Net benefits

Low-cost technologies are enabling research teams to communicate much more effectively, reports Heather Briggs

Lia Hadiawati is a young Indonesian agricultural researcher, new mother and wife who lives and works on the small island of Lombok just east of Bali. As part of an Indonesia-Australia project team, Lia is overcoming the problems of working with scientists in Australia through readily available technologies.

Simple off-the-shelf internet conferencing tools and the use of mobile phone Short Message Service (SMS) are transforming the way Lia and her colleagues learn, interact and work with researchers in Australia.

Often, ACIAR project teams and other international research teams have members in multiple time zones. It is common for researchers like Lia to share a single email address with hundreds of other staff and students. Just accessing email can take days or even weeks. But discussing project activities and results is best done together, often around a computer analysing the options to decide on the way forward.

Until now, the only way to do this in most ACIAR projects was through team meetings that brought everyone together for several days, despite the cost in time and money.

CSIRO's Dean Hargreaves, from the Agricultural Production Systems Research Unit (APSRU) in Toowoomba, Queensland, believes that net meetings and SMS are the alternative.

He is encouraged by the early results. "There is huge potential for simple, low-cost ICT to improve the effectiveness of international RD&E."

For many years, the CSIRO team has successfully used low-cost, low-bandwidth videoconferencing technology and Internet conferencing tools like Microsoft NetMeeting™ (bundled free with every version of Windows) to link researchers with remote farming communities in outback Australia. Dean wanted to test the same concept in overseas contexts.

"Our research over the past eight years in Australia has shown that different ICTs can be highly valued when certain criteria are met. This is just a fantastic opportunity to apply these to an international context, where the payoffs could be huge," he says.

Dean's colleague, CSIRO researcher Jeff Corfield, who works with Lia, can now discuss results with her immediately from his office in Townsville. The two can jointly check data integrity and begin analysis. Jeff can additionally provide training in good data management procedures. When Lia shares her computer screen, Jeff sees the same program, and when Lia moves her mouse Jeff also sees the result immediately in real-time.

"The benefits are enormous – Lia gains regular access to the expertise and training from world-leading CSIRO scientists, while Jeff ensures the team members in Indonesia are using best-practice data collection, storage and management. Everybody wins." Dean says.

Two ACIAR project teams have agreed to be the guinea pigs. The first has team members in Hobart, Townsville and Brisbane in Australia and Lombok and South Sulawesi in Indonesia. The second, to begin soon, has sites in Brisbane and the province of Limpopo in South Africa.

An early success was establishing a reliable dial-up link between Sulawesi and Toowoomba over a local phone line from a farmhouse in Barru. The audio and video quality supported an hour's discussion between the two sites.

Net meetings are not the only avenue through which project teams are keeping in touch across international borders. Indonesians, like Australians, have been fast to adopt mobile phone technology.

The very high rate of SMS use among Indonesians has been a key early finding. Mobile phone ownership is high, even among village farmers, and is by far the preferred means of communication.

Researchers reported that they typically send 30 to 40 SMS messages a day but only one or two emails. An Indonesian researcher summed it up: "If you want to contact us for an immediate response, use SMS; email is just too inconvenient. We have our phones with us all the time, and we have network coverage almost everywhere in Indonesia."

Now that Australian team members are aware of this, they are using SMS as a key communication channel. Indonesian researchers use SMS for everything from ordering library reprints to ordering fertiliser, seed and equipment. The Australian teams' use of SMS has resulted in turnaround times for communications with Indonesia being reduced – from being sporadic or even never, and sometimes up to two to three weeks using email – to a matter of minutes using SMS.

Such technology will never replace annual face-to-face meetings, but it does enhance team productivity through more frequent interactions and instant troubleshooting.

Indonesian researchers and extension specialists talking with Toowoomba-based Australian collaborators from a farmhouse in Barru, south Sulawesi, below

PHOTOS: DEAN HARGREAVES