, social and cultural impacts of using land resources.

Landcare Research, a Crown Research Institute, was established in July 1992 and comprises 6 main science groups:

- Biodiversity and Conservation
- Biosecurity and Ecosystem Processes
- Rural Land Use Effects
- Greenhouse Gases and Carbon Sinks
- Sustainable Businesses and Government
- Urban Environmental Management.

Strong links with conservation, agriculture, forestry, water and atmosphere research groups enable us to provide information on and solutions to vital questions concerning land, soil, plants, animals and their interaction.

Over 400 Landcare Research staff are involved in delivering high quality science and practical results through research, consultancy advice, technological developments, education and training programmes.

Our clients include bilateral and multilateral agencies, governments and government agencies plus NGOs and private stakeholders.

The International Business Group (IBG) is responsible for project development and management. Located at the Landcare Research corporate office at Lincoln, New Zealand, the IBG provides full technical, administrative and liaison support to our specialists in the field.

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Resources and Approach

- Key Facts

- ▶ Landcare Research staff and associate consultants have conducted over 215 consultancies in 42 countries in the last 25 years in Asia, the Pacific, Africa, the Middle East and the Americas.
- ▶ 400 Landcare Research staff work at 9 locations throughout New Zealand.
- ▶ We are registered with bilateral, multilateral and UN agencies and all major primary Asia - Pacific regional agencies and programmes.
- ▶ We have developed and managed extensive natural resource databases, particularly for the Pacific area.
- ▶ The International Business Group comprises an experienced project management team who have a reputation for quality technical output and reporting on projects.
- ▶ We hold the largest (25,000 books, 31,000 serials) environmental library in New Zealand; specialising in botany, soils and ecology with a significant content in agriculture and forestry.
- ▶ We have a long record in human resource development with particular experience in customised training programmes, workshops and study tours.
- ▶ Our experience also includes public sector restructuring, capacity building and institutional development.
- ▶ We have wide experience in the application of the globally acclaimed New Zealand Resource Management and Environmental legislation.
- ▶ Our consultants are encouraged to involve participatory planning to ensure sound project design and outcomes recognising at all times gender and poverty alleviation issues.
- ▶ Importance is placed on the adoption of proven technologies to various biophysical, political and socio-economic conditions, with sensitivity towards client needs and sustainability.

Expertise

NATURAL RESOURCE ASSESSMENT, PLANNING AND MANAGEMENT

- ▶ Remotely sensed data for resource management
- ▶ Soil survey, characterisation and classification
- ▶ Soil analysis, laboratory methods
- ▶ Urban land use capability mapping and assessment
- ▶ GIS analysis of natural resource data / biophysical databases
- ▶ Land use suitability assessment (crop specific)
- ▶ Land evaluation / Land use planning
- ▶ Natural hazard assessment and mitigation
- ▶ Indigenous forest inventory
- ▶ Resource economics

RURAL DEVELOPMENT AND POVERTY ALLEVIATION

- ▶ Integrated rural development
- ▶ Socio-economic surveys
- ▶ Social impact analysis
- ▶ Participatory processes (RRA, PRA etc)
- ▶ Gender and development
- ▶ Land tenure
- ▶ Community (health, education etc) development
- ▶ Infrastructure (water supply, sanitation) development
- ▶ Analysis of rural poverty
- ▶ Poverty reduction strategies
- ▶ Agriculture development
- ▶ Farming systems
- ▶ Agriculture economics
- ▶ Agri-business
- ▶ Agroforestry
- ▶ Forest production and management
- ▶ Forest harvest planning
- ▶ Monitoring and evaluation

SUSTAINABLE LAND USE

- ▶ Soil quality indicators and assessment / Visual soil assessment
- ▶ Sustaining and managing soil quality
- ▶ Soil management
- ▶ Mitigating adverse impacts of land use
- ▶ Managing multiple land uses
- ▶ Land rehabilitation
- ▶ Use of surrogate soil materials
- ▶ Soil pollution (organic wastes, pesticides, heavy metal contamination)
- ▶ Planning and management of effluent and waste disposal

WATERSHED MANAGEMENT AND SOIL CONSERVATION

- ▶ Catchment and landscape processes
- ▶ Integrated watershed management and planning
- ▶ Erosion mapping and analysis
- ▶ Stabilising slopes / bio-engineering and erosion control

BIODIVERSITY AND CONSERVATION

- ▶ Flora and fauna surveys
- ▶ Forest inventory and ecological characterisation
- ▶ Biosystematics and collections of flora and fauna, including invertebrates, fungi and bacteria
- ▶ Endangered species
- ▶ Processes/threats that impact on biodiversity
- ▶ Restoration and managing remnant 'indigenous' habitats
- ▶ Ethnobotany and traditional use of plants
- ▶ Protected area planning
- ▶ Development and management of parks and reserves
- ▶ Ecotourism

ENVIRONMENT

- ▶ Ecological mapping, analysis and management
- ▶ Land environments (domains), classification and mapping
- ▶ Remote sensing applications in environmental monitoring
- ▶ Surveys and assessments (EIA, ESA, IEE etc)
- ▶ Ecological toxicity testing (pesticides etc)
- ▶ Indicator species for environmental monitoring
- ▶ Assessing risks of contaminants on the environment
- ▶ Bio-indicators of agri-chemical impacts
- ▶ Kyoto protocol commitments
 - Indigenous vegetation restoration to mitigate greenhouse gas emission
 - Quantifying production of greenhouse gases
 - Increasing carbon sequestration
 - Estimating greenhouse gas emissions and sinks
 - Impacts of CO₂ and global warming on ecosystems
 - Carbon budgets for terrestrial ecosystem
 - Estimating national forest carbon stocks

BIOSECURITY AND PEST MANAGEMENT

- ▶ Identification of plants and invertebrates
- ▶ Assessing biosecurity risks for weeds and pests
- ▶ Ecology and impacts of pests
- ▶ Biological control of weeds
- ▶ Pest control method development and management
- ▶ Management of large feral animals (deer, thar, chamois)
- ▶ Wildlife management

INSTITUTIONAL DEVELOPMENT

- ▶ Skills and training needs analysis
- ▶ Training and capacity building
- ▶ Institutional analysis
- ▶ Development of organisational capacity
- ▶ Research sector review and reform
- ▶ Policy frameworks for sustainable development
- ▶ Reform of environmental practice

SUSTAINABLE BUSINESS AND GOVERNMENT

- ▶ Environmental accounting (Enviro-mark™)
- ▶ Triple Bottom Line (TBL) advisory service
- ▶ Managing waste
- ▶ Reducing greenhouse gas emissions (EBEX 21)
- ▶ Building sustainable organisations
- ▶ Sustainable tourism

IT DEVELOPMENT AND APPLICATIONS

- ▶ Remotely sensed image processing and enhancement
- ▶ GIS system design and development
- ▶ Systems management
- ▶ Database design and management
- ▶ Agency for satellite imaging (SPOT, LANDSAT etc)

PROJECT MANAGEMENT

- ▶ Project identification, design, supervision and implementation
- ▶ Project feasibility studies
- ▶ Project administration and management
- ▶ Project monitoring and evaluation

International Business Group

Principal Clients and Associate Firms

We are registered with these agencies

BILATERAL AND MULTILATERAL AGENCIES

- ▶ Asian Development Bank (ADB)
- ▶ Australian Agency for International Development (AusAID)
- ▶ Commonwealth Fund for Technical Cooperation (CFTC)
- ▶ Food and Agriculture Organisation of the UN (FAO)
- ▶ International Fund for Agricultural Development (IFAD)
- ▶ New Zealand Agency for International Development (NZAID)
- ▶ Secretariat of the Pacific Community (SPC)
- ▶ South Pacific Regional Environment Programme (SPREP)
- ▶ United Nations Department for Technical Cooperation and Development (UNDTCD)
- ▶ United Nations Development Programme (UNDP)
- ▶ United Nations Environment Programme (UNEP)
- ▶ United Nations Office for Project Services (UNOPS)
- ▶ United States Agency for International Development (USAID)
- ▶ World Bank (WB)
- ▶ World Food Programme (WFP)

NEW ZEALAND GOVERNMENT AGENCIES

- ▶ AgResearch NZ Ltd
- ▶ Department of Conservation (DOC)
- ▶ Department of Survey and Land Information (DOSLI)
- ▶ Forest Research Institute (FRI)
- ▶ National Institute of Water and Atmospheric Research (NIWA)
- ▶ Hort+Research NZ Limited

ASSOCIATE CONSULTING FIRMS/NGOs

- ▶ ACIL Pty Ltd (Aust)
- ▶ ANZDEC (1995) Ltd (NZ)
- ▶ DHV
- ▶ Hassall & Assoc Pty Ltd (Aust)
- ▶ Lincoln International NZ Ltd
- ▶ Montgomery Watson Hauser
- ▶ The Nature Conservancy (TNC)
- ▶ URS Sustainable Development

Countries of Work Experience

PACIFIC

American Samoa
Australia
Cook Islands
Federated States of Micronesia
Fiji
French Polynesia
Guam
Kiribati
New Caledonia
New Zealand
Niue
Palau
Papua New Guinea
Solomon Islands
Tonga
Vanuatu
Western Samoa

AMERICAS

Argentina
Brazil
Canada
Chile
Ecuador
Jamaica
Peru
United States of America

ANTARCTICA

Ross Sea Dependency

ASIA

Bhutan
Brunei
China
Indonesia
Japan
Malaysia
Nepal
Pakistan
Philippines
Singapore
Sri Lanka
Thailand
Vietnam

MIDDLE EAST

Egypt
Iran
Iraq
Oman
Turkey
United Arab Emirates

AFRICA

Botswana
Kenya
Mauritius
Mozambique
Zaire

International Project Experience

Summary of projects carried out during the last 10 years

Our expertise includes:

- ▶ project identification
- ▶ appraisal and design
- ▶ implementation
- ▶ monitoring and evaluation
- ▶ supervision and management

COUNTRY	PROJECT	CLIENT
Natural Resource Assessment, Planning and Management		
China 1991	Integrated Natural Resources Sectoral Study	FAO / World Food Programme
Mozambique 1991	Land and Water Resources Evaluation for Land Use Planning	With ANZDEC NZ Ltd for UNDP
Botswana 1990	Soil Mapping and Advisory Services	With ANZDEC NZ Ltd for UNDP
Mozambique 1989	Land Resources Evaluation for Land Use Planning	With ANZDEC NZ Ltd for UNDP
Samoa 1989	Land Resources Planning	ADB
Cook Islands 1988-1990	Cook Islands Land Use Capability	NZAID
Sri Lanka 1986	Land Use Planning	With ANZDEC NZ Ltd for ADB
Fiji 1981-1988	National Soil Survey and Land Appraisal	NZAID
Fiji 1980-1988	Soil Survey in 10 Experimental Stations	NZAID
USA-New Zealand 1978-1990	International Committee on the Classification of Andisols	USDA / USAID
Niue 1978-1980	National Soil Survey and Land Appraisal	NZAID
Cook Islands 1976-1980	Fertility and Hydraulic Properties of Selected Cook Island Soils	NZAID
Tonga 1975-1978	National Soil Survey and Land Appraisal	NZAID
Cook Islands 1974-1978	Cook Island Soil and Land Resources Survey	NZAID
Samoa 1956-1958	Soils and Land Use of Western Samoa	NZAID
Environment, Biodiversity and Conservation		
China 2000-2001	Yunnan Comprehensive Agricultural Development and Biodiversity Conservation	ADB
Sri Lanka 1997	Development of Wildlife Conservation and Protected Area Management	FAO/GEF

COUNTRY	PROJECT	CLIENT
China 1993-1994	GEF Biodiversity – Nature Reserve Investment	World Bank
Worldwide 1992	Principles and Practice of Plant Conservation	IUCN/WWF
Solomon Islands 1991-1995	Environmental Monitoring	Kolombangara Forest Products Ltd
Mauritius 1988	Restoration of Round Island	Gvt of Mauritius/ Jersey Wildlife Preservation Trust
Australia 1987	Rare and Endangered Plants of Norfolk Island	Australian National Parks and Wildlife Service
New Zealand 1983-1994	Biodiversity and Threatened Species Research Programme	Foundation for Research Science and Technology
Pacific 1982-1983	Bird Conservation in the Pacific Islands	SPREP/ICBP
Tonga 1977-1992	Flora of the Kingdom of Tonga	NZAID
Cook Islands 1974-1985	Flora of the Cook Islands	NZAID
Niue 1965-1970	Flora of Niue	NZAID
Pacific Region 1938-ongoing	Pacific Island Plant Archive	Gvt of New Zealand

Soil Conservation and Watershed Management

China 1999-2000	Alxa League Environmental Rehabilitation and Management Project, Inner Mongolia	With ACIL Pty for AusAID
Fiji 1998-2000	Review of Land Use Practice and Policy	GTZ
China 1995-2000	Hebei Watershed Management and Livestock Production	With ACIL Pty for AusAID
Indonesia 1995-1998	National Watershed Management and Conservation	With DHV For World Bank
Indonesia 1995-1996	NTT Watershed Management Planning	With ACIL Pty for AusAID
FSM 1994-1996	Watershed Management and Environment, Pohnpei	ADB
Samoa 1994	Watershed Management Review	With Groome Pöyry Ltd for NZAID
Viet Nam 1993	Integrated Watershed Management: Pilot Study (Son La Province)	With ANZDEC Ltd for NZAID
Nepal 1991	Watershed Management	FAO
Indonesia 1989	Watershed Technology Development	FAO
Solomon Islands 1989	Hazard Mapping North Guadalcanal	UNDTCD
Indonesia 1988-1993	Indonesia-New Zealand Land Resources Mapping Project (LRMP)	NZAID
Pakistan 1987	Watershed Management	FAO
Solomon Islands 1986	Cyclone Damage Mapping	With NZ Aerial Mapping for NZAID

COUNTRY	PROJECT	CLIENT
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Agricultural and Forestry Development

Niue 2000-2003	Niue Forestry	NZAID
China 1999-ongoing	Jiangxi Integrated Agricultural Modernization	World Bank
China 1999-2000	Policies and Strategies for Sustainable Development of the Lancang River Basin	ADB
Philippines 1998	Bukidnon Forests Mapping and Information Systems	NZAID
Pacific 1996-ongoing	South Pacific Agricultural Chemistry Laboratory Network	With IBSRAM for NZAID
China 1996-1998	Capacity Building for Soil Conservation and Rural Development	With Lincoln International for the ADB
China 1996-1997	Land Use and Land Tenure Policy in Fujian Province	ADB
Tonga 1995-2001	Tonga Forestry Management Services Contract	NZAID
China 1995	Dongying Integrated Land Use Project Feasibility Study	NZAID
Malaysia 1995	Land Use Planning in East and Peninsula Malaysia	ADB
Philippines 1995	Review of Social Forestry	NZAID
Solomon Islands 1994-1995	Timber Control	With FORTECH Ltd for AusAID
China 1994	Integrated Agricultural Development, Wuling	World Food Programme
China 1994	Shandong Agriculture Pre-feasibility Study	NZAID
FSM 1994	Agricultural Development Pre-feasibility Mission	ADB
Solomon Islands 1994	Forest Harvesting –Logging Controls and Environmental Impacts	FORTECH LTD
Tonga 1989	Tongan Forestry Subsector Review	ADB
Pacific 1988-1994	Pacific Agricultural Information System (PAIS)	SPC
Kenya 1988	Forest Resources Development Plan	FAO
Pacific 1984-1990	Oceania Benchmark Sites Network for Agrotechnology Transfer (OBSNAT)	SPC
Fiji 1983-1998	Fiji Soil and Crop Evaluation Project (SCEP)	AusAID / NZAID
Fiji 1982-1984	Soil Characterisation at Forest Permanent Sampling Plots	Fiji Pine Commission

Pest and Disease, Biosecurity and Quarantine

Fiji 2002-2003	Pest Survey of Agricultural Crops & Commodities	GOF
Indonesia 2000	Integrated Pest Management Project – Mycology Training	With ACIL Pty for the ADB
Australia 1995	Rat Control Programme, Norfolk Island	With ACIL Pty for Australian Nature Conservancy Agency
New Zealand 1993-1996	National Pest Control Planning	NZ Dept of Conservation
Australia 1992	Browse Management in Eucalypt Forests	APM Forests Ltd

COUNTRY	PROJECT	CLIENT
Australia 1992-1993	Browsing by Native Animals in Plantation Forests	APM Forests Ltd
New Zealand 1991-ongoing	Wasp Impacts on Indigenous Flora and Fauna	Foundation for Research Science and Technology
Spain, Portugal 1991-1992	Biological Control Agents for Gorse (Ulex Europa)	International Institute of Biological Control
Australia 1989-1991	Chemical Lures for Dingoes	Australian Meat and Livestock Research and Development Corporation
Australia 1989-1993	Control of Feral Goats	Australian Bureau of Rural Sciences
New Zealand 1988-1992	National Survey of Hunting in New Zealand in 1988	NZ Foundation for Research Science and Technology / NZ Ministry of Forestry
Micronesia 1986-1991	Plant Diseases in Micronesia	SPC/College of Micronesia
Solomon Islands, Samoa 1986-1989	<i>Marasmiellus</i> Diseases of Coconuts	FAO / SPC / GTZ
Pacific Region 1978-1989	Pacific Plant Disease Survey	SPC, Pacific FORUM, NZAID

Poverty Alleviation

China 2000-ongoing	Gansu and Inner Mongolia Poverty Reduction	World Bank
China 2000-2001	Yunnan Comprehensive Agricultural Development and Biodiversity Conservation	ADB
Viet Nam 1999-2002	Gia Lai Agroforestry Extension Support (Phase II)	NZAID
Viet Nam 1998-ongoing	Northern Mountains Poverty Reduction	World Bank
China 1998-2004	Zhongdian Integrated Rural Development	NZAID
China 1996-2003	Qinba Mountains Poverty Reduction	World Bank
China 1995-2001	Wulian Apple Grower's Assistance	NZAID
China 1995-2001	South West Poverty Reduction	World Bank / NZAID
China 1992-1998	Integrated Land Use Systems	NZAID

Rural and Community Development

China 2000-2006	Ganzi Hydatid Control and Community Health	NZAID
China 2000-2001	Yunnan Comprehensive Agricultural Development and Biodiversity Conservation	ADB
Viet Nam 1999-2002	Gia Lai Agroforestry Extension Support (Phase II)	NZAID
China 1998-2004	Zhongdian Integrated Rural Development	NZAID
China 1995-2001	Wulian Apple Grower's Assistance	NZAID

COUNTRY	PROJECT	CLIENT
China 1992-1998	Integrated Land Use Systems	NZAID
China 1990-1995	Shouning Social Forestry	With Groome Pöyry Ltd for NZAID

Information Systems (GIS, RS)

New Zealand 1997-1998	Development of Internet Access to Environmental Databases	NZ Foundation of Research, Science and Technology
Fiji 1997	Review of Fiji Land Information System	NZAID
New Zealand 1996-1999	Distributed Information Systems	NZ Foundation of Research, Science and Technology
Turkey 1996-1997	GIS/Remote Sensing for Soil and Water Research	Govt of Turkey / World Bank
Indonesia 1996	Application Training in GIS for Land Resource Evaluation and Planning	Govt of Indonesia / ADB
Fiji 1995-1996	Environmental Awareness, Legislation and Database	ADB
Pacific 1994	SPREP (Samoa) GIS Support	UNEP / GRID
Cook Islands 1993-1996	GIS Development	With ANZDEC for NZAID
PNG 1993-1995	Development of Papua New Guinea Resource Information System Phases II and III	With CSIRO for AusAID
Pacific 1993-1994	Inventory of Regional Capacity in GIS and Remote Sensing	UNEP / GRID
Iran 1991	Remote Sensing, GIS and Land Evaluation for Dryland Agricultural Management	Govt of Iran, Ministry of Agriculture
Pacific 1990-ongoing	Computerized Plant Protection Database for the Pacific	SPC
Pacific 1990-1992	Insect Database for the Pacific	FAO/UNDP
Pacific Regional 1938-ongoing	Pacific Soils Database	Govt of New Zealand

Institutional Development and Capacity Building

Bhutan 2001	Institutional Development of the National Technical Training Authority	With Korea Human Resource Development / Sherpa Consulting for the ADB
Nepal 2000	Basic Education	With Polytechnics International NZ Ltd for the ADB
Philippines 2000	Post-Implementation Review of the Philippines/New Zealand In-Country Training Programme	NZAID
Australia 1997	Review of Centre for Natural Resources	Dept of Land and Water Conservation
New Zealand 1996	LREP IID: Strengthening Provincial Physical Planning Capability	Govt of Indonesia / ADB

COUNTRY	PROJECT	CLIENT
FSM 1995	GIS Training	Govt of FSM
PNG 1995	PACIFICLANDS Workshop	IBSRAM
Tonga 1995	Tonga Forestry Training	NZAID
Tonga 1992	Soil Fertility and Land Evaluation Training Workshop	AusAID
New Zealand 1991-1992	Establishment of Landcare Research NZ Limited	Govt of New Zealand
Iran 1991	Training: Remote Sensing / GIS	Govt of Iran
Indonesia 1989	Mining Rehabilitation Workshop and Training	FAO
Indonesia 1989	Training Course: Geographic Information Systems	NZAID
Indonesia 1989	Watershed Management Workshop	FAO
Iran 1989	In Service Training in Watershed Management	UNDP / FAO
PNG 1989	PACIFICLAND Training Workshop	IBSRAM
Indonesia, PNG, Solomon Islands 1988-1990	Training Workshops in Soil Conservation and Watershed Management (3)	FAO / IBSRAM / ASOCON
New Zealand 1988	Training in Environmental Monitoring	PNG Dept of Environment and Conservation
Fiji / NZ 1987	Training in Soils Survey, Classification and Analysis	NZAID
Fiji 1986	Experimental Methods Training Course	NZAID
Tonga 1984	Soil and Plant Analysis Laboratory: Institutional Strengthening	NZAID
Pacific 1981-1986	Training Forums on Soil Taxonomy and Agrotechnology Transfer (4)	USDA / SCS – USAID
Fiji 1980-1989	Training in Soil Analytical Techniques (5)	NZAID
NZ, American Samoa, Tonga, Solomon Islands 1979-1989	Plant Protection Workshops	SPC / NZAID
Cook Islands, Niue, Tonga 1975-1979	Soils and Land Use Seminars in Polynesia	NZAID
Samoa 1970-1971	Capacity Building in Soil and Foliar Analysis	FAO

Project Design, Feasibility and Evaluation

China 2000-2002	Gansu Integrated Rural Development	NZAID
China 2000-2001	Yunnan Comprehensive Agricultural Development and Biodiversity Conservation	ADB
Philippines 2000	Post-Implementation Review of the Philippines/New Zealand In-country Training Programme	NZAID
Tonga 1995-2001	Tonga Forestry Management Services Contract	NZAID
China 1994	Three Gorges Project Feasibility/design	NZAID
Cook Islands 1993-1996	GIS Development	With ANZDEC Ltd for NZAID
China 1992-1998	Integrated Land Use Systems	NZAID

COUNTRY	PROJECT	CLIENT
Pacific 1988-1994	Pacific Agricultural Information System	SPC
Indonesia 1988-1993	Indonesia-New Zealand Land Resources Mapping Project (LRMP)	NZAID
Fiji 1981-1988	National Soil Survey and Land Appraisal	NZAID

Project Management

China 2000-2006	Ganzi Hydatid Control and Community Health Project	NZAID
Niue 2000-2003	Niue Forestry	NZAID
China 2000-2002	Gansu Integrated Rural Development Project	NZAID
China 2000-2001	Yunnan Comprehensive Agricultural Development and Biodiversity Conservation	ADB
Viet Nam 1999-2002	Gia Lai Agroforestry Extension Support (Phase II)	NZAID
China 1999-2000	Policies and Strategies for Sustainable Development of the Lancang River Basin	ADB
China 1998-2004	Zhongdian Integrated Rural Development	NZAID
Pacific 1996-ongoing	South Pacific Agricultural Chemistry Laboratory Network	NZAID
China 1996-1997	Land Use and Land Tenure Policy in Fujian Province	ADB
China 1995-2001	Wulian Apple Growers Assistance	NZAID
Tonga 1995-2001	Tonga Forestry Management Services Contract	NZAID
Cook Islands 1993-1996	GIS Development Project	With ANZDEC Ltd for NZAID
China 1992-1998	Integrated Land Use Systems	NZAID
Samoa 1989	Land Resources Planning	ADB
Indonesia 1988-1993	Indonesia-New Zealand Land Resources Mapping (LRMP)	NZAID
Fiji 1981-1988	National Soil Survey and Land Appraisal	NZAID
Niue 1978-1980	National Soil Survey and Land Appraisal	NZAID
Cook Islands 1976-1980	Fertility and Hydraulic Properties of Selected Cook Islands Soils	NZAID
Tonga 1975-1978	National Soil Survey	NZAID
Cook Islands 1974-1978	Cook Island Soil and Land Resources Survey	NZAID

ACRONYMS

ADB	-	Asian Development Bank
ASOCON	-	Asian Soil Conservation Network
AusAID	-	Australian Agency for International Development
CSIRO	-	Commonwealth Scientific and International Research Organisation
FAO	-	Food and Agriculture Organisation
FORTECH	-	Forestry Technology Pty Ltd
FSM	-	Federated States of Micronesia
GEF	-	Global Environment Facility
GRID	-	Global Resource Information Database
GTZ	-	Deutsche Gesellschaft für Technische Zusammenarbeit
IBSRAM	-	International Board for Soil Research and Management
ICBP	-	International Conservation and Biodiversity Programme
IFAD	-	International Fund for Agriculture Development
IUCN	-	International Union for Conservation and Nature
NZ	-	New Zealand
NZAID	-	New Zealand Agency for International Development
PNG	-	Papua New Guinea
SCS	-	Soil Conservation Service (USDA)
SPACNET	-	South Pacific Agricultural Chemistry Laboratory Network
SPC	-	Secretariat of the Pacific Community
SPREP	-	South Pacific Regional Environment Programme
TNC	-	The Nature Conservancy
UNDP	-	United Nations Development Programme
UNDTCD	-	United Nations Department for Technical Co-Operation in Development
UNEP	-	United Nations Environment Programme
UNOPS	-	United Nations Office for Project Services
USAID	-	United States Agency for International Development
USDA	-	United States Department of Agriculture
WB	-	The World Bank
WWF	-	World Wildlife Fund

Please read on for more information on individual projects we are implementing or have completed in recent years.

Some International Business Group projects (1996 - 2002)

Guizhou Integrated Land Use Systems (NZAID)

This project was successfully completed in 1998. It was a 5-year technical assistance to the Guizhou Provincial Government of the **People's Republic of China**. Its aim was to assist in the development of marginal hill land through establishment of four sites demonstrating the integration of various land use options (pasture/livestock, agro-forestry, tree crops, cropping, forestry) within traditional smallholder rice-based farming systems. This demonstration aimed to encourage more productive use of marginal hill lands, diversify farmer risk through the development of a wider range of farm products in each community and it increased farmer cash income (by over 300% by project end).

Services provided:

- X Project design and management
- X Integrated land use systems
- X Development of marginal hill land
- X Smallholder farming systems
- X Socio-economic monitoring of project impacts
- X Training of technicians and senior experts
- X Provision of consultants in land management, pasture establishment and management, agro-forestry, agricultural economics, rural sociology
- X Technical advice to Guizhou staff in the above areas

GIS Development Project Phase 2



(MFAT)

The aim was to assist the **Cook Islands** government establish an integrated GIS facility to enable improved access and management of spatial natural resource data required for departmental decision-making in operations and planning.

Services provided:

- Project design, GIS needs assessment, system design and installation
- Institutional strengthening of government departments
- Needs assessment and in-depth training on GIS operation, system management, GIS appreciation for managers; GIS applications; remote sensing and digital image analysis
- Digital capture (digitizing, scanning) of data including cadastre, land valuation, land use, topography, hydrology, infrastructure, land resources, service utilities, cultural data
- Assistance with GIS applications including agriculture, forestry, environment, land use planning

Fiji Soil and Crop Evaluation Project (Phase II)(AusAID/NZAID)

The aim is to contribute to self-sufficiency in food crops and an increase in export earnings by definition and demonstration of crop nutrient requirements on the soils suitable for sustainable cropping systems by: assisting the Research Division of MAF with institutional strengthening and technology transfer mechanisms; providing training in soil fertility, plant nutrition, database and technology transfer of research results; supporting soil and crop research relevant to on-farm crop nutrition problems for selected crops, soils and climatic zones; and strengthening interactions between research and extension staff in interpretation of soil fertility research results, and information transfer to farmers.

Services provided:

- Project design and management
- Soil and plant analysis, laboratory quality control and laboratory training
- Training of staff in the use of the neutron probe and methods for soil moisture monitoring
- GIS needs assessment, design, installation and training
- Digitize relevant resource data sets for GIS and establish user access procedures
- Provide crop suitability maps based on physical, cultural, demographic factors and land management practices



Indonesia: Strengthening Provincial Physical Planning Capability (ADB)

3 x 2 month training in GIS applications for land resource evaluation and planning for 18 provincial staff from the Directorate-General for Regional Development. This was part of the Second Land Resource Evaluation and Planning Project (LREP II)/D which is directed towards the strengthening of the physical planning capability of the provincial planning agencies.

Services provided:

- Hands-on experience in the development and use of GIS
- Use of GIS software (pcARC/INFO, ARCVIEW, ALES, EPPL 7) for spatial data analysis in planning
- GIS physical planning within a regional and an area context
- Integration of social, cultural and economic data into the overall spatial planning process
- Production of land use plans based on field mapping
- Development of pilot project using digital data from Indonesia



Tonga Forestry Project Management Services Contract (MSC)(NZAI D)

For the past 5 years, Landcare Research has been managing the Tonga Forestry Project for NZ MFAT. The project comprises 6 components:

1. Agroforestry

This component began by refurbishing the existing nursery system on the 4 main island groups. A National Masterplan for Agroforestry was developed and is under implementation.

2. Coconut Inventory

Consultants designed and implemented an inventory of the coconut timber resource and trained Tongans in mapping and counting coconuts, methodologies and statistical techniques used to treat data.

3. 'Eua National Park Management Plan

'Eua National Park (449 ha) is Tonga's only national park and is intended to preserve one of the largest remaining areas of Tonga's rain forests. Landcare Research developed a Management Plan which sets the basis for its protection and development for future generations.

4. Economic Assessment of 'Eua Plantation

The Natural Forest Inventory started in 1996 with methodologies for selecting plots that will be mapped and fully characterised. This was to (i) better understand trends in land use and vegetation change; (ii) identify areas which may be reserved because of their uniqueness of vegetation; and (iii) identify the types and severity of invasive weeds and how they act as hosts for pests and diseases (and therefore affect the quality of agricultural production).

5. Forest Inventory - 'Eua Forest Plantation

An economic assessment of the 600 ha forest was undertaken with an analysis of market opportunities for timber products and the optimal forest size to sustainably support markets. Commercialisation options for the forest were considered and a management plan for the preferred options prepared. This was followed by a detailed business plan to fully privatise the forest by 2003. Implementation of the business plan is underway.

6. Project Management

In addition Landcare Research has assisted with capacity building within the Forestry Division, especially training.

Turkey Agricultural Research Project (World Bank)

Major project to improve the capability and delivery of agricultural and forestry research through a series of technical advisory missions directed at research programmes in training, improvement of facilities and equipment, and institutional strengthening of relevance and importance to the national economy. Landcare Research participated in two areas:

The GIS/Remote sensing objective was to build on the General Directorate of Rural Services (GDRS) staff GIS and RS training activities to contribute to the objectives of the GDRS Research Management Plan. This involved design and initiation of a suitable research programme and applications using local data and information using modern techniques.

Rangeland Research aims were to review opportunities for better rangelands use and identify research activities essential for their long term maintenance and sustainability. Observations were made on the main characteristics of the rangelands, the level of current research and available knowledge, implementation of rangeland management, and research collaboration between different organisations.

Services provided:

- Detailed design and initiation of prioritised research projects in the application of GIS/RS technology in land and water;
- Identification of additional support needed to facilitate the success of the research activity;
- Review of current rangeland research in Turkey and current GDRS programmes of relevance to the topics;
- Review opportunities for new research initiatives to improve cost-effectiveness of GDRS investment in rangeland responsibilities;
- Design of applied rangeland management research programme to meet local needs;
- Demonstration of research methodology in rangeland management suitable for local data and resources; and
- Development of detailed research action plans and associated investment costs, including needs for training.

Zhongdian Integrated Rural Development Project (NZAI D)

The project goal is to achieve food security, raise cash incomes above the poverty line, and improve social well-being of poor rural households in Zhongdian County, Yunnan, China. This will be done through development and demonstration of a sustainable integrated rural development approach to poverty alleviation in 3 administrative villages; improvement of basic education, health and water supply; farmer and technician training; improvement of extension system for technology transfer to non-project households and other parts of the county.

Services Provided:

- Technical assistance in improved crop, pasture, livestock development and management; social forestry, management of non-timber forest products, multi-use forestry, basic health and education, rural water supply schemes, eco-tourism management plans;
- Establishment and management of revolving group credit scheme;
- Training, including specific training for women;
- Establishment of improved county agricultural/forestry extension system;
- Project design, management, and administration (including financial management, procurement, training, staffing, hiring of consultants, reporting, project monitoring).

Federated States of Micronesia Watershed Management & Environment

This ADB project was designed to protect the integrity of the main watershed area of the Pohnpei Island by assisting the **State of Pohnpei** to implement the provisions of its Watershed Forest Reserve and Mangrove Protection Act.

Services provided:

- Resource survey
- Database and GIS establishment
- Community education programme
- Training in aerial photo interpretation, watershed management mapping and GIS; and
- Forest rehabilitation of degraded/eroded watershed land.



Land Use & Land Tenure Policy in Fujian Province, China (ADB)

Landcare Research was the lead firm on this TA. The objective was to assist the Provincial Government of **Fujian** to strengthen its land use and land tenure policies to achieve an optimal mix of incentives and disincentives for long-run sustainable land use throughout the province. The TA included: (i) reviewing the effectiveness of existing land use zoning and enforcement; (ii) evaluating the impact of current regulations/practices for tenurial rights of farmers and determining optimal tenure periods and land use fees to ensure farmer willingness to invest in enhancing or protecting land quality and improving land productivity; (iii) preparing and implementing land use and land tenure plans for priority areas in Fujian Province as pilot projects, which could later be expanded to cover the whole province.

Services provided:

- Review of land use planning (LUP) procedures and recommendations for improved systems including data needs and land evaluation systems
- Analysis of existing land tenure policy laws/regulations/procedures and recommendation of effective needs and changes in the practice
- Conduct of household socio-economic surveys, analysis of results and incorporation of findings in pilot studies
- Recommendation of improved institutional changes in LUP and development of M&E systems for assessment of effectiveness
- Development and implementation of training programmes

Wulian Apple Development Project (NZAID)

The project goal is to increase the level of income from apple production by poor farmers in **Shandong, China**.

The project aims to do this by developing new orchards; improving management of existing orchards; grafting of new varieties; development of cool stores and other post-harvest facilities to improve value-added; provide farmer and technician training; facilitate access to rural credit; develop a research and development programme; provide technical and marketing assistance.



Services provided:

- Pre-feasibility and feasibility/design studies
- Technical assistance in apple orchard development, management, post-harvest storage and handling, product marketing and development of value-added products
- Economic and social impact assessment, M & E
- Environmental impact monitoring and assessment
- Integration of other agricultural activities with apple production systems
- Project management and administration

Indonesia National Watershed Management and Conservation Project (World Bank)

The project provided technical assistance and supervision of the implementation of watershed management training and extension, and upland research and technology development. The Upper Cimanule Watershed (West Java) was the initial implementation area for procedural changes and technical approaches being developed by the Project. Once established, these watershed management approaches were applied in 39 priority watersheds in Indonesia.

Services provided:

- Review effectiveness of existing land use and resource-based planning and assessment of appropriateness and techniques and methodologies
- Review existing plans for each watershed
- Preparation of integrated watershed management plans for 34 priority watersheds
- Assistance in identifying and refining improvements in resource-based watershed and area planning methods
- Review processes for establishing watershed priorities and for identifying critical lands to rationalize investment priorities
- Assist in preparation of annual progress reports
- Prepare manuals and guidelines on watershed planning, land resource survey and multi-factor land use evaluation

Capacity Building for Soil Conservation and Rural Development - PRC (ADB)

The objective of the TA is to assist the **Fujian** Provincial agencies and research institutions concerned in planning, implementing and monitoring soil and water conservation programmes in the province. It will (i) enhance the knowledge base on soil erosion and environmental problems in the red soils region of the PRC; (ii) provide policy makers and technical staff with access to alternative technologies for soil and water conservation; (iii) enhance the capabilities of planning, research and extension within the soil conservation agencies in the red soils region; (iv) provide facilities for comprehensive training programmes for trainers and extension staff, and develop suitable training packages for farmers; and (v) establish an improved system for monitoring and evaluation of the impact of soil and water conservation programmes. The TA will provide for 20 person-months of domestic consultants.

Services provided:

- Site visit and proposal preparation
- Financial negotiations
- Technical management



Installation of GIS "MapInfo" and Training (Philippines) - Private Sector

The installation and training of a complete GIS work station including digitiser, Inkjet plotter and MapInfo software. The training of operators was based on the need to interface a computer based stand record system (The Forest Master) with map production capabilities particularly for logging planning. In addition, the opportunity was taken to convert the 35,000 hectare plantations into topographical management units rather than 10 hectare grid-based control units. This involved consolidation of some 8,000 establishment records into the reduced number of management units with completely new boundaries. At the same time the stands were verified against recent aerial photography.

As an additional training exercise 400,000 hectares of potential plantation areas in **Eastern Mindanao** were screened for suitability for a number of agricultural and tree crops by processing data for slope agro-climate and soil type for overlay analysis. This very quickly identified where investment should focus. After a gap of one month, a one-week visit was all that was necessary to make this training fully sustainable. The unit now routinely prepares complex maps for a variety of end users and continues the plantation verification and consolidation of new records.

SPACNET - South Pacific Agricultural Chemistry Laboratory Network (IBSRAM)

Established the main constraints to quality assurance in the **South Pacific** with recommendations to overcome these. A regular exchange of soil and plant samples within the South Pacific was initiated as part of the regional quality control programme. Preparation of an inventory (housing, equipment, computing facilities, staffing, etc.) and documentation of analytical methods used within the region. Recommendations for standard methodologies were prepared.

Services provided:

- Site visits to 7 South-West Pacific countries and 11 laboratories
- Laboratory Inventories (hardware, facilities, methodologies, staffing)
- Quality assurance programme for soil and plant samples designed and implemented
- SPACNET newsletters prepared and distributed to collaborators and donors
- Training in soil and plant analysis
- Standard methodologies for analysis of soil and plant materials developed
- Network for sharing of experiences established
- Project management and reporting

The South-West and Qinba Mountains Poverty Reduction Projects (WB)

These are 2 multi-sectoral project (social services, health, education, labour mobility, land and farmer development, rural infrastructure, rural enterprise development, rural micro-finance, poverty monitoring). The land and farmer development component of each aims to increase food production, improve productivity and diversification of cash crop production, develop village-based agricultural industries, provide farmer/technician training programs and improve soil and water conservation.

Services provided:

- Prepared detailed design of land and farmer component, for each project including component activities, work programs, training requirements, activity scheduling, budget preparation
- Review of research and technology transfer needs for development of sustainable (physical, economic, social) land use systems, and design of applied agricultural research and extension program to underpin the Land and Farmer Development component
- Supervision of land and farmer development project implementation
- Completed agriculture sector component of the China Poverty Study conducted by the World Bank and State Council Leading Group for Poverty Reduction

Fiji Land Information System Review (NZAID)

The overall project aim was to establish a national framework for the automated digital storage, integration and retrieval of a wide range of land-related data (e.g. land titles) for Fiji. Stage 1 was successfully completed and Stage 2 is underway.

Services provided:

- Assessment of the progress of the Stage 2 project to date
- Recommendation of components of a Continuing Links project and identification of FLIS activities for such a project