

cover the farming costs – seed, fertiliser and pesticides – which are bought on credit with the hope that this can be paid back at harvesting time.

“When I have free time, I work as a hired labourer for additional income,” Mrs Tran Thi Dao adds. “I feel so alone and lonely without my husband. I worry that no one will take care of my children if I get sick.” She is also concerned that she knows little about rice diseases and has to depend on local pesticide dealers for advice.

Shouldering responsibility for the farm is also a burden for Mrs Lien. “I find it quite difficult to go to the field at night to monitor the water level to ensure that the rice grows well. Before I was too scared to go to the fields by myself but since I do not have any choice, I have learned to overcome my fears. I have to go to the field to let water into the rice fields and wait until the water level is sufficient. I wish my husband was here but I know we have to sacrifice so that we can put our children into school.”

Women who live alone feel vulnerable and many have to rely on neighbours for protection.

The experiences of the women quoted are typical of some 800 farming households that the researchers have talked with in Thailand, Vietnam and the Philippines. To poor farming families in Asia, migration is a survival strategy where most of the off-farm income is spent on food, debt payments, children’s education and farm inputs.

In Australia, results of similar focus group discussions showed that many women are engaged in off-farm work to supplement household income. At the same time, they also make significant contributions to on-farm work.

“We are currently having in-depth discussions with households to look in more detail at the unique personal, social and economic constraints faced by women who are heading up or managing farms, compared to those headed up by men,” Dr Paris says. “We hope to identify policies, technologies, training and extension practices that might overcome these problems. This might include training courses in integrated pest management, the efficient use of water and nutrient management.”

Local on-farm strategies and activities will be tested by 60 women who are heads of farms in selected villages in the Philippines, Thailand and Vietnam. The Australian project will focus on the capacity building of women farmers and may include training about supply chain marketing, new and emerging markets, information technology and leadership in agriculture.

“Understanding the impact of migration and off-farm work on farming is important in improving agricultural productivity and the well-being of farm families in all risky farming environments,” Dr Paris says. ◀

Other project team members include Chaicharn Wongsanum at Khon Kaen University, Thailand, T Chi at Cu Ulong Delta Rice Research Institute and Joyce Luis at the Social Sciences Division, IRRI.

Watching the water ways

REALLOCATING WATER COULD HELP BOOST AGRICULTURAL PRODUCTION IN CHINA. REBECCA THYER REPORTS ON A PROJECT BUILDING THE NECESSARY POLICY FRAMEWORK

PARTNER COUNTRIES: China, Australia **PROJECT:** ADP/2000/120: Institutions and policies for improving water allocation and management in the Yellow River Basin, China **DESCRIPTION:** By creating the right policy framework, this project aims to help improve water use in China **CONTACT:** Anna Heaney, ABARE, Anna.Heaney@abare.gov.au



Hukou Waterfall on the Yellow River.

China’s booming economy and rapid population growth have increased industrial and urban sectors’ demands for fresh water, placing increasing pressure on water resources that remain available for agriculture.

About two-thirds of China’s cultivated land is in the Yellow River Basin, but it has less than a quarter of the nation’s water resources. One possible answer to this disparity is to reallocate water to higher-value crops and more productive areas, which in turn would also increase the value of agricultural production by an estimated one billion Yuan (A\$165 million) a year (almost a two per cent rise).

The benefits of water reallocation were uncovered through an ACIAR-funded modelling project led by the Australian Bureau of Agricultural and Resource Economics (ABARE), in collaboration with the Center for Chinese Agricultural Policy and the International Water Management Institute.

A project team member, ABARE’s Anna Heaney, says water in China is state-owned and irrigation districts are granted a right to withdraw a fixed volume of water from a river or dam. This water is then distributed by canal to villages. Allocations are made administratively without differentiating between land type or crop sown.

“By concentrating on areas with better potential and diverting water to these areas, China could boost its agricultural returns,” Ms Heaney says.

However, before those benefits can be realised, water property rights and exchange rules must be

defined and evaluated, or those in water-exporting areas will suffer.

“Because farmers do not own the rights to the water, those in the poorer agricultural regions that give up their water will not receive the benefits from water sales,” she says. “That’s why compensation is important and it needs to be in place before China can realise the benefits of water reallocation.”

Providing incentives to save water and reallocating water resources to best meet competing demands are important aspects of both water and agricultural policy reform in China. “The drive to change water policy is already there,” Ms Heaney says. “We’re working to develop systems of water property rights and exchange rules to underpin the more efficient use of water resources in the Yellow River Basin.”

If farmers in water-exporting regions held the property rights to transferred water, income from water sales could offset lost income from reduced agricultural production. Revenue from water sales could see those incomes rise substantially – income from water sales is estimated at 500 million Yuan a year.

But without compensation, the regions with the lowest incomes are likely to be affected most.

Ms Heaney says the team has looked at the benefits of reallocation from a provincial level. “We are now working out the benefits at a village and irrigation district scale, and looking into what kind of institutions are needed to do that.”

Results from this analysis will be presented at the International Association of Agricultural Economists meeting in August 2006. ◀