



# COUNTRY NEWSLETTER

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“The conference is the culmination of an Australian Centre for International Agriculture Research (ACIAR) program that has invested **A\$14.8 million** since 2009 into farm-productivity and policy-focused research projects.”

- HE MS ALISON BURROWS

# improving AGRICULTURAL PRODUCTION AND PROFITS in the mekong region

Improvements in agriculture practices in the Mekong region and lessons for policy were discussed at a conference on 7-9 May 2014. Around 60 stakeholders from Cambodia, Lao PDR, Vietnam and Australia attended the conference at the Cambodiana Hotel in Phnom Penh.

The conference, 'A Policy Dialogue on Rice Futures: Rice-based Farming Systems Research in the Mekong Region' was opened by Australia's Ambassador to Cambodia, HE Ms Alison Burrows.

"The conference is the culmination of an Australian Centre for International Agriculture Research (ACIAR) program that has invested A\$14.8 million since 2009 into farm-productivity and policy-focused research projects," Ms Burrows said. "Collectively, the projects span best-practice management, advanced technologies, niche cropping, targeted marketing and extension as well as policy research."

Dr Ouk Makara, Director of the Cambodian Agricultural Research and Development Institute (CARDI), a key research partner, said the ACIAR rice-based farming systems research program is assisting the Cambodian Government improve the living standards of rural people.

"Collaborating with Australian and international scientists is helping Cambodians to build our own research skills and develop strategies to overcome significant challenges."

Program Co-ordinator Dr Caroline Lemerle said ACIAR's focus is on the important policy implications of the rice-based farming systems research.

"The conference aims to promote interaction and discussion between researchers, regional policy-makers and influencers. Opening sessions will focus broadly on 'rice futures' in the Mekong region before examining the policy implications of the research program."

The Rice-based Systems Research program is one of four programs developed by ACIAR under the Australian Government's Food Security through Rural Development initiative. The research was undertaken in Cambodia, Lao PDR and Bangladesh.



# LESSONS shared

on research assisting farmers to adapt to challenges faced

The results of a five-year regional collaboration to develop climate change adaptation strategies for farmers in Lao PDR, Cambodia, Bangladesh and India were reviewed at a meeting in Savannakhet on 22 July 2014.

More than 60 participants exchanged views and shared lessons learned through the AU\$5.3m Australian-funded project at the Provincial Agriculture and Forestry Office (PAFO).

The meeting was co-chaired by Dr Bounthong Bouahom, Director General of the National Agriculture and Forestry Research Institute (NAFRI); Mr Khamlouay Yathivong, Deputy Director of Savannakhet Agricultural and Forestry Office; Dr Evan Christen, ACIAR Land and Water Resources Research Program Manager and Dr Christian Roth, CSIRO.

The research project has been addressing a range of issues that are impacting farmers such as labour shortages, and testing options for farmers with varied access to resources and household strategies to adapt their farming practices. The results have been used to develop a toolkit to help farmers manage farming in a variable climate.

In Lao PDR, the project focused on how farmers could adapt their cropping systems in lowland rice-based cropping systems of the districts of Champhone and Outhoumphone in Savannakhet.



Strategies were also developed to enable policymakers to deliver more effective climate adaptation programs that are relevant to farmers' livelihoods and food security.

“Using direct seeders introduced by the project to grow rice helped me save on the labour needed to pull rice plants and replant them as is the normal rice transplanting practice” said Mr Bounpheng Phatsalath, a local farmer of Phine Tai village in Outhoumphone district during a field visit of the review team. He told the visitors that he got similar rice yields from both direct seeding and transplanting cultivation.

“I believe that the collaborative research has been very positive,” Mr Khamlouay Yathivong told the gathering of researchers. “PAFO together with NAFRI will continue to collaborate with all partners to enhance our research capability on various scales to support agricultural development in response to climate change and food security needs.”

# JOHN DILLON MEMORIAL FELLOWSHIP

Dr. Malavanh Chittavong, Faculty of Agriculture, National University of Laos, was awarded the ACIAR's John Dillon Memorial Fellowship for a nine week visit program in Australia including University of Western Australia, Melbourne Business School, Narrandera Fisheries Centre and CSIRO Marine Research. She shared her experiences through receiving ACIAR fellowship.

“Fisheries agencies in both Laos and Australia are interested in increasing capacity to design, manage and operate fish passage facilities on new and existing low-level water control structures in order to ensure the long-term sustainability of fish resources in each country. Fish passages are being developed because of the

construction of water regulation devices. The motivation in undertaking the fellowship is to gain greater understanding of building and establishing fish passage within Lao PDR which will maintain food security for Lower Mekong and to improve the ecology of floodplain wetlands by rehabilitating fish communities.

Working with those institutions in Australia provided me further knowledge and understanding on how to develop programs to quantify the environmental, social and economic benefits of fish passages, for the benefit of students at the National University of Lao PDR, government agencies and number of key stakeholders. My knowledge and understanding of freshwater fisheries was in turn strengthen partnerships with all stakeholders within Lao PDR and Australia. I have gained strong communication and interpersonal skills and a great depth of knowledge into what we are being involved in both countries.

As fisheries technology develops, it is a great opportunity for women to be leaders in fisheries research and implementation. Women are responsible for household work and provide nutritional food for the household so it is important for them to take active leadership roles in food security issues. Having been trained in Australia, I was provided with the necessary skills to undertake high-quality research. Also I will be able to become a leader in women's sector and provide stronger relationships for women throughout Lao PDR on problems surrounding food security.”



# ACIAR FUNDED LIVELIHOOD RESEARCH PROJECT

Receives good collaboration from its local stakeholders

**A** research project on facilitating livelihood adaptation to natural resource pressures implementing by the National University of Laos (NUOL), and Sydney University held its first review meeting in Vientiane at the National Institute of the Public Health, another counterpart institution.

Professor Dr Phillip Hirsch, Australian project leader from the Sydney University, and Associate Professor Dr Silinthone Sacklokham, Vice Dean of the Faculty of Agriculture of NUOL co-chaired the meeting in order to have their research activities, progresses and future plans shared among other project staff from the Faculty of Forestry, the Faculty of Environmental Science for instance, and other stakeholders.

During the meeting, a good collaborated participatory action research in Muang Feuang district where researchers and key stakeholders develop common evidences about livelihood change and adaptation in the context of constrained resource circumstances, and a well progress household survey assessing links between household livelihoods, food security and well-being of villagers in Num Ngeum watershed were raised as some of the project achievements.

Under a following field visit in Somsavath village in Fueang district, the review team also meet with meet with local counterparts from the District Agriculture and Forestry Office, and the Natural Resource Environment Office for instance, and other stakeholders such as the Poverty Reduction Office, and the resettlement project site office of the PT Development sole company limited in order to pursue their comments and feedbacks.

This three-year research project has been funded by the Australian Centre for International Agricultural Research (ACIAR) since 2012 aims to improve livelihoods of smallholder households who face natural resource changes by facilitating a social learning process whereby diverse stakeholders at multiple levels have been engaged in developing joint strategies on livelihood adaptations for the piloting sites.







“cattle has been healthy and productive since the project came in his village in 2008.”  
- DR. SYSENG KHOUNSY





# VACCINATION

## HELPS INCREASE CATTLE PRODUCTION IN LUANGPRABANG

**Villagers of Hardpang in Luangprabang recently led their buffaloes and cows to receive vaccination as part of a Laos-Australia Livestock project.**

Dr. Syseng Khounsy, Project Director, headed veterinary workers from the Provincial Department of Agriculture and Forestry (PAFO) and internship students from Sydney University to the village to provide injecting and dropping vaccines. The vaccines will prevent animal diseases such as foot-mouth-disease, internal and external parasites, and blood disease (Haemorrhagic Septicaemia).

Mr Sengin Boutdavong, Head of Village, said that “cattle has been healthy and productive since the project came in his village in 2008.” He added that “farmers see an importance of animal immunization and continue to buy some of the vaccines after the project ceased.”

The animal vaccination initiative in this rural community was introduced by a research project on best practice and husbandry in large animals, funded by the Australian Centre for International Agricultural Research (ACIAR). The project aims to improve small householder knowledge of cattle disease control, nutrition, breeding, husbandry and cattle management practices in order to increase profitability of cattle production and enhance living standards of the farmers.

This project, with sustainable extension, was one of the ACIAR funded projects in Laos recently filmed to showcase successful scientific cooperation between the two nations of Laos and Australia.



## RICE SEEDERS ARE **MAIN ATTRACTION** IN NAFRI'S AGRICULTURAL EXHIBITION

The National Agriculture and Forestry Research Institute (NAFRI) recently celebrated the 15<sup>th</sup> year anniversary of its establishment. An exhibition of agricultural products, research achievements, and other publications was part of the event.



Rice Seeders were displayed as part of the event. The seeding machines were the subject of interest by a number of visitors, with inquiries about how they work, and their capacity, according to Mr Bounxou, a machine-using farmer from Thouat village, Champhone district, Savannakhet Province.

Seeding machines were introduced in two research projects implementing by NAFRI, Savannakhet Provincial Agriculture and Forestry Office (PAFO), and Australian scientists under a cooperative funding agreement from the Australian Centre for International Agricultural Research (ACIAR). The projects aim to improve productivity under variable climate conditions such as droughts and floods in order to ensure food security, to release unnecessary labourers to other sectoral activities, and to save production costs.

These cultivation tools have been widely used in Savannakhet. Farmers in other districts who had been told from project participating farmers about how well the machines work also bought their own machines to improve their rice production, according to project implementers from PAFO.





A project survey showed that livestock are one of the main sources of income for rural farmers, with smallholders in Sophoun village making almost

**35%**

of cash incomes from their pigs.

## AUSTRALIAN RESEARCH PROJECT HELPS IMPROVE PIG MANAGEMENT IN PHONGSALY

Smallholder pig producers in northern Laos are being assisted to improve their pig producing systems through a research project funded by the Australian Centre for International Agricultural Research (ACIAR) in collaboration with the Department of Livestock and Fisheries (DLF) of the Ministry of Agriculture and Forestry.

The four year project, underway since late 2010, aims to bring financial benefits to communities who depend on livestock, and the Lao economy, by increasing productivity and reducing mortality of pigs. The focus of the work is on introducing more nutritious feeding and improving breeding and management, such as raising pigs in pens and taking steps to prevent disease.

A project review recently held in Laos heard that the participating farmers in Mai district in Phongsay are on the way to adopting some of these approaches, according to officials from the Livestock Research Center (LRC) of the National Agriculture and Forestry Research Center. A project survey showed that livestock are one of the main sources of income for rural farmers, with smallholders in Sophoun village making almost 35% of cash incomes from their pigs. These rural



villagers are now aware of the importance of providing supplementary forage, a pen-based water supply system, and vaccinations in helping their animals fatten in a shorter time.

Along with animal health, production and marketing, the project is also addressing issues of human health in an integrated way. Both components are commissioned by the Commonwealth Scientific and Industrial Research Organisation (CSIRO), Australia, and its Lao collaborating partners, the DLF, LRC, and Department of Hygiene and Disease Prevention.

## NEW AUSTRALIAN PROGRAM TO SUPPORT LAO AND CAMBODIAN RICE FARMERS

**A new Australian agricultural research program has been launched to help farmers in lowland rice growing areas to use machinery and diversify their farming to reduce costs and increase production.**

The four-year AU\$1.5 million (or 11 billion Kip) initiative of the Australian Centre for International Agricultural Research (ACIAR) is being implemented by the National Agriculture and Forestry Research Institute (NAFRI) and the Cambodian Agricultural Research and Development Institute (CARDI).

“In the past decade, constraints to intensifying and diversifying production have become apparent including labour scarcity, increasing wage rates, poor post-harvest handling and lack of value-adding activities,” said NAFRI Director General Dr Bounthong Bouahom at the project inception meeting in Vientiane on 3 July.

Dr. Bounthong and the Australian project leader Professor Shu Fukai, of the University of Queensland gathered with the researchers from NAFRI, other international research for development institutes, and CARDI.

“Rain fed lowland rice, grown once a year in the wet season is the backbone of agricultural production in Laos, but is largely subsistence-oriented with low productivity, delivering low quality rice to local consumers,” Dr Bounthong said.

“Household income would be increased and rural poverty reduced if quality rice and non-rice crops could be successfully grown” he said.



The cooperative project will target eight sites in each country which contrast in the availability of irrigation, agriculture services and businesses. Altogether, about 400 farmers and 40 small businesses will participate with researchers in testing and evaluating alternative farming systems including livestock and the integration of forages and crops.

“Introducing machinery suitable for lowland rice growing areas will help farmers reduce costs, produce higher grade rice and grow more crops each year,” Australian Ambassador to Lao PDR John Williams told the meeting of researchers.

The aim of these joint efforts will be to provide economic benefits through adoption of labour-saving technologies, diversification into high-value crops, and higher prices for quality produce.

“Australia remains a partner committed to helping the Lao PDR to achieve economic development goals in agriculture, which engages many people, and in other priority areas,” Mr Williams said.

## ENHANCING THE RESILIENCE AND PRODUCTIVITY OF RAINFED DOMINATED SYSTEMS IN LAO PDR THROUGH SUSTAINABLE GROUNDWATER USE



*IWMl intern Snowy Haiblen and colleagues from the National University of Laos and the Department of Water Resources analyzing data collected from the field*

**The area under irrigation in Lao PDR remains very low but groundwater can potentially be developed to boost production by offering water on demand for crop diversification and intensification for smallholder farmers. Use of groundwater for all purposes including agriculture is limited but could offer a great deal of promise if the main technical and non-technical barriers can be overcome and the available resource is adequately understood and sustainably managed.**

This project started in 2012 with more than 10 project partners and seeks to develop technologies and strategies that enable sustainable expansion of groundwater use for private and community scale irrigation for increased food- and nutritional- security in Lao PDR.

At the national scale, the project has documented the current state of groundwater governance in the country for the first time, identifying the range of problems faced and proposing pathways forward. National level institutional and groundwater potential mapping is being carried out and groundwater recharge estimates made.

A village-level socio-economic and environmental assessments of groundwater use in lowland plains with good resource access are being supplemented by water resource assessments and monitoring program in the Vientiane Plains. A pilot irrigation trial with community-level tube wells is being setup in Phonhong district and expected to start in the dry season of 2014-15. Some preliminary work was carried out to explore setting up similar facilities in resettled villages at the Theun Hinboon Power Company (THPC) expansion project site in Bolikamxay province.

The project has organized training courses covering 'groundwater fundamentals' and 'groundwater modelling and application' for the partner organizations and other stakeholders. Developing a local capability to undertake groundwater modelling has emerged as one of the goals from the training. Local counterparts are involved in on-the-job training. One promising young lecturer from NUoL is expected to commence PhD studies in Australia shortly and no less than six MSc studies in Laos are underway. Study tours of Khon Kaen province have been organized to see fully developed and emerging groundwater irrigation schemes first hand that assist in the design of the pilot trials in Laos.

Communications have been made at numerous local, regional and international scientific forums. Media Releases have been prepared and articles reported in local and international media outlets.

# CELEBRATING THE FIRST WORLD FISH MIGRATION DAY IN LAO PDR

**An Australian/Lao initiative that built the first fishway to allow Mekong fish species to migrate upstream to spawn was the site of a celebration on World Fish Migration Day.**

A fishway (or fish pass) is a channel built around or through a weir to allow fish to complete upstream migrations. The fishway in Borikhamxay province in Lao PDR allows fish to move between the Mekong River and the Pak Peung wetlands providing them with access to vital spawning and nursery habitat, which has been limited by irrigation infrastructure since the 1970's.

The fishway, the first of its kind in Lao PDR, is the result of eight years of targeted research, backed by AUD\$2.0 million (Kip 16 billion) of funding from the Australian

Centre for International Agricultural Research (ACIAR), involving partners from Australia and Laos.

The fishway, which cost AUD\$130,000 to construct, was completed using local labour and designs progressed by an Australian and Lao design team. Construction management was performed by the National University of Laos, while district and provincial liaison was progressed by the Lao Living Aquatic Resources Research Centre.

The inaugural World Fish Migration Day was held on 24 May 2014 to improve understanding of the importance of open rivers and fish migration. More than 250 events are being held around the world to celebrate the day, including in Lao PDR.





# MEMORANDUM OF UNDERSTANDING FOR PES SCHEME IN BOLIKHAMXAY

The Lao government has identified payments for environmental services as a way to achieve environmental management goals and improving smallholder livelihoods. Memorandum of Understanding to implement a Payments for Environmental Services (PES) scheme in the Bolikhamxay province was signed on 16 July between the project ‘Effective Implementation of Payments for Environmental Services in Lao PDR’ and the Provincial Office of Natural Resources and Environment (PONRE).

Mr. Khamphan Nanthavong, Project Leader, Ministry of Natural Resources (MONRE) and Mr. Khampasong Vongtana, Deputy Director of PONRE, were joined by Ms. Bounnhong Sisouvannakhone, Vice Governor from Bolikhamxay province; Mr. Soukata Vichit, Environment Protection Fund (EPF); Mr. Khamphay Manivong, Deputy Director General, Department of Forestry and other government officials and project team members.

The project coordinator, Associate Professor Phouphet Kyophilavong, NUoL, said that the overall aim of the project was to develop PES policy options for the Lao government. PES schemes aim to increase the amount and quality of environmental

services. This is achieved by establishing and sustaining a financial link between those with a demand for environmental services and those who have the potential to supply them.

PES schemes provide financial benefits to smallholders who improve environmental conditions through changing their land use practices. The payment for villagers will be funded by Theun Hinboun Power company through the Environment Protection Fund (EPF). The research activities are being funded by the Australian Centre for International Agricultural Research and is conducted by MONRE, MAF, the National University of Laos (NUoL), the Australian National University (ANU) and the University of Western Australia (UWA).





## BIOSECURITY

# workshop on REMOTE DIAGNOSTICS

Supported by the Australian Centre for International Agricultural Research (ACIAR), the project on Enabling Improved Plant Biosecurity Practices is being implemented in Lao PDR and Cambodia.

**The overall aim of the project is to improve plant biosecurity in the region, where this relates to an increased capacity for and capability to identify and monitor pest activity in trade and production systems. Each country will be enabled to conduct research and preliminary diagnosis of plant pests and diseases, with collaborative research and confirmatory diagnosis being undertaken within the region.**

Under this project, CRC for National Plant Biosecurity, Australia in partnership with the Department of Agriculture, Lao PDR conducted the workshop on remote diagnostics at the Plant Protection Centre on 28-30 July 2014. The participants included pathologists, entomologists and Border Inspection Officers.

Mobile devices plus wireless microscopes were used to take picture of pests in the field and the Pestpoint software was introduced to connect people to diagnostic networks to access advice and expertise.



The ability to identify plant pests is the first step in being able to control the pests that damage crops. It is also of vital importance for biosecurity and trade, protecting against the entry of foreign pests and in being able to inform trading partners of the pests that are present in Laos.

According to the Sanitary and Phytosanitary Standards (SPS) specified by the WTO, countries must have the ability to identify and declare the pests that are present in their farming areas in order to negotiate trade with other countries.

This project will assist in the development of Pest Lists for Laos that can be used to facilitate trade. This workshop at the PPC was the first of a series of workshops and training activities that are aimed at raising diagnostic capability for crop pests.

# ACIAR'S VISION

ACIAR looks to a world where poverty has been reduced and the livelihoods of many improved through more productive and sustainable agriculture emerging from collaborative international research.

AUGUST 2014

## COUNTRY NEWSLETTER

## ACIAR

The Australian Centre for International Agricultural Research (ACIAR) operates as part of Australia's international development cooperation program, with a mission to achieve more productive and sustainable agricultural systems for the benefit of developing countries and Australia.

ACIAR commissions collaborative research between Australia and developing-countries researchers in areas where Australia has special research competence. It also administers Australia's contribution to the International Agricultural Research Centres.

*photo courtesy ACIAR Lao PDR*



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