



Australian Government
Australian Centre for
International Agricultural Research

John Allwright Fellowship Program

Tracer Study 2010–2019



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Tracer Study 2010–2019

Sara Webb, Duniya Consulting, who designed the study and conducted it with support from Wallis Social Research



2021

The Australian Centre for International Agricultural Research (ACIAR) was established in June 1982 by an Act of the Australian Parliament. 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. It commissions collaborative research between Australian and developing-country researchers in areas where Australia has special research competence. It also administers Australia's contribution to the International Agricultural Research Centres.

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Suggested citation: Webb, S. 2021. John Allwright Fellowship Program: Tracer Study 2010–2019. Australian Centre for International Agricultural Research: Canberra. 62 pp.

ACIAR publication GEN001

ISBN 978-1-922635-43-3 (print)

ISBN 978-1-922635-44-0 (pdf)

Editing: Jessica Conway, Stitch Communications

Design: Redtail Graphic Design

Cover image: A group of students in the field testing soil at the 2021 Soil Science Conference in Cairns. Photo: ACIAR.

Summary

The John Allwright Fellowship (JAF) is dedicated to improving agricultural research capacity in Australian Centre for International Agricultural Research (ACIAR) partner countries. Between 2010 and 2019, the Fellowship supported 268 agricultural professionals to achieve postgraduate qualifications from Australian tertiary institutions and subsequently lead a range of agricultural research development projects in their home countries.

As part of its ongoing program of monitoring and evaluation, ACIAR commissioned this Tracer Study in 2020 to look at both individual and organisational outcomes of JAF alumni from 2010 to 2019.

The purpose of the study was to provide accountability for the outcomes of ACIAR investment in agricultural researchers and gather insights to improve future JAF scholarships.

The study used an explanatory mixed-methods approach, which included a widespread survey as well as an in-depth qualitative study, comprising case studies from a sample of alumni.

The study achieved a high survey response rate of 201 alumni from 24 countries (75%). The findings of the survey were complemented by 13 qualitative case studies from 10 countries.

Key findings

JAF scholars are highly successful research students. JAF scholars are committed to completing their qualifications, with better completion rates than broader Department of Foreign Affairs and Trade (DFAT) scholars and the Australian domestic student average. Only 7.4% of JAF scholars did not graduate. This compares well to broader DFAT scholarships, which show a 9.5% non-completion rate for higher degree research students, and substantially better than Australian domestic students, who have a non-completion rate of up to 30%.

ACIAR is building a network of agricultural researchers through the JAF program. The study shows 85% of alumni are actively involved in research up to 10 years after completing their JAF, indicating long-term benefits in improving agricultural research in their home countries. Nearly two-thirds (61%) of alumni maintain active links with ACIAR staff, despite only 26% being involved in an active ACIAR project at the time of the survey.

JAF alumni advance in their careers and better understand workplace equality. More than 61% of alumni attribute a promotion to their higher qualification, while 92% say they have a better understanding of gender equality.

At a personal level, there is strong evidence that the JAF has a positive impact. Alumni report increased confidence, a more open mind, an international perspective, and improved English language, communication and collaboration skills.

The JAF likely benefits organisations, as well as the alumni who work there. The study shows 72% of alumni are still with the same organisation as they were when they completed the Fellowship program. This high retention rate—up to 10 years post-graduation—suggests that organisations may be benefiting from the JAF investment on an ongoing basis. Furthermore, 71% of JAF graduates believe sharing their knowledge by teaching, supervising and mentoring students and young researchers is important.



In this report

The Tracer Study provides important insights into the experiences of JAF alumni before, during and after their studies in Australia.

This report analyses the data collected and provides a strong evidence base that demonstrates the success, importance and relevance of the Fellowship.

Further research will be considered to examine organisational outcomes using organisational case studies, as part of the wider ACIAR Capacity Building Monitoring, Evaluation and Learning Framework (MELF). There may also be future opportunities for ACIAR to extend this mentoring potential of scholars, by supporting fellows and alumni to strengthen their teaching, mentoring and supervisory skills.

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1

Context for the program

The Australian Centre for International Agricultural Research (ACIAR) is the Australian Government's specialist agricultural research-for-development agency, within the Australian aid program. The purpose of ACIAR is to contribute to reducing poverty and improving the livelihoods of many in the Indo-Pacific region through more productive and sustainable agriculture emerging from collaborative international research.

The John Allwright Fellowship (JAF) provides the opportunity for agricultural scientists from select countries to gain postgraduate qualifications—either a Masters or a PhD—at Australian tertiary institutions. This initiative is in line with ACIAR's goals of improving research capacity among partner countries.

Since 2010, there have been 272 John Allwright Fellows (185 male and 87 female). In its *Gender Equity Policy and Strategy 2017–2022*, ACIAR committed to achieving gender parity in its Capacity Building Program by 2020. In line with this commitment, women now comprise at least half of new JAF recipients.

To qualify for a Fellowship place, participants are required to be currently working, or have recently worked, with an ACIAR project and must have an endorsement from an ACIAR project leader or research program manager. A fellow's postgraduate studies should generally relate to an ACIAR research project.

The JAF is an especially notable program for ACIAR as it is the longest running and largest investment within the ACIAR Capacity Building Program. The program is co-financed by the Department of Foreign Affairs and Trade (DFAT)¹, which also supports program administration through the Australia Awards system.

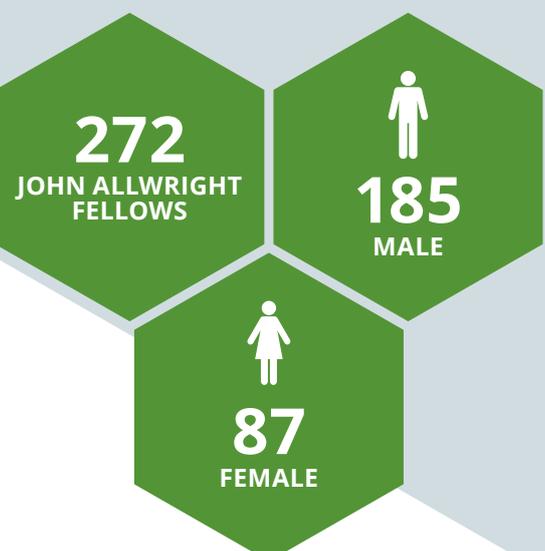
The JAF program provides the following support to fellows:

- full tuition fees, air travel and health insurance
- a stipend and allowances to support living expenses and establishment costs
- an Introductory Academic Program of 4 to 6 weeks prior to the commencement of formal academic studies, covering information on life and study in Australia
- pre-course English language training and/or academic support during the scholarships, if necessary
- additional travel costs for fieldwork for research students, if approved.

Since 2019, JAF scholars have also been offered entry into ACIAR's John Allwright Fellowship Executive Leadership Program, a 15-month complementary studies program that blends online and in-Australia learning, and focuses on leadership, people and communication skills, finance and project management.



SINCE 2010



¹ ACIAR financing ranges from approximately \$2 million to \$5 million per year, depending on cohort size. The DFAT contribution has been approximately \$3 million per year.

2

Overview of the Tracer Study

ACIAR is implementing a Monitoring, Evaluation and Learning Framework (MELF) for its suite of capacity building programs, including the JAF. The framework includes a set of intended outcomes from ACIAR's formal capacity building activities and a Theory of Change, shown in Figure 1 and in detail in Annex 1.²

The MELF provides a structured approach to the collection, analysis and use of data about the progress, performance and results of activities within the Capacity Building Program. As a management tool, it is intended to clarify the processes and resources applied to this work, and to underpin well-informed and evidence-based program planning and management. As an accountability tool, the MELF provides a framework in which to collect evidence and deliver insights into the outcomes of ACIAR's formal Capacity Building Program.

As those supported through the Capacity Building Program are central to many of the intended outcomes, data about their experiences is essential for the monitoring, evaluation and management of the program.

ACIAR does not have a standardised approach to undertaking tracer studies. Prior to the current study, the most recent Tracer Study was completed in 2004. This JAF Tracer Study was run in parallel with a review of ACIAR's other core capacity building program, the John Dillon Fellowship. The John Dillon Fellowship focuses on leadership and management skills through a short-term professional development program for mid-career agriculture professionals. These 2 studies are set to inform the current updating of the Capacity Building MELF, which will provide for more routine tracer studies, surveys and reviews of ACIAR's core capacity building programs.

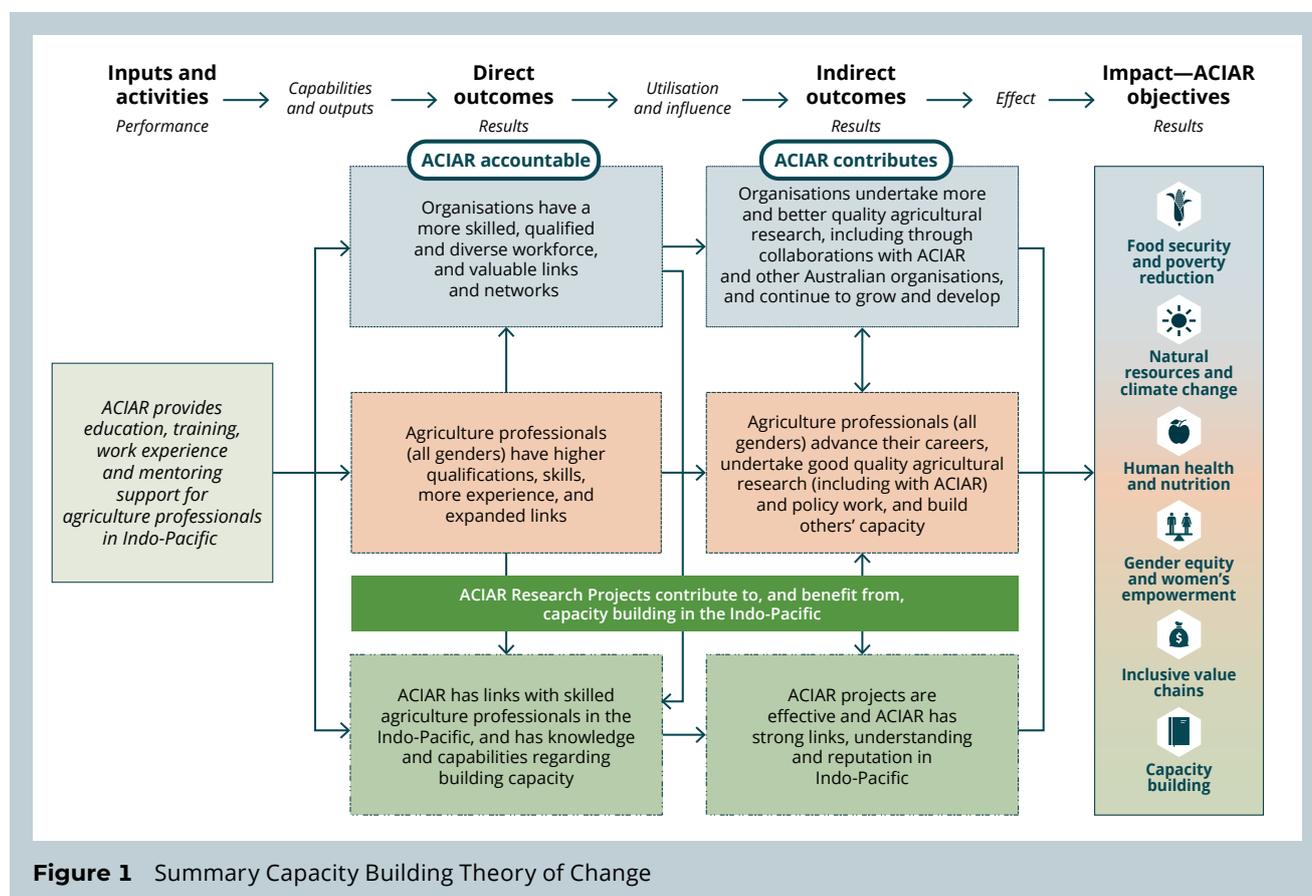


Figure 1 Summary Capacity Building Theory of Change

² The Theory of Change was updated with minor changes in March 2021.

3

Purpose of the study

The primary purpose of the JAF Tracer Study is to examine individual outcomes to assist and explore potential organisational outcomes as thoroughly as possible. It is intended to provide accountability of the outcomes of ACIAR's investment in long-term study and education scholarships for international agricultural researchers, and to provide insights which may assist ACIAR in refining and improving JAF scholarships in the future.

3.1 Domains of inquiry

The ACIAR Capacity Building Theory of Change (as shown in Figure 1), and the explicit intended outcomes it lists, were finalised in 2019. However, the intentions of programs such as the JAF have, in practice, reflected these outcomes and this theory for much longer. For this reason, the Theory of Change provides a useful and highly relevant framework for this study, despite being applied retrospectively.

The Theory of Change identifies 3 domains of change, or categories of outcomes: those for institutions (organisations), those for individuals (agriculture professionals), and those for ACIAR. These can be understood as the potential domains of inquiry for any monitoring and evaluation activity, including this one. The Tracer Study was designed to closely examine **outcomes for individuals**, as this was most feasible within the parameters of the investigation. **Outcomes for organisations and for ACIAR** were captured, in as much detail as possible, as a secondary area of inquiry, with insights emerging from the focus on individual alumni via the case studies.



4

Design of the study

The study used an explanatory mixed-methods approach, described in more detail in Annex 2. Data was collected sequentially, beginning with a survey, followed by a more in-depth qualitative study, comprising case studies from a sample of alumni. As the study sought to understand changes in a complex context, for which simple survey questions are generally insufficient, the qualitative case studies were considered particularly important in the study design.

ACIAR engaged an evaluation consultant to undertake the Tracer Study, who worked with a specialist survey research company. The survey component was implemented by the Wallis Group, a professional survey company with experience surveying international alumni like the JAF graduates. Survey analysis and the case studies, together with the overall report, were completed by Duniya Consulting.

4.1 Sample

The scope of the study is alumni whose scholarships concluded between 2010 and 2019. The parameters for this population sample were confirmed on the basis of the best available alumni details from existing information systems, and an assessment of the most meaningful timeframe for alumni to identify post-scholarship outcomes, which can be reasonably identified as having a link with the JAF program.

Within these parameters, data from the DFAT OASIS scholarships database initially indicated a total population of 286 alumni. Verification of this population identified a number of duplicates which, when addressed, resulted in a cleaned population of 272 alumni, including 87 women (32%) and 185 men (68%).

The study focused on those alumni who had successfully gained a qualification. Further cleaning of the sample was undertaken to exclude those who did not complete or graduate with a qualification. This resulted in a sample of 268 alumni with pass or pending results, comprising of 84 women (31.3%) and 184 men (68.7%).

4.2 Profile of survey respondents

From the survey population of 268 alumni, a total of 201 participants provided complete responses to the survey.³ This high response rate of 75% was achieved through considerable effort by the survey team, including follow-up emails and text messages, as well as phone calls. Alumni were supported to complete the survey online or over the phone, which further enabled a high response rate.

Annex 3 provides a complete profile of the survey respondents, with reference to the identified analytical variables.

³ 11 incomplete survey responses were excluded from the dataset analysed.



4.3 Case studies

Included in the study are a set of 13 individual alumnus case studies.⁴ These provide depth and richness to the data about the experiences and opinions of individual alumnus, both about the Fellowship and their career since graduating. The case studies also provide powerful illustrations of some of the outcomes and issues identified through the survey data.

A sample of 20 alumni were approached and invited to participate in a case study. They were purposefully selected to provide diversity: men and women⁵, geographical location, field of science, and to represent a variety of time periods since completing their JAF. Five alumni did not respond to the invitation despite indicating in their survey response that they would be willing; another individual initially agreed to participate but withdrew before the interview. As a result, the case studies include 5 women and 8 men.

Individual case studies were drafted on the basis of semi-structured long-form qualitative interviews with the individual alumnus and, in most cases, also with a representative of their organisation. Interviews were designed to align with the Capacity Building Program logic and the domains of inquiry for this study, while also allowing room for personal stories and other data to arise during the course of the conversations. Interviews were conducted using Zoom video calls and lasted as long as 90 minutes. The case studies are structured as narrative stories of the alumni JAF experience, and included in this report with the approval of the alumni profiled.

⁴ One additional case study remains unpublished due to delays in finalising it during the political unrest in the alumnus home country during 2021.

⁵ It is noted that survey respondents identified as male or female; none identified as non-binary or other gender.

5

Limitations of the study

The scope of the sample for the Tracer Study was constrained by the alumni data held within ACIAR and the DFAT Australia Awards system, OASIS. Due to its creation date, OASIS included fellows who graduated from 2008 onwards. Ideally, the study would have been expanded beyond this to include alumni as far back as the 2004 Tracer Study (i.e. those who graduated from 2005 onwards), but it was not possible to definitively identify those alumni from the general alumni data held within ACIAR. A global ACIAR alumni database is being developed, but at present, the available alumni data does not reliably identify graduation or completion dates for the alumni in the system. Therefore, the decision was made that the Tracer Study would only include alumni identified through the OASIS system, with updated contact details drawn from the ACIAR alumni system. While this limited the timeframe for the study's coverage, it did provide a more robust sample and still delivered a 10-year cohort of alumni for investigation.

The study was also somewhat limited due to the total travel bans associated with the COVID-19 pandemic. Ideally (and if budget had allowed), the case study phase would have included face-to-face interviews, which can often provide richer data than phone or video conference interviews, especially with regard to language and cultural differences. These constraints also meant that all the interviews were conducted in English by an Australian consultant rather than by local consultants in national languages. The overall number of case studies was also constrained by challenges associated with remote communication. However, the study was designed to enable interviews through a range of communication platforms, as outlined above, in order to achieve the best interview data possible given the circumstances. It is worth noting those alumni that did participate in case studies were generous with their time and input, generating valuable insights.

Both survey data and case studies are likely to have an element of positive bias. Alumni who did not have positive experiences, do not retain any links with ACIAR, or do not identify positively with their JAF, were less likely to respond to the survey. Case studies are even more likely to profile alumni with strong positive experiences and outcomes as they would be more motivated to share their stories publicly. Future monitoring and evaluation approaches may be able to address this positive bias by building stronger baseline data on JAF scholars and a longitudinal approach to data collection, so reliance on ex-post tracer studies can be mitigated.

6

Key findings about individuals

6.1 Completion rates



JAF scholars are highly dedicated to their studies

92.6%

JAF scholars complete their higher qualifications through the program



94.6%
of women
graduated



93%
of men
graduated

Almost all JAF scholars successfully graduate with a higher degree within the time period of their scholarship or shortly thereafter. The number of JAF scholarships awarded has varied over time, as budget availability and ACIAR priorities have shifted. Analysis of completion rates (including academic failure) is reliant on the data held in OASIS, the DFAT scholarships information management system, which also supports JAF administration. The definition of a 'fail' result in OASIS, determined by DFAT/AusAID, has varied over time, generally meaning that a thesis was not submitted and passed within a timeframe much shorter than standard practice within Australian tertiary institutions.

For the purposes of this Tracer Study, ACIAR adopted the Australian standard time period for completion. To reflect this, OASIS data for the period 2010–2019 was manually verified for all 32 records showing as 'failed'. This resulted in the correction of some alumni records within the population, showing that in fact only 18 out of 272 JAF scholars did not graduate with a qualification. This represents an overall non-completion rate of 7.4%. Women had a slightly lower non-completion rate (5.4%) compared to men (7.0%). Further, this shows that only a very small number of alumni (n=14) required an extended period (beyond 4 years) to complete their degree.

Current DFAT data about completion rates for higher degree research students shows a non-completion rate of 9.5%.⁶ ACIAR's non-completion rate is lower, although the difference in the time periods to record a 'fail' result may explain some of this difference.

More striking is the comparison with domestic higher degree research student completions. There is evidence that the disengagement (non-completion) rate for higher degree research students in Australia is around 20%⁷, and that the 9-year non-completion rate is 29.4%.⁸ On this basis, JAF scholars are highly successful, with the vast majority completing their degrees and securing higher qualifications as a result of their award.

⁶ As advised by DFAT following analysis of OASIS data on 5 January 2021.

⁷ RL Johnson, RA Coleman, NH Batten, D Hallsworth and EE Spencer, 'The Quiet Crisis of PhDs and COVID-19: Reaching the financial tipping point', *Research Square*, 7 July 2020, <https://www.researchsquare.com/article/rs-36330/v2>

⁸ Department of Education, Skills and Employment, *Higher Degrees by Research Cohort Analysis, 2007–2017*, DESE, Commonwealth of Australia, <https://www.dese.gov.au/higher-education-statistics/resources/completions-rates-higher-degree-research-students-cohort-analysis-2007-2017>

6.2 Career progress



Most JAF alumni feel their JAF has contributed to positive career progression

61.2%

Alumni attribute promotion to the JAF qualification

52.2%

Alumni report increased income

The alumni included in this study completed their JAF as recently as 2019, and as long ago as 2010. Thus, they have had a range of time periods since their studies in which to develop their careers, which influences the findings about their career progression.⁹

Most JAF alumni are applying their skills, knowledge and networks to their organisation over the long-term. More than 7 in 10 alumni are still working with the same organisation as when awarded their JAF. In many cases, this is a combination of personal choice and commitments associated with returning to work for a specified period post-scholarship, as many organisations or national governments ‘bond’ with returned scholars for specified periods of time after their scholarship. Three-quarters of alumni have been with their organisation for 5 or more years, and 92% of alumni are currently working full-time. Thus, it can be concluded that if alumni are utilising their skills, knowledge and networks within their organisations, the JAF program contributes to those organisations over the medium- to long-term.

Table 1 Alumni with the same employer as at the time of JAF

Same employer	No.	%
No	51	25.4
Other (Specify)	6	3.0
Yes	144	71.6
Total	201	100

‘Since I returned from my JAF scholarship, I have played a role as a technical research coordinator ... been involved in designing research ... and other important agriculture issues for our country ... My career is improved since I studied through my JAF.’

Mr Luis de Almeida (case study L)

⁹ The sample size was not sufficient to enable robust analysis of career (or other) outcomes on a disaggregated basis between completion years.



JAF alumni remain agricultural researchers up to 10 years after their JAF

85.1%

Alumni are still actively involved in research



83.3% of women still involved



85.8% of men still involved

JAF alumni are mostly still active in research. A significant majority of JAF alumni are still involved in research (85.1%, n=171), further indicating that the investment in research studies through the JAF is being realised through ongoing application of those skills in a research career. There is no meaningful difference between men and women in this regard, with 83.3% of women and 85.8% of men still employed in research roles.

In reflecting on the possibilities made available in their research work thanks to their JAF, alumni identified 5 main things, and rated the extent to which these had been enabled. The rating scale ranged from 'to a large extent' to 'not at all', and complete data is provided in Annex 4.



Completing a JAF directly benefits alumni outcomes

96%

Alumni say their JAF increased their research output

65.7%

Alumni say their JAF helped secure additional research funding

ACIAR support through the JAF has enabled alumni to maintain or increase their research output, including publications. It is striking that 96% of alumni identified that the qualification they obtained through their JAF had enabled them to increase their research output. Interestingly, this includes at least some of those alumni who are no longer (or not currently) in a research role.

JAF scholars share their knowledge through teaching and supervising younger researchers. In addition to the survey data showing the extent of teaching and supervision, case studies provide a number of examples of alumni identifying this as their most important and rewarding work. This indicates that contributing to the ongoing growth and strengthening of agricultural science in their home countries is at least as important as their own research. Therefore, there is evidence that ACIAR's investment in JAF scholars has a multiplier effect on the wider agricultural science sector in home countries as alumni contribute to the development of other scientists.

There may be future opportunities for ACIAR to extend this aspect of the JAF program by strengthening the teaching, mentoring and supervisory skills of fellows and alumni.

The Tracer Study clearly shows that alumni believe the qualifications they secured through the JAF is having a tangible, positive influence on their work as agricultural researchers.

'My greatest achievement is mentoring ... the next up-and-coming generation of researchers, both men and women.'

Dr Ronnie Dotaona (case study B)

Table 2 Benefits enabled by the qualification

Benefit	large + moderate extent	%
Increase your research output	193	96.0
Increase your scientific publications	173	86.1
Lead research projects	167	83.1
Supervise research students	143	71.1
Secure additional research funding	132	65.7

The majority of alumni feel their JAF has helped them get promoted, directly contributing to their personal career development. Asked to think more broadly, alumni identified the ways in which their JAF had contributed to their careers. Nearly two-thirds of alumni attribute a promotion to their Australian qualification. The range of factors enabling promotions were beyond the scope of the study, and it is worth noting that the survey included alumni who had only very recently graduated (as recently as a year ago) who would be much less likely to have secured a promotion yet. The 'scale' or significance of alumni promotions, or the extent to which alumni have climbed the professional or organisational ladder since completing their JAF, cannot be analysed on the basis of survey data. The ACIAR alumni network is a more effective means to identify senior-level and high profile alumni on a case-by-case basis.

It is also important to note that in many contexts, promotions are not solely dependent on qualifications and/or performance, but also seniority, political ties and other factors. Several case study interviewees identified these additional factors, but in all cases, alumni requested that this not be detailed in the case studies given the sensitivity of the issue.

Table 3 Career contribution enabled by the JAF

Career contribution	No.	%
Promotion	123	61.2
Improve my organisation	121	60.2
Increase salary/income	105	52.2
Develop research collaborations with Australian researchers	100	49.8
Develop research collaborations with international (non-Australian) researchers	99	49.3
New/additional research funding	86	42.8
New job	68	33.8
Go on to further qualifications	64	31.8

What is interesting to note in this data is the way that alumni identified a mix of personal career outcomes, organisational contributions, and achievements in their research and professional work. This highlights the multifaceted impact that a JAF scholarship can have on an individual—it is not only an academic or research scholarship, but a significant personal opportunity as well.

When exploring the responses between men and women, some differences are apparent. Table 4 shows the top 5 career aspects that male and female alumni attribute to their JAF. Men most commonly identify their contributions to their organisation, while women most commonly identify securing a promotion as an outcome of their JAF.

Table 4 Top 5 career contribution enabled by the JAF by gender

Career contribution			Career contribution				
	No. men	% men		No. women	% women		
1	Improve my organisation	95	67.4	1	Promotion	31	51.7
2	Promotion	92	65.2	2	Increase salary/income	28	46.7
3	Increase salary/income	77	54.6	3	Develop research collaborations with international (non-Australian) researchers	26	43.3
4	Develop research collaborations with Australian researchers	75	53.2	4	Improve my organisation	26	43.3
5	Develop research collaborations with international (non-Australian) researchers	73	51.8	5	Develop research collaborations with Australian researchers	25	41.7

6.3 Quality and relevance of the JAF



Skills and knowledge gained in Australia are highly relevant, and remain in use today. Unsurprisingly, a high majority of alumni reported their studies in Australia were ‘very relevant’ to their work at the time of their scholarship (85.1%, n=187). That relevance has been maintained, with 84.1% (n=169) of alumni reporting that their studies remain relevant to the work they are currently doing. Furthermore, almost all alumni (93.0%, n=187) are still using the skills and knowledge they developed during their JAF.

Table 5 shows the specific technical skills that proved to be the most useful.

Table 5 Most useful technical skills gained from JAF

Technical skill	No.	%
Research design and planning	176	87.6
Science writing (publications)	160	79.6
Data analysis	155	77.1
Fieldwork and data collection	152	75.6
Use of research/lab equipment and technology	85	42.3
Use of IT and computers	68	33.8

This provides sound evidence that JAF scholars are selecting research programs and courses which align with their interests and ambitions, and that their experiences in Australian universities are delivering relevant and practical research skills.

6.4 Networks and links



Many alumni retain their connections with ACIAR, the institutions in which they studied, and their peers

78.6%

Alumni say they have active links with staff at the university where they studied

60.7%

Alumni say they still have active links with ACIAR staff

71.1%

Alumni still connect with international students they met during their JAF

72.6%

Alumni maintain organisational links with universities in Australia

A key component of the ACIAR Capacity Building Theory of Change is the creation (and maintenance) of useful links between alumni and their organisations, and people and organisations in Australia. Alumni reported their closest ongoing links are with the staff of the university where they studied, other international students they met in Australia, and ACIAR staff (see Table 6).

Table 6 Ongoing active links for JAF alumni

Active links	No.	%
Staff at the university where I studied	158	78.6
Other international students	143	71.1
ACIAR staff	122	60.7
Other individual researchers in Australia	114	56.7
Other international researchers I met in Australia	79	39.3
Australian community members	77	38.3

'The JAF is so much better aligned with my career opportunity and aspiration, and once I landed in Australia, I knew I had made the right decision.'

Ms Thi Hang Nga Le (case study H)

Table 7 Ongoing active links with organisations for JAF alumni

Active links	No.	%
University of tertiary institution (i.e. can award formal qualifications)	146	72.6
Government research institution (i.e. cannot award formal qualifications)	54	26.9
Government ministry or department	50	24.9
NGO, development or other organisation not otherwise listed	37	18.4
Private research institution	25	12.4

It is worth noting that although alumni have strong ongoing connections with Australian universities, there is little evidence of developing links with any other organisations.

When asked to identify the most significant of all their ongoing links, alumni most strongly identified their ongoing links with Australian universities (34%, n=69). This is often, but not necessarily, the university where they studied. For those who continue to have research links with Australian universities, this can also be with universities where their research supervisors or co-supervisors work (not necessarily the institution where they were enrolled), or where they have existing links through current research collaborations.

Case studies show the personal relationships developed between JAF scholars and their supervisors are often the deepest, which may contribute to the strength of ongoing university links. The case studies also show the instrumental role of supervisors in fellows feeling supported, both academically and personally.

A total of 122 alumni (60.7%) indicated ongoing links with ACIAR staff and the program's alignment with the Capacity Building Theory of Change. However, only 11 identified this as the *most significant* of the links they developed in Australia—this likely being the relationships formed with other Australian researchers through past and present research projects.

Dr Ghani Akbar says his confidence increased greatly through his JAF experience, saying that he now sees himself as: ‘... a person who can do something ... [who] has the abilities and who is not less than anyone else in the organisation’.

(case study I)

Research collaborations are by far the most common use of alumni networks, according to 54.2% of the 155 alumni who provided additional information about their links.

In some instances, detailed in the case studies, networks have been crucial in helping to address other challenges, including research resources shortages, and limited access to academic journals and other information.

Other activities were mentioned by small numbers of alumni (fewer than 10) and are not shown here, but are included in Annex 4.

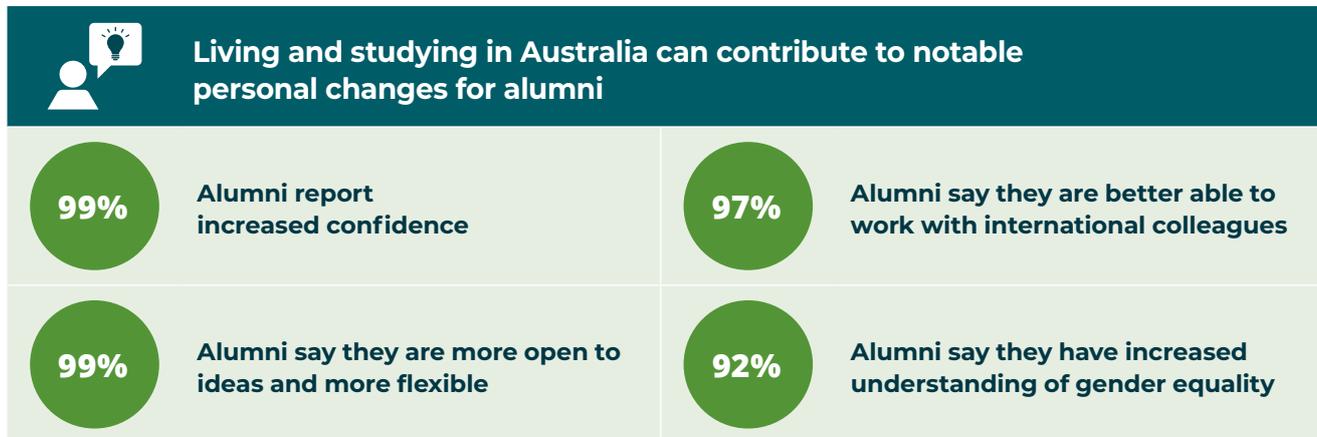
To stay in touch with current developments in his academic field, Dr Nascimento Nhantumbo relies on his network to access academic journals, saying: ‘... having the people who are doing research, able to read and have access to up-to-date knowledge in their subject areas, it’s really fundamental ... Therefore, having timely access to information is really critical. It can be a quite limiting thing, this access to information.’

(case study E)

Table 8 Link usage by JAF alumni

Link usage	No.	%
Advice or mentoring support (e.g. help with publications, research design)	12	7.7
Collaborating on research proposals or projects	84	54.2
Sharing information	16	10.3
Joint publications	18	11.6

6.5 Personal changes



It is well documented that living and studying in another country can have profound and wide-ranging personal effects; it is not just an academic experience. The Capacity Building Theory of Change anticipates these outcomes for alumni, including increased confidence, ambition, and their understanding of and commitment to gender equality and inclusion.

'I think everyone should have fairness in every way: in the workplace, in schools and everywhere.'

Dr Ronnie Dotaona, reflecting on his changed perspectives on gender equality after the experience of living (in shared accommodation) and working with female colleagues in Australia.

(case study B)

Living in Australia and studying at Australian institutions can have a deep personal impact. Alumni were asked how their JAF affected them personally, eliciting a range of responses. The most common was increased confidence, better ability to work with international colleagues, and being more open-minded and flexible. Some alumni also note changes in family members who accompanied them, especially their children.

'... like mother and son.'

Dr Somvang Phimmavong describing the support he received from Professor Ozarska during his PhD studies in Melbourne.

(case study G)

Table 9 Personal changes experience by JAF alumni

Personal changes experience	No. strongly agree	No. agree	No. neutral /unsure	No. disagree	No. strongly disagree
More confident	149	50	2	0	0
Better able to work with international colleagues	148	47	6	0	0
More open to ideas / more flexible	140	59	2	0	0
Better able to work with others / in teams	131	62	8	0	0
Understand cultural and social differences better	130	59	12	0	0
Stronger English language skills	124	70	7	0	0
Increased understanding of gender equality	100	85	16	0	0
More ambitious	72	94	31	3	1

There is evidence to indicate a JAF scholarship influences alumni views about gender issues and inclusion, with 92% of alumni reporting they now have a better understanding of gender equality. The case studies also provide specific examples where this has occurred. This is an important finding as building a cohort of more inclusive agricultural scientists is an intended outcome of the ACIAR Capacity Building Program.

Alumni value improving their international collaboration capability and technical research skills. When asked to identify their *most significant* personal change, alumni most commonly identified their ability to collaborate internationally, and an increased confidence in their technical research skills (16.4% and 15.9%, respectively).

When exploring differences between men and women, both groups identified the same top 3 changes as the most significant (see Table 10). However, the order was slightly different. Please see Annex 4 for additional data.

Describing herself as “two-headed”, meaning partly Asian and partly Western, Dr Sonnthida Sambath is considered by her Deputy-Director to be someone who is very good at working with other people and organisations on behalf of her organisation, the Cambodian Agricultural Research and Development Institute (CARDI).
(case study J)

Table 10 Top 3 most significant personal changes for men and women after the JAF

Personal change	Men no.	Men %	Personal change	Women no.	Women %
International collaboration abilities	28	19.9	More confident in technical (research) skills	9	15.0
More confident in technical (research) skills	23	16.3	Teamwork / working with others / social skills	7	11.7
Teamwork / working with others / social skills	14	9.9	International collaboration abilities	5	8.3

7

Key findings about ACIAR

Case studies provide a number of examples which show that an active working relationship between ACIAR research program managers or project leaders, and candidates for JAF awards, is often the basis for active recruitment of successful candidates for JAF. This relationship can extend beyond encouragement, to assistance with applications; advice on their choice of university, courses and supervisors; and support for the personal aspects. This provides the foundation for close ongoing links after a fellow graduates and returns to their home country.



Links with ACIAR remain strong, even up to 10 years after graduation

26%

Alumni currently involved in an ACIAR project

61%

Alumni remain actively connected with ACIAR staff

Many alumni retain their connections to ACIAR, as research collaborators and/or through active personal friendships and professional links. Between one and 10 years after their JAF, 26% of alumni (n=72) report that they are currently engaged in an ACIAR project, with more in Forestry (n=13) and Agribusiness (n=12) than in any other field.¹⁰

Regardless of current alumni involvement in ACIAR research projects, many are still connected with ACIAR staff (61%, n=122). A significant majority of alumni remain active agricultural researchers (85%), meaning there is also potential for future collaboration.

Active support, encouragement and advice from senior academics with strong ACIAR links were instrumental in Dr Ravinesh Ram's application for a JAF. Hearing he was successful, Dr Ram said: 'I couldn't believe it. I was so happy, and so excited'.

(case study D)

Among the alumni surveyed, 65% (n=130) indicated they were working on an ACIAR project during or immediately after completing their JAF. This relatively low result is unexpected given the longstanding requirement that JAF scholars should be attached to an ACIAR project, but it may be partly explained due to the wording of the question. While the alumni survey did not specifically ask about involvement in the ACIAR alumni network, the case studies provide insights into the way in which some alumni remain actively involved in the network even when they are not currently working on an ACIAR project.

¹⁰ With a sample of 201 alumni over 10 years, there was an insufficient volume of data to enable a more granular investigation of this question.

8

Key findings about organisations



Individual skills gained during a JAF remain highly valuable to organisations

71.6%

Alumni are with the same employer as at the time of their JAF

75.6%

Alumni have been with their organisation for 5+ years

A high proportion of alumni are still working at the same organisation as they were when they undertook their Fellowship. Furthermore, the vast majority have been with their organisation for 5 years or more (see Table 11).

This suggests the Fellowship is likely to be contributing to its aim of strengthening organisations in partner countries, as the high retention rate means organisations are able to leverage the higher qualifications and skills that alumni bring back from Australia.

Table 11 Time with current employer

Time	No.	%
Less than a year	14	7.0
1-2 years	19	9.5
3-4 years	15	7.5
5 or more years	152	75.6
Not sure / Prefer not to say	1	0.5
Total	201	100.1

As ACIAR continues to refine its capacity building, including through targeted organisational development programs in selected countries, there is scope to enhance outcomes for organisations. The case studies also provide a number of examples of the way in which organisations view JAF scholarships, other ACIAR capacity building investments, and the opportunities that come from international collaborations and study opportunities. These are highly valued and in some cases are actively pursued by organisations on behalf of their staff.

The Acting Dean of the Faculty of Economics at Nong Lam University in Vietnam, Dr Nguyen Bach Dang, remembers JAF alumnus Dr Lap Doc Tran as a good teacher and researcher before his JAF, but a much stronger one on his return. Dr Dang noted Dr Tran is now one of the most important members of the faculty's staff, leading one of the most important departments.

(case study A)

9 Case studies

9.1 Case study A:

Tran Doc Lap (Vietnam)

PhD, University of Western Australia, 2011



► *The Third International Conference on Sustainable Agriculture and Environment* held at Nong Lam University (NLU) where Dr Tran presented his research results on 'Determine the factors improving B2B relations between middleman and famers: a case study of vegetable production in Don Duong district, Lam Dong province, Vietnam'. Photo: Mr To Tan Long.

'ACIAR changed my life,' says Dr Tran Doc Lap. He first joined an ACIAR project team in 2003, while teaching agricultural economics at Nong Lam University in Ho Chi Minh City and working on the project: *The Economics of Developing Reservoir Aquaculture in Vietnam*.¹¹

It was a turning point—he had wanted to study abroad, but given his limited English and insufficient research experience, it wasn't possible until he joined an ACIAR project. With support from his project leader, Dr Tran successfully applied for a John Allwright Fellowship (JAF) and in 2006, he left for the University of Western Australia (UWA) to undertake his English language training and PhD program. His thesis examined multiple-use water management in reservoirs which supported both irrigation and fisheries, and he worked to develop a model to optimise water use to maximise the benefits for local communities, while enabling the cultivation of rice as well as for fisheries. Dr Tran emphasises that balancing these competing uses is a complex challenge, especially when compounded by drought.

Dr Tran's family accompanied him to Perth, and his 2 young children enjoyed early childhood care and education experiences there. Life in Australia came with significant challenges, particularly the cultural differences and language barriers. As he says, 'Doing a PhD in Australia is so different from Vietnam. We have to trust oneself and trust one's supervisor, and discover a new thing.'

However, he describes the support from UWA as 'perfect, excellent', especially in assisting him with writing, reading, proofreading and other aspects of academic language use. And despite the challenges, Dr Tran excelled, nominated for best PhD thesis of the year at the Australian Agricultural and Resource Economics Conference.

On the basis of his PhD from UWA, Dr Tran successfully won a Fulbright Postdoctoral Fellowship to University of California in Berkley. He says this gave him a chance to broaden his network and experience beyond Australia. Dr Tran spent a year in Berkley before returning home to Ho Chi Minh City to continue teaching and doing research.

¹¹ ACIAR project FIS/2000/018



► The scientific research workshop held at Nong Lam University (NLU) in 2021 where Dr Tran was the keynote speaker on the topic, 'Factors affecting scientific research motivation of lecturers'. Photo: Mr To Tan Lo.

Dr Tran was promoted to the Head of the Department of Agricultural Economics in 2012. The Acting Dean of the Faculty, Dr Nguyen Bach Dang, remembers Dr Tran as a good teacher and researcher before his JAF, but a much stronger one on his return. Dr Dang also says that Dr Tran is now one of the most important members of the faculty's staff, leading one of the most important departments. He contributes to teaching, research, funding proposals and research supervision both within his own and other departments, such as Rural Development.

Building on his doctoral research, and with ACIAR support, Dr Tran developed management guidelines for reservoir managers. He has observed that applying these guidelines helps managers of the reservoirs to make better water management decisions, which has increased profits, and reduced costs for fish and rice producers. He continues to develop this management model, and is working to expand it to other types of reservoirs and areas of Vietnam. He is also the author a book, *Multiple-use Resource Management: Optimal Reservoir Water Release Strategies for Irrigation and Fisheries in Vietnam*.

Dr Tran is currently expanding his research into issues of sustainable agriculture, while concurrently supervising a number of postgraduate students. He has also had many opportunities for collaboration with international partners, including a significant ACIAR project which is currently underway, called *Strategic review and planning for enhancing the livelihoods of coffee and pepper smallholders in the Central Highland of Vietnam through improving stakeholders' participation in agribusiness led value chains*.¹² He is hopeful that a proposal to ACIAR for an additional project will be successful.

Although Dr Tran has had success securing research funding, his university faces ongoing challenges, with limited resources and research funding, and poor access to journals. Dr Tran appreciates the support available through his ongoing links with ACIAR and the ACIAR alumni network, as well as his colleagues in the USA. He is committed to maintaining his connections, and calls this 'life after JAF'.

Reflecting on the impact of the COVID-19 pandemic, Dr Tran observes that many aspects of research and teaching could continue via digital technologies during lockdown, but ultimately nothing can replace face-to-face communication. At the time of writing, there continue to be international travel restrictions which constrain his work somewhat, but fortunately, university campuses reopened in Vietnam in mid-2020, allowing face-to-face interaction to resume.

Dr Tran continues to carry the advice of his JAF supervisor with him: 'Don't just believe when you are told something, even by your supervisor. Look into it yourself and find out something new. In other words, it is important to keep an independent and inquiring mind.' His advises other scientists who follow in his footsteps to 'keep trying to publish, to work, to research—that is how you can best acknowledge ACIAR'.

12 ACIAR Project AGB/2018/208

Case studies (continued)

9.2 Case study B:

Dr Ronnie Dotaona (Papua New Guinea)

PhD, Charles Sturt University, 2015



► Ronnie in a *Metarhizium*-sweet potato weevil trial plot at the Agriculture Farm, PNG University of Technology in Lae, PNG. Photo: Jack Honeaki.

Dr Ronnie Dotaona is from Milne Bay in the east of Papua New Guinea, and moved to Morobe Province for university, where he still lives and works at the PNG University of Technology (Unitech) in Lae.

Ronnie's first involvement with ACIAR was as a university student in 2005, thanks to a collaboration between the Unitech Department of Agriculture and ACIAR. His research was sponsored through an ACIAR Pacific scholarship, and in 2007, he achieved his Master's. He first learnt about the John Allwright Fellowship (JAF) in 2008, and in 2010, the head of his department suggested he apply for a JAF to further his research career. Ronnie had helped John Dillon fellow, Dr William Kerua, to establish a partnership between Unitech and Charles Sturt University. Therefore, when he was awarded his JAF, he chose to pursue his PhD at Charles Sturt, having already visited the university.

Apart from the cold winter in Wagga Wagga, Ronnie's greatest challenge in his academic life in Australia was for this self-described 'quiet fellow' to come out of his shell. The university helped him with this, and he recalls his academic advisers and supervisors supporting him to become independent and confident. This enabled him to travel confidently after completing his PhD, including to Spain on an Erasmus Plus Fellowship.

Ronnie's doctoral research advanced his pre-existing project—investigating the biological control of the sweet potato weevil, which fortunately was easily available for laboratory study in Australia. The findings of his research informed a larger project, which continued until 2021, working with farmers in PNG to reduce the use of pesticides and better control sweet potato weevils on their farms in the Highlands. It is hoped these findings will contribute to a drop in pesticide use on other crops in PNG, such as citrus and brassicas.



When he returned to his work at Unitech, Ronnie joined a number of university committees, including the Academic Quality Assurance Committee. This enabled him to pursue not only his own research, but also contribute to the development of Unitech as an institution. He now has a significant role teaching and supervising postgraduate students, including a relatively large number of female students compared with that of his colleagues. He feels he motivates students effectively, thanks to approaches learnt in Australia during his JAF. Ronnie describes himself as more open and accessible, as he aims to replicate his own experiences at Charles Sturt with his students in PNG.

Ronnie also recalls learning extensively from his experience living in shared housing with other mature-age students, all of whom were women, and from his many fellow research students who were also women. Returning to PNG, Ronnie feels he is better at working with women as a result. Now the father of daughters, he says, 'For me ... I think everyone should have fairness in every way—in the workplace, in schools and everywhere.'

Like many other JAF scholars, Ronnie experiences challenges associated with the limited budget and resources in his home institution, which constrains his research and the extent to which he can fully participate in international research. Like many other academics, he also has a heavy teaching load. He continues to draw on the advice and support of his former supervisors. These links, as well as the network of JAF alumni who work in his field, continue to be important, enabling ongoing collaboration and mutual support.

The COVID-19 pandemic has affected both research and teaching in 2020, with restrictions on travel within PNG limiting field trials, and restrictions on campus and family life in Lae. And while—at the time of writing—those restrictions are now relaxed and work is getting back on track, aspects of academic life continue to be different. Unitech still uses online technology much more than before, for teaching, communication and collaboration. However, Ronnie will always much prefer face-to-face interaction and teaching.

In 2019, Ronnie became part of the first Institutional John Dillon Fellowship program, providing him with the opportunity to consolidate the leadership skills and international perspectives that he first developed through his JAF. He says, 'The JAF helped me to look at challenges from another angle. To maintain connections was the most important thing ... the JAF helped me [with] the first step to establish networks.' In his field of crop protection, Ronnie adds that his JAF 'built me as an academic and also as a person'.

Finally, when reflecting on his achievements so far, Ronnie says, 'My greatest achievement is mentoring ... the next, up-and-coming generation of researchers, both men and women. Because I won't be here for so long ... And I think if we look at women scientists, especially in agriculture, it's one-sided. We have a lot of male scientists, but not enough women.' With his active network of ACIAR alumni and his commitment to teaching and research, Ronnie will continue to contribute to agricultural development in PNG well into the future.

Case studies (continued)

9.3 Case study C:

Ratih Damayanti (Indonesia)

PhD, University of Melbourne, 2016



► Dr Damayanti identifying wood fossils in 2018.
Photo: Kristdiyanto.

Dr Damayanti has always been fascinated by wood. As a school student, she loved hiking and walking in nature, which led her to study forestry. With undergraduate and master degrees from Institut Pertanian Bogor University (IPB University), Dr Damayanti has worked with the Ministry of Environment and Forestry since 2006. Early in her tenure at the Ministry, she moved to the xylarium—the ‘wood library’—where she could continue her research into timber as part of the Forest Products Research and Development Centre in the Forest Research and Development Agency (FORDA).

Professor Barbara Ozarska from the University of Melbourne visited the Forest Products Research and Development Centre in 2009 to discuss a potential collaboration. Those discussions led to the ACIAR project, *Improving added value and SME capacity in the utilisation of plantation timber for furniture production in Jepara region*,¹³ which was implemented through a collaboration between the University of Melbourne, FORDA, IPB University, and Gadjah Mada University. The project was especially significant as it was the Centre's first international collaboration in many years.

Professor Ozarska suggested Dr Damayanti apply for a John Allwright Fellowship (JAF) and do her PhD in Australia, and provided support throughout her application process. Senior officials at FORDA also supported her application, knowing the major investment ACIAR makes in capacity building. Dr Damayanti was excited by the opportunity to undertake a high-quality technical and scientific education, and the chance to improve her problem-solving skills, strengthen her English language skills, and develop an expanded international network.

She recalls: ‘Study in Australia was my dream. The country is one of the students’ first-choice study destinations. Australia promotes innovative, creative and independent thinking, and is also one of the best places to live. It is a young, vibrant and friendly country in which students can live, learn and grow.’

With the support of her supervisor, Dr Associate Professor Juco Ilic, Dr Damayanti completed her doctoral research. Her project investigated *Wood quality of young fast grown plantation teak and the relationships among ultrastructural and structural characteristics with selected wood properties,*

¹³ ACIAR Project FST/2006/117

building on her master degree study and deepening her knowledge as a wood anatomist.

Dr Damayanti says she 'learnt a lot from all the study process: planning, collecting the samples, preparing the specimen, conducting laboratory activities, analysing and writing the thesis. My supervisor was deeply involved and always gave very detailed input. My capability in research improved thousandfold!' Thanks to her incredibly strong work ethic, Dr Damayanti's dissertation was passed without revisions and in just 3-and-a-half years, all while caring for her 2 children alone (while her husband remained in Indonesia).

Life in Australia as a single parent was demanding. But Dr Damayanti's sons, aged 17 and 9 at the time of interview, loved living in Australia and both hope to return one day. Her eldest son hopes to win a scholarship to study in Australia. His English language skills, developed in Australia, have enabled him to excel at school, and Dr Damayanti is certain their time in Australia changed his life.

A highlight for Dr Damayanti was the scientific writing workshop that was part of the JAF program. This came at exactly the right time, just as she was beginning to write her thesis, and gave her the opportunity to connect with JAF scholars from around the world and with ACIAR staff in Canberra.

Dr Damayanti says, 'JAF changed me to be a more confident person ... [it] gave me the opportunity to study in the best university in Australia and meet great experts whom I had only read in journals previously.' With a qualification from a prestigious university and her extraordinary knowledge, energy and commitment, her career has been remarkable. Returning to Indonesia in 2016, Dr Damayanti was appointed the Head of the Lignocellulose Anatomy Laboratory in 2017. The lab is the only one in Indonesia which is internationally accredited for wood identification testing (ISO17025:2017). In this role, she oversees the xylarium while also continuing to conduct research and collaborate on projects.

She has produced more than 80 publications, and more than 10 patents and copyrights, ranking her as high as sixth among around 500 researchers in the Indonesian Ministry of Environment and Forestry.

The xylarium now houses more than 200,000 timber specimens, including 7,000 authentic Indonesian species as well as international species, and more than 100 bamboo and rattan species. This collection has been the basis for Indonesia's revised classification of commercial timber; work in which Dr Damayanti played a major role. This classification is the foundation for a system that aims to balance the needs of the timber industry, the government, and the natural environment.

Dr Wening Wulandari, the Acting Director of the Forest Products Research and Development Centre, is effusive about Dr Damayanti's significant contribution to the development of the xylarium, and to research and development in Indonesia. She also emphasises that Dr Damayanti has many additional responsibilities,

including being the national representative on the ASEAN Working Group on Forest Products and Development, and an assessor for the Indonesian Institute of Science.

In 2020, at the time of interview, the restrictions associated with the COVID-19 pandemic meant Dr Damayanti had been working from home, even moving her laboratory equipment there. Her work had been affected as her funding was cancelled due to the government's decision to shift all research funding to COVID-19. Dr Damayanti's lab had subsequently shifted to producing free disinfectant and sanitisers for the local community, and had also taken responsibility for supervising a number of university students who would otherwise be unable to continue their studies while their university campuses were closed to limit virus transmission.

In addition to her achievements as a prominent Indonesian researcher, Dr Damayanti is also a nationally awarded inventor. The xylarium collection has always been important for research, education and bio-forensic purposes, but with only experienced researchers and officials able to access it, there were significant constraints to its use. In response to this, Dr Damayanti and her team created a mobile app, AIKO-KLHK, which enables rapid wood identification at any time or place, with a focus on Indonesian species. Its use is accelerating the process of environmental and forestry law enforcement in Indonesia, and has made the information from the xylarium collection much more widely accessible.

The creation of AIKO-KLHK has brought international and national attention to Dr Damayanti's work. She has been invited to present the app at international meetings and in 2019, TEMPO Magazine included her as one of 6 leading women innovators in a special report, *The Eureka Moment of Female Inventors*. She also stands as an expert witness in legal cases against illegal forestry in Indonesia, provides training and consultant services on wood identification for customs and the timber industries, and was nominated as one of the Top 10 Most Inspiring Civil Servants in Indonesia. Despite these many achievements, Dr Wulandari describes Dr Damayanti as a humble and hard-working person, who 'got a good result after getting a scholarship through JAF'. She goes on to say that she hopes many other researchers in their institute can have similar opportunities through ACIAR, and achieve similar results.

Throughout this extraordinary career, Dr Damayanti maintains her connections with Australia. She still works closely with Associate Professor Ilic and they often collaborate on the identification of export timber. She sums up her experience saying, 'JAF created a new me.'

Case studies (continued)

9.4 Case study D:

Ravinesh Ram (Fiji)

PhD, James Cook University, 2017



► Dr Ram with a food vendor at Labasa Market. He is sharing the results of research on the impact of microplastics on aquatic organisms and is encouraging the appropriate disposal of plastic waste at the market. Photo: Pradip Lal.

Dr Ravinesh Ram describes his John Allwright Fellowship (JAF) as ‘a beautiful story’ which is always fresh in his memory. It is also a story of networks and relationships that led to opportunities and achievements.

Growing up with a brother and 3 sisters, Dr Ram completed his initial tertiary education in Fiji, gaining a European Union scholarship to complete his master degree at the University of the South Pacific (USP). His research focused on bêche-de-mer processing, with the aim of identifying and processing the highest value species for export markets. Dr Ram went on to work at USP, teaching foundation students in pre-degree courses, and also joined a bêche-de-mer processing business run by Canadian Brian Roadhouse as a technical director.

During this time, Mr Roadhouse introduced Dr Ram to Mr Theo Simos and Dr Cathy Hair from the University of Adelaide. While discussing bêche-de-mer processing, the value chain and adding value to the high to low grade commercial bêche-de-mer species, Mr Simos suggested that Dr Ram should consider doing a PhD, having read a paper Dr Ram had published in the SPC (Pacific Community) *Bêche-de-mer Bulletin*.

Dr Ram was subsequently introduced to Professor Paul Southgate (Professor of Tropical Aquaculture, formally at James Cook University, currently at the University of the Sunshine Coast), who was seeking strong candidates for doctoral studies, which would allow Dr Ram to further investigate the biochemistry of processed and fresh bêche-de-mer.

In 2010, Professor Southgate visited Fiji with a team of ACIAR scientists and they met in person; their relationship growing from there.

Professor Southgate introduced Dr Ram to the JAF program and helped him with his application. This active support, encouragement and advice from senior academics with strong links to ACIAR proved invaluable. Describing his response to hearing his application was successful, Dr Ram says, ‘I couldn’t believe it. I was so happy, and so excited.’

As it proved difficult for Dr Ram to secure his release from USP to take up his scholarships, he eventually resigned, thinking, ‘I’ll just do it, and whatever fate is there for me in the future, I’ll take it up’, and started his doctoral program with Paul Southgate at James Cook University (JCU) in 2013.

Life at JCU was very different from USP. Dr Ram recalls the training, support and facilities, which were instrumental in building his capacity for research design, literature reviews and scientific writing. His PhD—focusing on optimising nutrient composition of Fiji's *bêche-de-mer*—was supported by several supervisors. He spent 2 years at JCU before moving to the Queensland Department of Primary Industries labs at Coopers Plains to work with research scientist Andrew Forrest. This allowed Dr Ram to experience life in 2 different institutions, in 2 different Australian cities.

Not everyone in the Townsville community was welcoming, but Dr Ram was determined not to feel fear, focusing instead on enjoying his studies and his time living in Australia. He enjoyed the independence and anonymity of life in Australia, but found it difficult being separated from his wife Roveena Chand, also a research scientist who was examining the population genetics of *Holothuria scabra* in Fiji. Fortunately, Dr Ram was well-supported by his supervisors and other JAF scholars he met during a visit to Canberra. He describes one of them as 'like a long-lost brother' and they remain close.

Returning to Fiji in 2017, Dr Ram secured a short-term contract as Assistant Lecturer at the School of Biological and Chemical Sciences at USP, teaching microbiology. Through this position, he met the Dean of the Faculty of Science, Technology and the Environment.

At the end of that year, a position as Lecturer in Biology became available at the Fiji National University (FNU). The position was far from Dr Ram's home in Suva, at the Labasa campus of FNU, but knowing he'd been able to adjust to life in Australia gave him the confidence he could also adjust to life in a new part of Fiji.

Dr Ram recalls how his PhD studies in Australia have moulded him, making him a good researcher and a good scientist, with the ambition and passion to pass this on to his students at FNU. After some persuasion, he convinced his Head of Department to allow him to launch the first postgraduate program in biology in Labasa. He started with 11 postgraduate diploma and master's students from various disciplines, focusing on research projects and research methodology in collaboration with the College of Medicine, Nursing and Health Sciences. There were limited lab resources at the FNU Labasa campus, but he was able to support students in biology and fisheries across several different areas of research.

By early 2019, Dr Ram was preparing to apply for a promotion to Assistant Professor and came to the attention of the Dean of the College of Agriculture, Fisheries and Forestry, Professor Paul Iji. Professor Iji, another Australian alumnus, was bemused by Dr Ram's position in biology when he was clearly a fisheries specialist. So, in July 2020, once Dr Ram's promotion was confirmed and his current batch of students had completed, he moved to the College of Agriculture, Fisheries and Forests in Koronivia, Nausori. By October, Dr Ram had been appointed to the Head of Department of Fisheries, marking a rapid advance up FNU's academic ranks—a true testament to his expertise and

performance. As Professor Iji says, 'Ravinesh has really brought some fresh air into that department, which is why we just appointed him Head of Department.'

During his interview, Dr Ram was excited to talk about his current and upcoming research projects. He had secured seed funding from FNU and was commencing research into the implications of COVID-19 on the fisheries supply chain between Labasa and Suva. The impact of border closures—both international and internal—and the economic downturn on the fisheries industry had been significant. Labasa is renowned for high-quality fish, but the constraints in the value chain in 2020 highlighted significant issues in fish storage and processing in Labasa. He was also hoping to secure additional ACIAR funding for research into the impact of the pandemic, and to provide recommendations to help Fiji diversify away from its dependence on the tourism sector by increasing the value of the fisheries and agriculture sectors.

It is clear that Professor Iji sees Dr Ram playing an important role in his ambitions for the development of the College of Agriculture, Fisheries and Forestry. While hoping to expand the academic staff under Dr Ram's leadership, he has also asked Dr Ram to lead negotiations with the Ministry of Fisheries to strengthen their relationship, and explore the possibility of taking over under-utilised fisheries facilities so they can expand the capacity of FNU. Professor Iji also described the key role Dr Ram is playing in the new ACIAR Pacific Scholarships, supervising one of the new research students through that scheme. Professor Iji adds, 'I'm happy to say it is like he has been here for a much longer period [than only 3 months] ... he is effective in what he's done so far.'

Dr Ram's close links with Professor Southgate and with ACIAR are clearly important to him. He says, 'I want to be part of ACIAR.' He is an active member of the alumni network and stays connected with the ACIAR office in Suva. He is always happy to talk to scientists interested in learning about ACIAR or his experiences in Australia. Dr Ram is also clearly an effective networker, with many stories about connecting with researchers in many different places and diverse fields, drawing on his fascination for sea cucumbers. His inquiring mind, research expertise and extensive networks, suggest he will continue to make significant contributions to FNU and to the fisheries field in Fiji and more widely, well into the future.

Case studies (continued)

9.5 Case study E:

Nascimento Nhantumbo (Mozambique)

PhD, University of Queensland, 2015



► Dr Nhantumbo collecting soil samples in the 7 de Abril irrigation system in Vanduzi. The irrigation scheme is being intervened through the Farmer-led Small-scale Irrigation in Mozambique (FASIMO) project, an ACIAR/IRDC-funded project co-implemented in Manica by the Faculty of Agriculture of ISPM(DivAG-ISPM), the National Irrigation Institute (INIR) and the Faculty of Agronomy and Forestry Engineering (FAEF) of Eduardo Mondlane University.

Dr Nascimento Nhantumbo grew up in rural Mozambique. His childhood was disrupted by the horrors of the Mozambican civil war, which saw Manjacaze, his village, invaded several times. Some friends became child soldiers, while others had their parents killed.

When civil war intensified in Gaza Province in the late 1980s, his mother took his 2 younger siblings to Maputo. As the dangers grew, Dr Nhantumbo and his brother followed, leaving only their father in their Manjacaze home. Dr Nhantumbo and his siblings grew accustomed to laying out all their school results on the table for their father to review when he came to visit them in Maputo. Expectations were high, with his parents saying, 'Make sure that you learn, and you become something.'

Dr Nhantumbo's parents worked as a doctor and a nurse. As a child, he loved spending time with his father at the Manjacaze Rural Hospital and dreamt of following in his footsteps. He was twice unsuccessful at passing the medical school entry exams, but lining up to enrol for the exams a third time, a friend talked him into changing his application to agronomy, saying, 'You're good at maths, you're good at chemistry, just come!' His parents were surprised to learn about this new path, but Dr Nhantumbo had found a new way to combine his passion for working with people with his love of rural Mozambique.

Dr Nhantumbo's first job was as a maize breeder at the Mozambique Agricultural Research Institute (IAM), which he describes as being like Australia's CSIRO. Then, learning about the creation of Mozambique's new polytechnic institutes, he took up a teaching assistantship at the new Instituto Superior Politécnico do Manica, in Chimoio, in central Mozambique. Being part of a new institution—the first tertiary-level technical and vocational education institution in Mozambique—offered many opportunities for teaching and agricultural development work, and also the potential for further study and research.

In 2008, Dr Nhantumbo secured a scholarship from the Netherlands Fellowship Programme (NFP) to undertake a master degree at Wageningen University in the Netherlands. Shortly after returning in 2010, he did a favour for a colleague, helping with translation for a project-launching workshop in Chimoio, Manica. It was an ACIAR project, titled *Sustainable intensification of maize-legume cropping systems for food security in eastern and southern Africa* (SIMLESA) and, subsequently, Dr Nhantumbo joined the project as an agronomist

supporting field trials. Dr Daniel Rodriguez, Head of the Farming System Research group at the Queensland Alliance for Agriculture and Food Innovation Institute from the University of Queensland (UQ), was the project leader and, as a fellow Wageningen alumnus, welcomed the experience in conservation agriculture that Dr Nhantumbo brought to the team. Dr Rodriguez encouraged him to apply for a John Allwright Fellowship (JAF) so he could complete his PhD at UQ. Like many alumni, this personal connection with the ACIAR network was instrumental in helping him find a pathway to postgraduate research in Australia. In fact, it helped him decide to go to Australia instead of pursuing a simultaneous opportunity to study in the USA.

Dr Nhantumbo's studies in Australia lasted 4 years, and he was joined by his wife and children for a short time, while his wife undertook English language training at UQ in preparation for her own PhD studies. He returned to Mozambique each year during the cropping season for field trials, which also meant he could stay connected with his family and his home. Nonetheless, Dr Nhantumbo remembers feeling exhausted and homesick by the end of his PhD. The pressures and stresses of doctoral studies were significant, and he remembers his supervisor, Dr Miranda Mortlock, encouraging him to find his 'work-life balance'. He had good support from UQ and always felt able to ask for advice. He also talks fondly of the other SIMLESA PhD students, especially the Ethiopians with whom he worked closely in Gatton, who were an important source of peer support.

Returning home in 2015, Dr Nhantumbo became a Lecturer in the Faculty of Agriculture at the Instituto Superior Politécnico de Manica (DivAG-ISPM) and ISPM Coordinator of the master program in agro-systems management, for which he also helped develop the curriculum. He is also Head of the Institutional Quality Assurance Board and is involved in an ACIAR/IRDC-funded project under the Cultivate Africa's Future 2 program, titled *User-Driven Approaches to make Government and Farmer-led Smallholder Irrigation in Mozambique more Productive*. The project aims to understand how agricultural systems contribute to household food security and income in Mozambique, with Dr Nascimento lending his modelling-assisted expertise to explore the interconnections between farm design and management, resource use and allocation strategies—water, fertiliser, and land with household incomes and livelihoods. He is an enthusiastic advocate of using modelling techniques in agricultural research as a powerful tool to make experiments more effective and faster.

Dr Nhantumbo and his brother (also an agronomist, in the private sector) have an agricultural advisory company, and also their own farms in Vanduzi and Sussundenga. He explains, 'We needed a place where we could try to put all our knowledge into practice ourselves.' Dr Nhantumbo's farm produces nuts, grains and is expanding into goat rearing. To help strengthen its productivity, he has tapped into his networks in Australia to access agricultural expertise and inputs, and his produce is sold to both the Mozambican and international markets.

Reflecting on the impact of the COVID-19 pandemic, in 2020 Dr Nhantumbo says it has been an opportunity for Mozambican farmers. The markets for products like grain, meat and potatoes have been dominated by South Africa in recent years. But with border closures in April 2020 coinciding with the harvest in Mozambique, Dr Nhantumbo says, 'For the first time in years, farmers started making money.' He hopes the country can capitalise on the COVID-19 imposed restrictions to strengthen the agricultural sector through the promotion of stronger and more self-sufficient agricultural production and supply systems in the near future. Doing so would be critical in strengthening local food systems and the agribusiness environment for the good of smallholders and the national agroindustry.

Unsurprisingly, the pandemic also had many negative impacts, creating real challenges for agricultural research in Mozambique. Travel restrictions meant field visits and extension visits were not possible and this has delayed projects, although the use of ICT has helped. It has also constrained some aspects of international collaboration, although the longstanding challenges associated with poor access to research resources (including funding and academic journals) are still the most significant obstacles.

To stay in touch with current work in his field, Dr Nhantumbo relies on his network in Australia and around the world to access journals, but it is limited and a constant challenge. 'Having the people who are doing research, able to read and have access to up-to-date knowledge in their subject areas, it's really fundamental, because most of the time, you are in one corner of the world fighting over something, trying to understand the phenomenon that has already been studied on the other side of the world ... Therefore, having timely access to information is really critical. It can be a quite limiting thing, this access to information.'

Dr Nhantumbo is now becoming involved in food security and nutrition issues, with 43% of children younger than 5 with malnutrition in Mozambique. He and his colleagues are now examining how to design climate resilient and 'nutrition-smart' agricultural systems which work in the field. They are also working to support and encourage more young people to enter the agricultural sector, with youth farming clubs and increased networking between his Institute, and the public and private extension systems.

Working with agricultural extension and local organisations enables Dr Nhantumbo to have the close connections with rural people that have always been so important to him. He says, 'Being able to generate pragmatic and timely information to feed to farmers is my best satisfaction at this moment. And being based in Manica, I am really lucky because I haven't lost that connection [with farming], and I have been able to attract funding for my research.' Strong ongoing links with ACIAR and other institutions in Australia are continuing to contribute to Dr Nhantumbo's work to improve food security, and the design and management of agricultural systems in Mozambique.

Case studies (continued)

9.6 Case study F:

Isabel Soares Pereira (Timor-Leste)

Master of Agricultural Science (Genetics and Plant Breeding), University of Western Australia, 2015



► Ms Pereira in the University of Western Australia Glass House, inspecting bean plants as part of her Master's research. Photo: Mr Akhara Ouk.

From on-farm demonstrator to climate change researcher, sandalwood nursery operator and political adviser, Ms Isabel Soares Pereira is following a diverse and exciting career pathway.

Coming from a big family, it was unlikely she would go to university at all, but she worked to cover the initial costs so she could enrol in tertiary study. After graduating from the National University in Timor-Leste, she worked for the ACIAR *Seeds of Life* project as an on-farm demonstrator for the field trials in Baucau, before moving into the climate research component back in Dili.

Dr Harry Nesbit, the *Seeds of Life* Project Director, told her about the John Allwright Fellowship (JAF) and encouraged her to apply. Studying abroad was 'a dream', says Ms Pereira. The project provided English language training, including a short period of training in Perth in 2009. This was her first opportunity to travel outside Timor-Leste, and gave her a glimpse of the University of Western Australia (UWA) and its campus facilities. Thanks to their ACIAR experience and strong English language skills, Ms Pereira and a colleague both secured a JAF in 2012, and she moved to Perth to complete her master degree at UWA.

The first year was challenging and stressful for Ms Pereira. The academic program was demanding, she was homesick, and she missed her family, particularly her husband and children who were still in Dili. But she had opportunities to make friends from all over the world and build a diverse network which she says, 'has made a positive impact on my life'. She remembers the good support from UWA, both academic and personal, and the support from her peers and friends. Ultimately, Ms Pereira says that the sacrifices were worth it.

Ms Pereira says that her experience as a JAF scholar in Australia built her confidence and ability to speak up. 'I learned how people break the boundaries between men and women ... at home, it is difficult as a woman to raise your opinions.' She remembers her experiences with families in Australia, especially her time living with one of her colleagues, Dr Debra S Judge, Associate Professor at the School of Human Sciences (APHB) at UWA. This shifted her thinking and helped her reflect on the traditional ways of Timorese life, especially the role of girls and women.

Bringing her changed views on the role of women in the home and the workplace back to Timor-Leste was challenging at times. Not all her colleagues adapted easily to her preference for a more collaborative team-based approach, and at home, it was a change when Ms Pereira invited her children to express their opinions. But she feels that, gradually, things are changing at both home and work.

Ms Pereira's professors and teachers challenged her and shaped her thinking, helping her 'think outside the box' and find new ways to understand agriculture. She now understands agriculture is more than planting the seeds, but also about management and planning. She says that her mind has been opened up through her JAF, both in the classroom and in the field.

Ms Pereira returned to Dili in late 2015, as the *Seeds of Life* project was drawing to an end. She re-joined the team for the final few months of implementation and was involved in the major food security conference which marked the end of the project. She subsequently joined the *Global Climate Change Alliance* project, funded by the European Union and implemented by GiZ¹⁴, where she became a National Senior Adviser. Her work focused on agroforestry and watershed management, drawing on her JAF research on the selection of drought-tolerant species and her background as a climate researcher. Ms Pereira represented the project on technical panels at 2 international meetings: at the UNFCCC¹⁵ Conference of Parties in Bonn and another in Rimini, Italy.

After the project ended, Ms Pereira contributed to the development of a follow-on project in Timor-Leste. After assisting with the inception phase, she moved to the UN Food and Agriculture Organization (FAO) to support a major project with the Ministry of Agriculture and Fisheries. The project developed monitoring and evaluation systems within the Ministry, including a management information system, to support national agriculture policy and planning.

Ms Pereira also established her own nursery business, producing sandalwood and rosewood seedlings, and grafting high value fruit trees to support more domestic production of fruit and timber.

Ms Pereira's career underwent a significant development in 2020, following the change of government in Timor-Leste. She became an Adviser to the Minister for Education, Youth and Sports, with a particular focus on technical and vocational education and training. Bringing her agriculture background to this role supports the emphasis of technical schools in Timor-Leste on agriculture, fisheries and forestry—sectors which employ large numbers of Timorese. Coincidentally, the Minister, Armindo Maia, has himself been sponsored with an Australian Government scholarship to complete postgraduate studies in Australia—in his case, a PhD at the Australian National University.

Asked about her most important career achievement, Ms Pereira talks about her nursery business in Manleuana (Dili Municipality) and supporting community tree nurseries in Venilale (Baucau Municipality), Aileu Municipality and Natarbora (Manufahi Municipality). She is working to establish a sustainable operation which employs previously unemployed young people, saying 'I provide them the opportunity to work, to have an income and make money on their own.' For her, changing people's lives in this way is her most important work.

Ms Pereira retains her connection with ACIAR and is active in the alumni network. This gave her the opportunity to join the ACIAR leadership training program in Samoa in 2019. As the only woman in the Minister's office, Ms Pereira says this additional training has been extremely valuable. She was also awarded a 2020 ACIAR Meryl Williams Fellowship and is hopeful this will enable her to continue developing her professional capacities and leadership skills.

Ms Pereira calls her JAF 'a diamond opportunity' and, with deep feeling, says, 'JAF totally changed my life ... from a girl who worked in rural areas as an on-farm researcher to a national senior adviser and adviser to the Minister.' In this newest role, right at the heart of the Timorese government, she hopes to continue to contribute to her country's development at a national level.

14 Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH

15 United Nations Framework Convention on Climate Change

Case studies (continued)

9.7 Case study G:

Somvang Phimmavong (Lao PDR)

PhD, University of Melbourne, 2012



► Dr Phimmavong facilitating a 2019 Collaborative Leadership for Development workshop to senior personnel of the Prime Minister's Administration Office and 17 Provincial Administration Offices in Vientiane. Photo: Dr Khamtan Phonetip.

Dr Somvang Phimmavong was born in northern Laos and grew up in Vientiane. He graduated with an initial degree in forestry and joined the faculty at the National University of Laos in 2000. Following an exchange program at the National University of Singapore, he won a scholarship to do his master degree in Dresden, Germany. After returning to Laos, he became involved in an ACIAR project in collaboration with the Ministry of Agriculture and Forestry, which was investigating ways to create added value to plantation timber.

Through this work, Dr Phimmavong met Dr Russell Haines, then the ACIAR Forestry Research Program Manager. Dr Russell introduced Dr Phimmavong to Professor Barbara Ozarska at the University of Melbourne, who helped him with his John Allwright Fellowship (JAF) application. Securing a JAF was a significant goal, reflecting his view that 'we have to be open, to learn new things and be flexible, trying to create a network ... and have to be passionate and learn as much as possible'.

Dr Phimmavong moved to Melbourne to complete his PhD at the University of Melbourne. He already had experience living and studying abroad in Singapore and Dresden, and this helped him adjust to life in Australia. He was accompanied by his wife and young daughter, who had the opportunity to go to school and develop English language skills, which Dr Phimmavong says are now much better than his. The high cost of living in Melbourne was a continual challenge for the family, especially in securing accommodation, which meant they had to move frequently before finding somewhere to settle.

Dr Phimmavong was inspired by one of his supervisors, Emeritus Professor Ian Stewart Ferguson, to focus his PhD research on the development of plantation development policies. It was linked to the expansion of industrial scale plantations in Laos, and developed an integrated macro-micro economic modelling framework to assess the impacts of plantation development policies on the Lao economy. Dr Phimmavong initially worked with professors in the Forestry Faculty, but with his project addressing a very challenging area of economic modelling, he soon realised he needed additional supervision and support from the Economics Faculty. In combining forestry, economics, statistics, mathematics and computer programming, it was clear that he had chosen an ambitious topic for his doctorate.

Now an active and in-demand researcher, Dr Phimmavong is involved in 3 current ACIAR projects, among many other things. One of these is continuing the work from his original 2007 project to support the Lao wood industry. Another current project involves collaboration with his former supervisor, Professor Rod Keenan, assessing the economic and policy impact of timber plantation development in Laos. That project builds directly on Dr Phimmavong's PhD research and, despite being a small project, has led to a record high number of publications. Most recently, he has secured a small ACIAR research grant through the ACIAR Alumni Research Support Facility. He plans to investigate the impact of the COVID-19 pandemic on the Lao coffee industry—on the value chain, the coffee producers, and on the provincial economies. He is concerned that, overall, the Lao economy is truly suffering.

The COVID-19 pandemic—specifically the border closures and travel restrictions—has put increased pressure on Dr Phimmavong and other scientists to take up additional work on behalf of international collaborators who cannot travel to Laos as planned. While this has been a heavy burden, he also recognises it as an opportunity to increasingly take the lead in research, reducing the reliance on international scientists within research projects.

Dr Phimmavong talks of his younger colleagues in a manner that could equally reflect his own experience as a younger researcher, saying, 'When we get research work from international organisations, we can build the research capacity of our teachers. For example, all these young fellows are the product of the projects ... they become good teachers and have the ability to apply to study overseas.' His colleague in the Forestry Faculty, Dr Phonetip, is effusive about Dr Phimmavong's strengths,



► Dr Phimmavong and his research team visiting a unique coffee plantation intercropping Yang bong tree (*Persea Kurzii*) in Kongtayun Village, Thatang District, Sekong Province, located in the Bolaven Plateau in southern Laos on 26 June 2018.

The purpose was to assess the investment and rate of returns of bong monoculture and bong intercropping with coffee of villages at Ban Kogtayoune, Thateng District, Xekong Province under the ACIAR project. The other people in the photo are: first from the right, Mr Somphet Olasin, Governor of Thateng District; first from the left, Mr Vongvilay VongkhamSao, Head of Forest Science Research Centre, Ministry of Agriculture and Forestry; and second from the left, Professor Tek Maraseni, University of Southern Queensland.

saying, 'He is very good at providing technical and other advice to other people ... a lot of people love him ... and the leadership he demonstrates.' Dr Phonetip goes on to describe Dr Phimmavong as having 'an open mind ... [he] opens the gate for other people, a new generation like me'.

Dr Phimmavong has had many professional opportunities since gaining his PhD in 2012, including lucrative job offers from international organisations. He attributes this to the high status of his qualification from the University of Melbourne. However, he has chosen to remain at the National University of Laos so that his research and teaching can continue to be available for Lao society, while also undertaking additional short-term consultancies from government and international organisation clients on forestry, social, environmental, and economic issues.

Dr Phimmavong is motivated to do research which influences policy, such as the laws and official directives which govern forestry in Laos. He hopes that policy change informed by his research will improve policies for forest plantations to balance smallholder, industry and environmental needs in Laos. It is his view that the Centre's respected status and links with the Government of Laos help him and his research collaborators have some influence.

Reflecting on his time as a John Allright Fellow, Dr Phimmavong has vivid memories of the support he received from the University of Melbourne; the 14-hour days spent at his computer; the learnings that enable his papers to be published in the top journals in his field; and his time spent observing the leadership and management approaches of his professors. He describes Professor Ozarska's support as being 'like mother and son', and also recalls feeling so well-supported by his supervisors that he raised his level of ambition for his thesis, despite the complexity of his research.

Nowadays, Dr Phimmavong is applying those lessons in increasingly senior positions. Following his promotion to Deputy Head of the Forest Economics and Wood Technology Department, he was promoted again in 2019 into a new role as Head of Department of Forest Community and Rural Development Department in the Faculty of Forestry. He has also been a successful applicant for research funding for his faculty, securing millions of dollars in research grants since his JAF. This is essential in the context of very limited public funding for the university.

For Dr Phimmavong, vibrant international networks and close relationships with many colleagues in Australia are at the core of his ongoing success as a senior forestry researcher in Laos. 'Building networks is the most important thing. Because after the scholarship, we have to come back to Laos and work. And if we don't have a network, we have nothing.'

Case studies (continued)

9.8 Case study H:

Thi Hang Nga Le (Vietnam)

Master of Applied Anthropology and Participatory Development, Australian National University, 2017



► Nga with farmer researcher Mr Song and his children, who are members of the Dzao ethnic group. They are in Phien Sang village in Moc Chau District, Vietnam, and are looking at the photograph Mr Song had taken of his farm and his village to tell his life story. Photo: Timothy David London.

Since her first involvement in ACIAR research as a translator, Ms Le Thi Hang Nga (Nga) has become a successful independent researcher with clients around the world, embodying the potential that ACIAR capacity building can help realise.

Growing up with her sisters near Hanoi, Nga was the first female member of her family to attend university. In her words, 'it's kind of a big deal'. She is also sure that she will not be the last. She says she was driven to do well in her education to prove that being a girl is 'not too bad'. After first becoming an English teacher, Nga was keen to get plenty of life experience. She worked for Oxfam and also taught Vietnamese to Australian volunteers in Vietnam, where one of her students had a connection with ACIAR. The student told Nga about an opportunity to work for an ACIAR project as a project assistant and translator. The project was working to help farmers in the north-west highlands of Vietnam to combat soil erosion, and joining the team opened up many opportunities for Nga.

During her time with ACIAR, Nga met a Vietnamese scientist who had come back to Vietnam for data collection as part of his studies on a John Allwright Fellowship (JAF). This was her first introduction to the JAF program and over several years, as her confidence grew, she decided to aim for an international scholarship opportunity of her own.

Her ACIAR project leader, Dr Oleg Nicetic, recalls her instincts as being 'like a detective', meaning that even as a translator, she had natural capacity for anthropological work.¹⁶ Seeing her potential, he encouraged her ambitions and supported her efforts to win a scholarship. Nga applied for an Australia Award first, through the Australian aid program, but was unsuccessful. She tried again the following year, applying for both Australia Awards and the JAF program, but again was not selected. Somewhat disheartened, Nga broadened her applications further and in her third year of applying, had astounding results: she was awarded a New Zealand scholarship, a Fulbright scholarship and a JAF scholarship.

Ultimately, Nga decided that studying in Australia, in her field of social science and anthropology, would best align with her interests, and the interests of Vietnam and the Asia-Pacific region. Knowing her well after years of working together, Dr Nicetic helped Nga choose the best course for her, to match her skills and ambitions. Nga says, 'The JAF is so much better aligned with my career

¹⁶ This case study is awaiting clearance by Dr Nicetic.

opportunity and aspiration, and once I landed in Australia, I knew I had made the right decision.'

Nga completed a Master of Applied Anthropology and Participatory Development at the Australian National University (ANU), including an advanced pathway with a significant thesis component. She says that this program was the perfect combination of theory and practice, and her thesis enabled her to focus on the experiences of ethnic minority farmers with usury debt in the northern highlands of Vietnam. Her fieldwork was especially memorable—pregnant with her first child, Nga spent several weeks in a remote village undertaking data collection while battling morning sickness.

Studying social science, a program with a heavy reading load, was challenging. Nga remembers her first semester as especially difficult as she did not come to the program with an academic background in social science. She describes this as 'feeling like there was a cloud hanging over my head'. Support from the ANU Academic Skills and Learning Centre was instrumental. So too were her fellow students, and she formed a close and important network with a group of about 70 graduates who called themselves the 'social science nerds'. To this day, they still share journal articles, job opportunities, and discuss topics in anthropology and development.

Graduating from ANU, Nga went back to Vietnam and her son was born. After some time as a full-time parent, she established her consultancy business in mid-2018 with her husband, a former ACIAR Research Program Manager. She undertakes social science research for ACIAR and other organisations like the International Livestock Research Institute and CSIRO. Some of her recent work includes research to understand challenges in linking farmers with markets, and to identify barriers to Antimicrobial Stewardship in pig production. Returning to work again with Dr Nicetic, Nga completed a study which looked at Hmong culture and customs, and the way this influenced their decisions about finance and investment.

Dr Nicetic found her analysis brought understanding and insights that he had not had before. He also remembers that the change in Nga after her time in Australia, saying, 'You could see the clear difference [in her] after she completed a really good course at ANU.'

Nowadays, Nga welcomes the growing interest in the social aspects which influence agricultural development. She says, 'We need to understand people's way of living and their aspirations, whether they want to make more money, or they have other values in life that they prioritise. And what are the cultural barriers and livelihood obstacles that prevent them from adopting [new technology]?'

She observes that conventional approaches to agricultural development have often been ineffective in their focus on teaching farmers to practice differently or use new methods or technologies. Instead, she advocates for building a better understanding of farmer practices, learning from them, and working together to develop improved ways of farming which suit farmers. As research institutions including ACIAR increasingly add social science

components into their research projects, Nga is confident they will be more successful and effective, and she hopes social science will become even more integrated in future projects.

The gender aspects of agriculture are also essential to understand, in Nga's experience. She describes being a junior researcher, sitting with women farmers in their kitchens while the male farmers and researchers had the official discussions. In this instance, Nga gathered significant insights from the women which helped the project change direction, so its output was more suitable for farmers to adopt. She says of the women, 'Those quiet voices are ... the most important and significant contribution.'

Her own experience as a female researcher, often the only woman on a project team, has also highlighted the significance of gender. She describes how important it is to have a strong voice and good qualifications, so she is respected in a male-dominated field. Her Australian postgraduate degree from a prestigious university, earned through her JAF, transformed the way she is perceived by colleagues and collaborators, and helps her have that strong voice.

At the time of writing, the COVID-19 pandemic has had a tremendous impact on Nga's consultancy business. Work on a range of projects in Myanmar and Laos has been postponed or cancelled due to travel restrictions. This has forced her to become more flexible, and to share more with Vietnamese colleagues and organisations as a way to create more local consultancy opportunities. She sees some light at the end of the tunnel and hopes that 2021 will be more positive for her small, relatively young business. She also sees that the 'new normal' developed in 2020 might mean there is less need for overseas researchers and project managers to travel, and more involvement from local project personnel, as people use digital collaboration tools more effectively.

Still closely connected with Nga, Dr Nicetic reflects on how her JAF studies at ANU really enhanced her natural abilities and instincts. With that, and her experience and support working on ACIAR research projects, he now describes Nga as a rarity in Vietnam: a truly transdisciplinary researcher. In his view, her consultancy business fills a unique niche which is of enormous value for ACIAR and for other organisations undertaking research in Vietnam.

And in her own words, Nga says about her JAF, 'I've been lucky to be selected for this scholarship, it has changed my life significantly.'

Case studies (continued)

9.9 Case study I:

Dr Ghani Akbar (Pakistan)

PhD, University of Southern Queensland, 2012



► Dr Ghani undertaking irrigation application and soil moisture monitoring, assisted by Engr Shahi Salam. Photo: Ali Muhammad.

Sitting in his office at the National Agricultural Research Centre (NARC) in Islamabad, Dr Ghani Akbar described his long journey to finally board an aeroplane to Australia to complete his PhD. It was the culmination of 9 years of effort; a long-held dream realised.

Born and raised in Dir Lower, in northern Pakistan, Dr Ghani chose to specialise in engineering during his secondary schooling. When enrolling in the University of Engineering and Technology in Peshawar, he decided to focus on agricultural engineering so he could remain close to his hometown. But, as it turned out, his career in agricultural research would take him further from home than he could have imagined—all the way to southern Queensland.

Academically, Dr Ghani excelled. He completed his master degree, graduating first in his class and winning a gold medal in his bachelor degree. Through his university, he was given the opportunity to do a PhD in the United Kingdom on a scholarship, but it fell through at the last minute. Soon after, another opportunity arose, through Pakistan's Higher Education Commission. Dr Ghani was the first ranked applicant, but again his scholarship did not proceed, with another candidate sent in his place. These disappointments left Dr Ghani feeling—in his words—'disheartened', but he retained his dream of doing a PhD abroad.

Dr Ghani's research career began when he joined the NARC, initially working in salinity management. After experience with a World Bank-funded project in central Pakistan, he joined an ACIAR project in northern Pakistan, titled *Permanent raised beds to improve productivity of water use and control salinity in Pakistan*¹⁷, followed by *Refinement and adoption of permanent raised bed technology for the irrigated maize-wheat cropping system in Pakistan*.¹⁸

It was while working on this project that Dr Ghani applied for a John Dillon Fellowship, but an ACIAR official in Canberra suggested he apply for a John Allwright Fellowship (JAF) instead. With this encouragement and for a third time, he was awarded a scholarship to study for a PhD abroad. And for a third time, it seemed he would not be able to take it up as his department was reluctant to release him. However, thanks to support from the ACIAR

¹⁷ ACIAR Project LWR/2002/034

¹⁸ ACIAR Project SMCN/2002/034

Research Program Manager, Christian Roth, he secured his release to go to the University of Southern Queensland.

Dr Ghani's doctoral research, which he completed in 2013, focused on strategies for improving the water productivity of permanent raised beds. This brought together irrigation management and land management, and was closely related to the ACIAR project on which he had been working. Permanent raised beds can deliver savings in water use as well as increased yields through better soil structure, less waterlogging and improved water infiltration to the centre of beds. They can also reduce the number of machinery passes, fuel costs and greenhouse gas emissions, and reduce the turnaround time between crops and crop lodging.

Thinking back to his time in Australia, Dr Ghani reflects on the experiences of living and studying in a new country. His first year brought many challenges. It was difficult to finalise his research topic—in a heavily researched field, he had to work hard to find his unique focus. He also missed his family more than he had expected, especially his wife and young children, and had to adjust to an unfamiliar way of life. As he says, 'The style is different, the plants are different, the people are different. So it becomes very challenging for someone to get up early in the morning [when] they see all the things [are] different. So it takes a little bit [of] time.' However, Dr Ghani speaks warmly of the support he received from the University of Southern Queensland and from ACIAR, which helped him to settle in. He also connected with the Pakistani community. And, once his family joined him after the first year, they were able to share his experience.

Since returning to Pakistan, Dr Ghani has been promoted to the next grade and has become the Program Leader of the Integrated Watershed Management Program at the Climate, Energy and Water Research Institute (CEWRI) within NARC. Leading one of 5 programs within CEWRI, Dr Ghani now manages a team of 20 professional and support staff, while also undertaking his own research and leadership work.

Dr Ghani feels that his confidence and self-belief was strengthened through his JAF experience. He articulates this as understanding himself as 'a person who can do something ... [who] has the abilities and who is not less than anyone else in the organisation'. He describes the significance of having a PhD from an international university, and of the high status that Australia's agriculture sector has. He feels that his qualification is highly regarded by his organisation, and that this has contributed to his career development. This is despite the challenges of the many obligations and responsibilities that come from working within a government institute, which can take him away from his research work.

The Director of CEWRI, Dr Bashir Ahmed, shares Dr Ghani's view that research qualifications from Australia and other developed countries are extremely valuable. He notes how international graduates return to Pakistan with not only research skills, but also leadership, management and problem-solving skills. Dr Bashir talks about how effectively Dr Ghani uses these skills in his current role,

saying, 'He is leading a program and he's leading a team ... effectively managing a team.' He also speaks about how Dr Ghani came back from Australia with a great capacity to interact with people in the community, as well as other researchers.

Dr Ghani reflects on how he had excelled academically but it was the practical experience in Australia that enabled him to actually undertake research, and develop and manage projects. Because the NARC is a research organisation, this has been essential in securing research opportunities for both himself and his program within CEWRI. And, as a result, he has worked on projects from many funding partners, including the International Center for Agricultural Research in the Dry Areas, APN Japan, USAID, and ACIAR. His current work is leading the water management component of a large Pakistan government-funded project to examine productivity enhancement of rice production. Dr Ghani also mentions that the John Allwright Returnee award he gained immediately after his PhD made it possible for him to readjust to research back in Pakistan, to kick off his work, and secure essential hardware and software.

Fortunately, at the time of writing, the COVID-19 pandemic and restrictions on international travel are not affecting Dr Ghani's research—mainly because he is focused on a nationally-funded project. The initial lockdown early in 2020 did constrain his work substantially, with the requirement to stay at home as well as the worries about health and safety for his family. But it was in place for only about a month, and he is confident that the response to COVID-19 has been well-managed in Pakistan, with life now largely back to normal.

Although Dr Ghani has worked on ACIAR projects more or less continuously since 2003, he is not currently involved in any ACIAR collaborations. But he retains an involvement in the ACIAR alumni network and appreciates knowing that ACIAR is interested in the ongoing experiences of alumni. He also remains close to his PhD supervisor, Greg Hamilton, and is still part of a network of other international alumni from his university.

Dr Bashir emphasises the importance of ongoing international links and collaborations like this for CEWRI, and noted that international scholarships like JAF are central to making them possible. He says, 'The most significant learning when people do study abroad [is that] they get this skill of collaborative research and the development of collaborative projects.' Furthermore, Dr Bashir talks about how—as he becomes more senior—Dr Ghani is contributing his expertise at the organisation level, not just within his own program.

Ultimately, Dr Ghani says that his greatest professional satisfaction comes from being able to really work on issues in-depth, and to focus on a question or a subject closely. Especially the topical subject of water scarcity and non-availability of irrigation water—a growing challenge and problem for Pakistan. Thus, the skills and knowledge he developed during his JAF are continuing to enable him to contribute to improving efficiency and increasing productivity in Pakistani agriculture.

Case studies (continued)

9.10 Case study J:

Dr Sonnthida Sambath (Cambodia)

PhD, University of Newcastle, 2016



► Dr Sambath training farmers in postharvest handling.

Dr Sonnthida Sambath grew up in rural Cambodia, moving to the city aged 16 with a university scholarship for a Bachelor of Agro-Industry at the Royal University of Agriculture.

Dr Sambath says this first scholarship 'gave me the wings to fly', seeding her dreams of travelling and studying abroad. After graduating, she became a research assistant in the agricultural engineering office at the Cambodian Agricultural Research and Development Institute (CARDI). She was the first woman to work in agricultural engineering, focusing on postharvest technology.

It was in this role that Dr Sambath first met Dr Suzie Newman, the component lead on postharvest handling of an ACIAR vegetables project, and Dr Les Baxter, then the ACIAR Horticulture Research Program Manager, who spotted her potential during her project work. After 2 attempts and with their encouragement, Dr Sambath successfully secured a John Allwright Fellowship (JAF), and in 2011, went to the University of Newcastle to do her PhD, following some English language training with ACIAR support.

Completing her doctorate was a challenging 5-year journey. Dr Sambath's research was linked to the ACIAR project on which she was working, titled *Improving Market Engagement, Postharvest Management and Productivity of the Cambodian and Lao PDR Vegetable Industries*.¹⁹ She investigated vegetable postharvest handling in tropical conditions, focusing on tomatoes and Asian leafy vegetables. Dr Sambath took an applied science approach, looking at the combination of technology and packaging which can extend vegetable shelf life. Much of her work was done with the NSW Department of Primary Industries (DPI), with principal supervisor Professor Ron Wills, and she worked between the University of Newcastle and the DPI labs.

Dr Sambath remembers that she had to become much stronger and more independent during her PhD. She had to work hard, especially in her first year, to get the support she needed within the laboratories and to use unfamiliar equipment. With 5 supervisors, Dr Sambath also had a complex set of relationships to navigate. She also had to get her driver licence, so she was not dependent on others to help her collect her samples. Eventually, she gained the confidence and independence necessary to manage all the logistics and relationships with farmers and colleagues,

¹⁹ ACIAR Project ASEM 2012/081

and reflects that 'a PhD is not just about the pure science, it is also about managing conflict ... politics ... and logistics'. Fortunately, the links with a current ACIAR project meant that she had access to additional resources for her research, which greatly assisted her to complete her own project. She also remembers the support she had from colleagues, saying, 'I am very lucky I have people skills, and I can ask people to help me, even those who are not directly involved in my project.'

Dr Sambath's NSW landlord and landlady of 5 years played a crucial role in supporting Dr Sambath in many ways—so much so, she calls them her 'Aussie family', and her parents and Aussie family have even visited each other in Cambodia and in Australia. Dr Sambath also knows she has changed a lot through her JAF. An open and flexible person, she chose not to limit herself to only mixing with the Cambodian community in Australia. She now calls herself 'two-headed', meaning she is now part-Asian and part-Western, always keen to learn about the world, food, cultures and places. She has travelled widely, even finishing her PhD thesis while visiting friends in New Zealand.

The Deputy Director of CARDI, Mr Lor Bunna, also an Australian alumnus, emphasises the importance of ACIAR support for CARDI, including through scholarships like JAF. Dr Sambath has been promoted to the position of Deputy Head of Agricultural Engineering, with more than 10 staff and contractors. Mr Bunna speaks highly of her and her contributions, saying, 'She is very important to CARDI.' He agrees with her self-assessment that she is very good at working with other people and organisations, and acknowledges the major role she plays in engaging with partners and stakeholders on behalf of CARDI in Cambodia and the region. Mr Bunna also highlights how important it is for CARDI to have a female in her position, given the major role women play in agriculture in Cambodia and the significance of gender issues.



► Dr Sambath sampling cucumbers as part of studies into postharvest vegetable handling.

Dr Sambath herself sees increasing numbers of women in her field, including at the management level.

Improving postharvest technology handling of fruit and vegetables is a high priority for the Royal Government of Cambodia, highlighted in the National Strategic Development Plan for both domestic and export markets. This means that Dr Sambath's field of expertise is also a high priority. She is now applying her agricultural engineering expertise to collaborate with other experts to deal with climate change-related issues, such as increased temperatures, by looking at technology like greenhouses and other innovations to protect crops. There is increased funding for research and extension work in this field, both nationally and internationally.

Dr Sambath describes herself as hard-working and disciplined. She contributes to CARDI and other organisations in many different ways. She helps facilitate collaborations and project development, drawing on her extensive network and her communication and relationship skills. She also supports many events, trains staff in postharvest work, and contributes to NGOs and other projects. Ultimately, though, she identifies her most significant achievement as her work on the ACIAR ASEM project.

At the time of writing, the COVID-19 pandemic, although not affecting Cambodia too much, has had a big impact on Dr Sambath and her life. There have been losses, personal and professional, and plans which have not been realised due to travel restrictions and border closures. Not the least of these was the cancellation of part of her Meryl Williams Fellowship: missing out on a work placement in Australia was a great disappointment. But Dr Sambath takes a philosophical perspective, saying, 'There is always something positive out of a struggle.' The cancellations and inability to travel have freed up time for her to write proposals for grants and line up new research collaborations, as well provide opportunities for personal development, time with family, and time for reflection.

Clearly a woman of vision and ambition, Dr Sambath navigates many different paths to achieve her aims. She keeps a close link to ACIAR, is an active alumnus, and maintains an extensive network of friends and colleagues among other alumni and the scientific community in Australia. Summarising her experience as a John Allwright Fellow and now a member of what she calls 'the ACIAR family', Dr Sambath says, 'From a person with a small world, I am now opened up ... ACIAR has been a good journey personally and professionally.'

Case studies (continued)

9.11 Case study K:

Jessie Abiuda Mitir (Papua New Guinea)

Master of Arts, Science Communication and Society, University of Melbourne, 2010



▶ Jessie in the field while establishing sandalwood trials on 26 June 2019.

Jessie Abiuda Mitir (née Waibauru) grew up in Lae, Papua New Guinea, where she completed her early education before finishing her secondary schooling at Passam National High School in East Sepik Province.

Originally interested in studying forestry, Jessie knew that this would mean enrolling at The University of Technology in Lae. However, looking for a chance to move away, she opted for a Diploma in Media Studies at the University of Papua New Guinea in Port Moresby instead, after which she completed a Bachelor of Arts in Journalism. She was the only third-year student who did a fourth and final year project in Print Journalism and Internet Publishing at that time. Jessie won the Journalism Student of the Year award when she graduated in 1998 and received a number of job opportunities as a result. But she took a different path, heading back into the forestry sector as an editor with the PNG Forest Authority's research arm, PNG Forest Research Institute (PNGFRI), where she worked for the next 16 years.

It was while working with the PNGFRI that Jessie first became involved in an ACIAR project. This experience catalysed her interest in bridging the information gap between research and communities: translating scientific knowledge into practical information that is useful for community members. She began looking for opportunities to do further study which would address this aspect of communication, but it was hard to find the right program. A program manager from PNGFRI was the first person who suggested she apply for a John Allwright Fellowship (JAF), and her involvement in the community engagement component in the ACIAR fuelwood project *Promoting diverse fuelwood production systems in Papua New Guinea*²⁰ made her eligible. ACIAR Program Manager Russell Haines encouraged Jessie to submit an application, and had the good fortune of delivering her the news that she had been accepted into the University of Melbourne, to do a Master of Arts, Science Communication and Society.

Jessie's husband and 4 young children went with her to Melbourne while she studied. Support from ACIAR and her employer made it possible for them to live comfortably there, but it was challenging managing family obligations without the extended family support they had at home in PNG. Jessie was encouraged to continue on to a PhD program, but says 'the fires of home were burning', so left the Melbourne cold to return to PNG.

²⁰ ACIAR FST/2006/088



▶ Jessie speaking at a local stakeholder consultation and awareness session on 20 December 2017. Photo: PNG Biomass.

The additional support that Jessie and her JAF scholars received—family stipends, book allowance, academic programs—was much appreciated, especially when she realised how many of her Australian fellow students did not have the same additional support. With that in mind, she joined a student volunteer group that raised money to support students in need with accommodation, books and food. Jessie says this was a way to do ‘a small something, give back a little bit and show my appreciation for the scholarship that I got’.

Returning to PNG in 2010, Jessie also returned to her work with forestry. When the community forestry projects she was working on came to an end, she decided to seek new opportunities which would enable her to continue working at the community level. She moved on to the National Agricultural Research Institute (NARI) in 2014 as a Senior Scientist looking at farmer learning. During her time there as a research assistant, she worked on another ACIAR project, titled *Improving opportunities for economic development for women smallholders in rural Papua New Guinea*²¹, but was ultimately still yearning for a role that connected her studies in communication with her passion for science and her interest in the political economy of decision-making in forestry.

Throughout her career, Jessie had been aware of the PNG Biomass Project, which had begun in 2011. Finally, in 2016, she had the opportunity to join them, and is now the Stakeholder Engagement Manager and part of the senior management team. It is a role that truly unites all her passions, requiring her to understand ‘how the political thinkers think, how the economists think ... how the ... communities think, and bringing it all together to find the common ground and common understanding’.

PNG Biomass employs several JAF alumni, including Jessie, meaning ACIAR is making a significant contribution to the organisation through these staff. The initiative has also been involved in some ACIAR research in PNG and Michael Henson, Project Director at PNG Biomass, hopes to revitalise collaboration with ACIAR in the future. With her strengths in communication and negotiation, it is possible Jessie will play a role in this.

The work of PNG Biomass aims to achieve commercial returns from forestry while also meeting the food security and nutrition needs of the community through intercropping and improved productivity. It requires integrating forestry and agricultural science with traditional knowledge and practices, as well as careful communication and engagement between communities, government and the private sector. Jessie says that her studies in Australia through her JAF have been instrumental in helping her to contribute to this—particularly as her work is often demanding and very varied.

Michael Henson says of Jessie, ‘She has one of the most difficult, if not the most difficult job in the organisation.’ Her role encompasses community affairs, land acquisitions, government affairs, the sandalwood program, community business development and sustainability. Mr Henson describes her as ‘the voice of the organisation’, from negotiating with landowners, to making presentations at national and international conferences. This often makes Jessie one of the few women with a voice in energy forums—and a powerful role model for PNG women. She has also managed a range of international compliance and certification requirements, such as the International Forest Stewardship Council, the Asian Development Bank and International Finance Corporation as financiers, and compliance with certification for the gold standard.

It is her current work that Jessie is most proud of. She played an important role in finalising a crucial agreement with landowners for the Biomass power plant, which had taken 4 years to resolve. This earned the respect of landowners and community leaders, and she developed a harmonious relationship with them, despite the challenges of being a woman in her role. She does worry that many women in the community were kept in the background during these negotiations, but is reassured that some younger women were able to be more vocal in order to achieve benefits for the whole community.

Reflecting on her professional career so far, Jessie talks about the great coaching and mentoring that she has received from her colleagues in PNG Biomass, which has really taken her further on her journey. She adds, ‘Where I am now is all because of the John Allwright Fellowship. I wouldn’t be here without it and I’m very proud.’ She hopes many other women will follow her to become John Allwright Fellows in the future.

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Case studies (continued)

9.12 Case study L:

Luis de Almeida (Timor-Leste)

Master of Science, University of Western Australia, 2012



► Mr de Almeida measuring the growth of young sandalwood, 3 months after it was planted, with a range of different tree forage legume hosts in South Coast Natarbora, Timor-Leste. Also in the picture is field researcher Mr Joanico Faria. Photo: Mr Rob Williams.

Luis de Almeida grew up in Manatutu District in Timor-Leste in a family of farmers and with parents who grew coffee. He was the only one of his 6 siblings to follow his father into agriculture, completing a Bachelor Degree in Agronomy at the National University of Timor-Leste (UNTL).

As a graduate agronomist, Mr de Almeida was recommended by an academic at UNTL for a job on a US-funded project examining green manures as cover crops for rural farmers in 2003. In this job, he assisted Mr Rob Williams with demonstration field trials, testing different legume crops on farmers' fields. Then, when the Australian-funded *Seeds of Life* project began in 2005, he joined Mr Williams on that team as well. Mr Williams says of Mr de Almeida, 'From the very beginning, he had natural leadership.'²²

Mr de Almeida was one of 20 young agronomists employed in *Seeds of Life*, along with Isabel Soares Pereira, who is the subject of Case Study F. He met many Australian scientists through his work on *Seeds of Life*, as well as alumni from ACIAR scholarships and fellowships, who told him about the opportunity to earn a John Allwright Fellowship (JAF). His time working on this project gave Mr de Almeida the opportunity to strengthen his English language skills and build his agricultural research experience, allowing him to become a strong candidate for a JAF.

Mr de Almeida won his JAF scholarship in 2010 and completed a Master of Science at the University of Western Australia (UWA), focusing on genetics and plant breeding. His research investigated common bean varieties for their cold tolerance, with the aim of identifying those most suitable to grow in south-west Western Australia. The research enabled him to develop skills which could be applied back in Timor-Leste. The experience was demanding, but rewarding. He remembers that 'I must push myself, working long hours at the glasshouse and attending the labs, washing the roots of the beans ... by myself'.

²² This case study is awaiting clearance from Mr Rob Williams.

Mr de Almeida and his wife Maria P de A Gonçalves—also a scientist, specialising in food and nutrition science—both completed postgraduate studies in Perth. When she won a scholarship to Australia the year after him, they made the difficult decision to leave their children with family in Timor-Leste, to allow them both to complete their postgraduate studies. Being separated from their very young children was stressful and worrying, but they trusted their families to look after them well, and were able to visit several times a year.

Returning to work on *Seeds of Life* after graduating from UWA, Mr de Almeida worked with the project until the end of its final phase, playing an increasingly important role. He is now the agronomist on the *Agricultural Innovation for Communities in Timor-Leste (AI-Com)* project, where—among many other things—he helps to guide and mentor colleagues and stakeholders, including at UNTL as a co-trainer with Mr Williams. After working with Mr de Almeida for nearly 15 years, Mr Williams describes him now as ‘my right-hand man’.

In Mr Williams’s view, Mr de Almeida has an important combination of skills and abilities, many of which were strengthened through his studies in Perth: ‘His natural ability in being a peacemaker ... and his understanding of science and why we do it, the logic of it ... he understands the processes and can explain them to others ... together with the broader information skills he has. There is hardly anyone else who could do what he does.’ Mr Williams also talks warmly about how significant Mr de Almeida’s work on AI-Com is, working in agricultural extension, agricultural economics as well as agronomy.

For Mr de Almeida, his work on AI-Com is his most important so far. He says it is a small project but will have a huge impact on Timor-Leste, which is still mostly made up of small-scale farmers. Farm productivity is declining, or not improving, despite the farmers’ expertise. The theory is that soil condition is poor and undermining agricultural productivity, so the project is exploring the introduction of biochar to improve crop yields. And while it could assist with most crops, he is most concerned about the ongoing issue of malnutrition. Because of this, he is most interested in crops that will improve nutrition—horticulture crops like beans rather than the more common crops such as corn, rice and other carbohydrate foods.

Mr de Almeida’s JAF was valuable in many ways. Not only did it give him a strong academic and technical education, but also the chance to experience living and working in Australia. For him, this was more varied than most other fellows, because he stayed an extra year in Australia while his wife completed her degree, working in a fruit juice factory. According to Mr Williams, this experience was essential, as it exposed Mr de Almeida to a range of experiences, including commercial lab work, quality control, mechanisation and other aspects of the industry. Mr Williams links this breadth of capabilities to an important paper Mr de Almeida published on aflatoxin in peanuts in Timor-Leste, which drew on his lab experience in Australia, as well as his academic training.

Mr de Almeida hopes to do a doctorate one day, perhaps focusing on sandalwood agroforestry which is a new area of interest and work for him. But, at the moment, he is committed to his work on AI-Com and to continue to build his research experience. At the time of writing, the COVID-19 pandemic has had a limited direct impact in Timor-Leste, with few confirmed cases and a relatively short period of restrictions on everyday life. However, constraints on international travel have meant that conferences and international visits have been cancelled or undertaken digitally. But the day-to-day work of AI-Com has been able to continue largely as planned and Mr de Almeida is confident that the project overall will be unaffected, with Timorese scientists and staff continuing to play a major role.

Like many other JAF alumni, Mr de Almeida reflects on how lucky he has been, and says that the JAF scholarship was a turning point for his life and career. ‘Since I returned from my JAF scholarship, I have played a role as a technical research coordinator ... been involved in designing research ... and other important agriculture issues for our country ... My career is improved since I studied through my JAF scholarship.’ He also continues to draw on his network of colleagues and experts in Australia throughout his work, which he developed through his JAF and his ongoing professional links with ACIAR through his project work.

Case studies (continued)

9.13 Case study N:

Md. Ariful Islam (Bangladesh)

PhD, Murdoch University, 2017



► Dr Arif measuring the canopy temperature of mustard using a digital infrared thermometer, at the Pulses Research Centre at Ishwardi, Pabna, Bangladesh. Photo: Md. Mominul Islam.

A passionate advocate for conservation agriculture, Dr Md. Ariful Islam is driven by a desire to improve farmer wellbeing and farm productivity across his birthplace, Bangladesh. It is from his home in northern Bangladesh that he shared his story of graduating from Bangladesh Agricultural University with his bachelor and master degrees before joining the Bangladesh Agricultural Research Institute (BARI) in 2007.

As a master degree student in 2005 and 2006, Dr Arif was already looking for a scholarship opportunity to complete his PhD overseas. He wrote to many professors and academics in his field of study, all over the world, asking for their advice and assistance. Professor Richard Bell at Murdoch University suggested several possibilities, including the John Allwright Fellowship (JAF) program. They also began working together on a crop and soil management project, titled *Addressing constraints to pulses in cereals-based cropping systems, with particular reference to poverty alleviation in north-western Bangladesh*²³ led by Professor Bell. Ultimately, with Professor Bell's support and encouragement, Dr Arif successfully applied for the JAF.

Dr Arif completed his doctoral research in conservation agriculture at Murdoch University in Perth, supervised by Professor Bell. His research investigated soil and crop performance in rice-based cropping systems in Bangladesh. He describes his JAF as 'amazing' and 'exciting', saying that he had worked hard but enjoyed the experience. He was joined by his wife and son for part of his time in Perth, after feeling homesick without them for the first years of his PhD. He recalls many good experiences, saying, 'There is no doubt that we enjoyed it a lot.' In addition, he appreciated the many rules and regulations which treat all people equally in Australia, as well as the excellent health and education system.

Memories of Dr Arif's time at Murdoch include his laboratory work, writing, exchanging knowledge with international scholars, and attending conferences in Australia and overseas. He also remembers facing some challenges with the high cost of living and studying in Australia, but adds that ACIAR made it easy for JAF scholars in this regard. He felt he was always able to draw on the support of his supervisor, who helped with his research, and with the difficulties arising from his travels back and forth between Perth and Bangladesh while doing his research.

Since completing his PhD, and returning to Bangladesh and to the BARI, Dr Arif has been involved in a number of international projects. He is currently working on a project which has developed a tool for sustainable management or conservation agriculture for intensive rice-based cropping practices in north-west Bangladesh, and involves collaborating with ACIAR, Murdoch University and the World Vegetable Centre. He is also working on another project with ACIAR and the World Vegetable Centre to explore improved cropping practices to facilitate mechanical mung bean harvesting, including the safe and effective use of crop desiccants in Bangladesh.

Dr Arif was promoted to the position of Senior Scientific Officer in 2020, moving from the Pulses Research Centre to the On-Farm Research Division. His qualification remains directly relevant to his work, and Dr Arif says, 'The learning from my JAF is being used to write better reports and do better research ... this is what I am doing now.' He has several colleagues in BARI with international PhD qualifications, from Australia and elsewhere, including another recently returned JAF alumnus. He says that the institution places a very high priority on staff achieving international scholarships and research awards as a means of building their capacity and improving their performance.

Now that he has a doctorate from a 'good country', Dr Arif says that he would like more recognition for his research skills and technical knowledge. He wants to undertake more advanced research, but the opportunities for this are limited in Bangladesh and it can be difficult to secure the resources he needs to achieve all his research aims. His dream is to secure a postdoctoral opportunity, which would allow him to strengthen his writing skills and produce more publications.

Fortunately, at the time of writing, the COVID-19 pandemic has not had a significant impact on Dr Arif's work. He was staying on station with the Pulses Research Centre during Bangladesh's 2-month lockdown and his fieldwork was not affected. In fact, he says, 'In this corona-time we have lots of time ... to write and do my own research', with the Institute holding fewer meetings and trainings which usually take up his time. This reduction in organisational demands has been quite enjoyable for Dr Arif and he appreciates the additional time for the work he is most passionate about.

Nowadays, Dr Arif's work focuses mainly on soil and crop management using conservation agriculture in rice-based systems. He explains that farmers face 3 main problems: saving land, saving money and saving labour. The aim of conservation agriculture is to address all 3 of these challenges, while increasing profitability and productivity. The principles of conservation agriculture guide farmers to rotate their crops around their central rice crop, and this means that Dr Arif has also conducted research into pulse and legume crops, such as lentils, mung beans and chickpeas.

When planning his research, Dr Arif says he always asks himself whether it responds to a need, and whether farmers will benefit as a result. It is important to start by identifying the problem, working with farmers—focusing on nutrient, crop and soil management—and to only proceed if he is confident that the research has the potential to improve farmer wellbeing and productivity in Bangladesh. Dr Arif also says that addressing site-specific problems in Bangladesh has great potential to be useful internationally. Soil degradation is not only occurring in Bangladesh but also around the world, so he hopes research findings which address this challenge may be useful for farmers in other countries, too.

Summarising his experiences, Dr Arif says, 'JAF changed my life ... in many aspects ... Before getting the JAF, I was only Ariful Islam, and now I am Dr Ariful Islam with a doctoral degree from an Australian institution. I am grateful to JAF and to ACIAR.'

10

Conclusions

The Tracer Study provides important insights into the experiences of JAF alumni before, during and after their studies in Australia. There is strong evidence about the career outcomes achieved by alumni following their Fellowship, and of securing a high-quality qualification from an Australian university. More than 61% of alumni attribute a promotion to their Australian qualification, with the case studies providing additional insights about benefits, including securing research grants, and contributing to changes and improvements in their organisation.

An international qualification from a high-status institution is often seen by alumni as instrumental in career development and in enabling them to make contributions to their organisation. Some alumni reported having a number of opportunities for international study and research through multiple programs and development partners in different countries. In these cases, a JAF can be a key factor.

Summarising her experience as a JAF alumni and now as a member of what she calls 'the ACIAR family', Dr Sonnthida Sambath says: 'From a person with a small world, I am now opened up ... ACIAR has been a good journey personally and professionally'.

(case study J)

There is evidence that a JAF experience changes alumni views or behaviours regarding gender equality, with 92% of alumni saying they now understand gender equality better. Several case studies provide strong examples of these changes.

At a personal level, there is strong evidence that a JAF has a positive impact. Alumni report increased confidence, a more open mind, an international perspective, and better English language, communication and collaboration skills. Case studies show that some alumni also experienced tangible benefits for their families who accompanied them to Australia.

'... the most significant learning when people do study abroad [is that] they get these skills of collaborative research and the development of collaborative projects,' says a senior official in Pakistan, reflecting on the importance to their institution of international scholarships to Australia and elsewhere.

(case study I)

For ACIAR, the investment in JAF scholars often starts well before they are awarded a scholarship. The involvement that ACIAR staff and research project leaders have with their project team is often long-term and in-depth. Several case studies provide insights into the way that ACIAR sometimes actively identifies, recruits, and supports people to develop towards a JAF. This helps applicants succeed while also laying the foundation for their strong allegiance to ACIAR in the long-term.

This study also raises some interesting questions about the potential impact of the COVID-19 pandemic. Although this time period is outside of the study scope, the pandemic has meant little or no opportunity for Australian staff and researchers to work in partner countries as they would usually do. This has limited the deep and extended face-to-face collaboration and relationship-building that often takes place. How long the pandemic will continue to impact international travel remains uncertain, along with the potential effects on the Fellowship program. Reduced international travel for collaborators has in some cases increased the opportunities for national researchers, including JAF alumni, to play a greater role in research projects. But the prolonged period of separation may impede collaboration, and make it harder to identify and support strong future JAF candidates. As the pandemic continues to impact travel, it will be increasingly important for ACIAR to monitor the potential effect on the quality and depth of scholarship selection processes.²⁴

Nevertheless, it is clear that the stated aim by ACIAR to build a network of agricultural researchers is being advanced through the JAF program. Nearly two-thirds (61%) of alumni maintain active links with ACIAR staff, even while only 26% are currently involved in an ACIAR project at the time of the survey. The study did not investigate the ACIAR alumni network specifically, but case studies show that at least some alumni view this network as valuable and are actively involved—regardless of their involvement in an ACIAR project. The ongoing work to strengthen the alumni network, which includes enhanced monitoring and evaluation work, should provide an opportunity to look more closely at this.

ACIAR aims to strengthen the agricultural innovation systems in partner countries, especially within the organisations of JAF scholars. The fact the study found the majority of alumni remain at their workplace for 5 or more years after completing their JAF is a key finding as it indicates organisations continue to benefit from the program in an ongoing capacity. Organisational case studies (which are anticipated as part of the wider ACIAR Capacity Building MELF) would be an opportunity to investigate this further.

It is positive to find that 85% of alumni indicate they are still actively involved in research up to 10 years after completing their JAF. This also suggests there is an ongoing benefit to agriculture in their home countries as a result of the significant investment in alumni research qualifications. Notably, too, almost all survey respondents were still located in their home countries.

Further benefits can be attributed to the fact that 71% of alumni say that their teaching and supervision of students and younger researchers is important. Case studies provide additional compelling examples of this, with several alumni describing how this is in fact their most important work and their greatest achievement. This indicates that there is a multiplier effect from the JAF program through the passing on of skills, knowledge and networks from alumni to their colleagues. There may be future opportunities for ACIAR to extend this aspect of the JAF program by supporting fellows and alumni to strengthen their teaching, mentoring and supervisory skills.

²⁴ At the time of writing, ACIAR had decided to suspend JAF selection processes for 2021. An existing cohort of fellows selected in 2019 and 2020 had not yet been able to commence their studies in Australia, and the barriers to travel are likely to continue throughout 2021.

Annex 1. ACIAR Capacity Building Program Logic

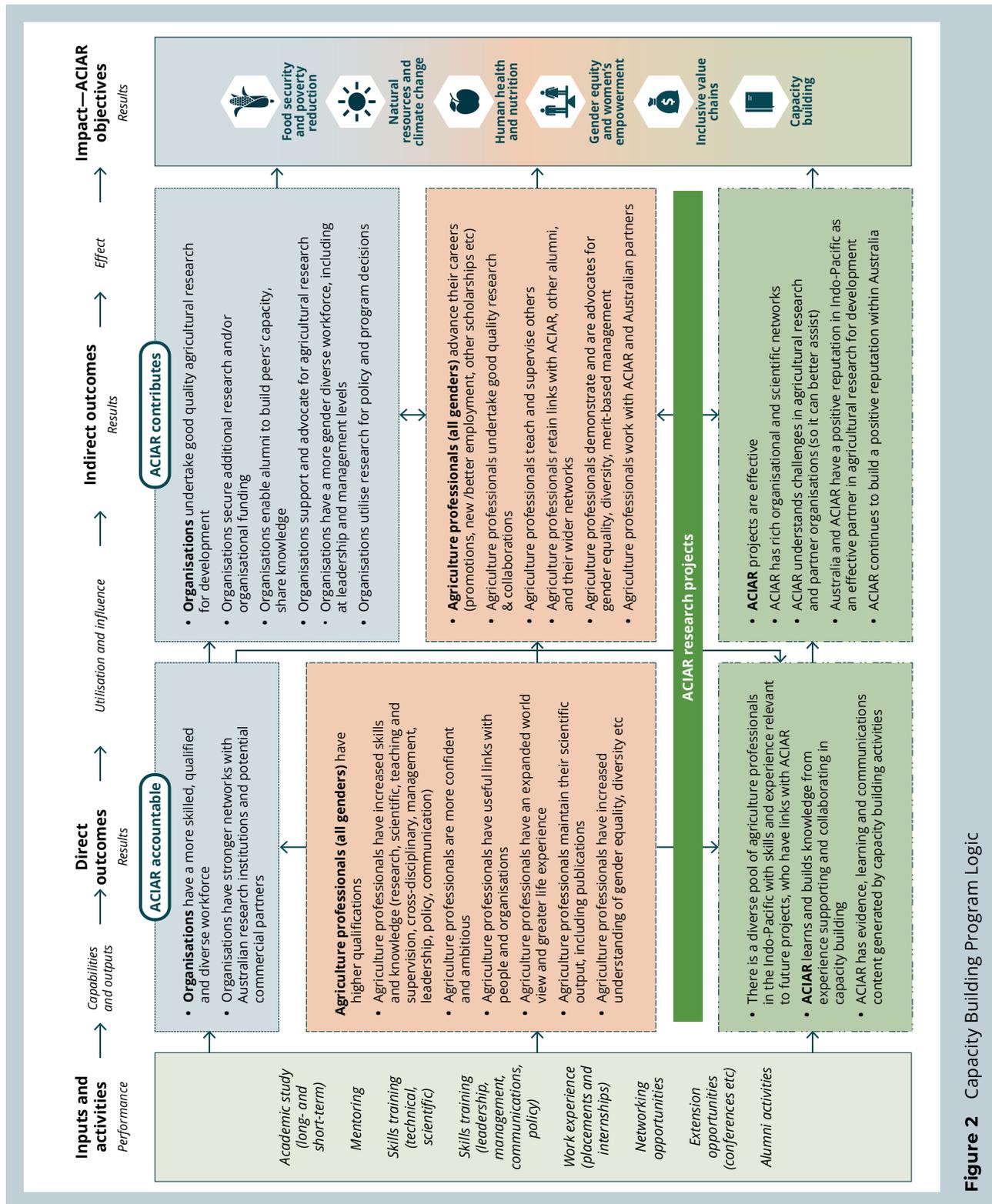


Figure 2 Capacity Building Program Logic

Annex 2. Study design

The research design used for this study took an explanatory mixed-methods approach. It was outcomes-based—it examined the extent to which the outcomes of the relevant component of the Capacity Building Program were achieved—but also had an open element, allowing for unintended outcomes to be captured and examined.

The inquiry matrix shows how the study design aligns with the relevant components of the Capacity Building Theory of Change. Data was collected sequentially, beginning with a survey, followed by a more in-depth qualitative study of case studies from a sample of scholars. The qualitative data was important, because the study sought to understand changes in a complex context, for which simple survey questions are generally insufficient. The study was also designed to explore the JAF program in some depth, so the qualitative data is the ‘meat’ on the statistical ‘bones’ of the survey.

Sample

The scope of the study is alumni who graduated between 2010 and 2019: the 10 years prior to the year the study was conducted. The parameters for this population sample were confirmed on the basis of the best available alumni details from existing information systems, and an assessment of the most meaningful timeframe for alumni to identify post-scholarship outcomes which can be reasonably identified as having a link with the JAF program.

Within these parameters, data from the DFAT OASIS scholarships database initially indicated that there is a total population of 286 alumni. Verification of this population identified a number of duplicates which, when addressed, resulted in a cleaned population of 272 alumni, including 87 women (32%) and 185 men (68%).

The study focused on those alumni who had successfully gained a qualification. Further cleaning of the sample to exclude those who did not complete and graduate with a qualification resulted in a sample of 268 alumni with pass or pending results, comprising 84 women (31.3%) and 184 men (68.7%).

Variables

Data about alumni were collected, analysed and reported in line with the following key variables, as specified in the Capacity Building MELF:

Key variable	
Gender	<ul style="list-style-type: none"> • Male • Female • Prefer to specify another way
Age	In whole years
Disability	<ul style="list-style-type: none"> • Yes • No
Level of qualification (obtained through JAF)	<ul style="list-style-type: none"> • Postgraduate Diploma • Master (Coursework) • Master (Research) • PhD
Institution type (i.e. category of employer)	<ul style="list-style-type: none"> • University of tertiary institution (i.e. institution can award formal qualifications) • Government ministry or department • Government research institution which cannot award formal qualifications • Private research institution which cannot award formal qualifications • NGO, development or other organisation not otherwise listed • Self-employed
Region	<ul style="list-style-type: none"> • Pacific • East Asia • South and West Asia • Africa
Discipline (of study during award, and of current work)	<ul style="list-style-type: none"> • Agribusiness • Broadacre crops • Fisheries • Forestry • Horticulture • Livestock • Social sciences • Soil and land management • Water and climate

Document review

The first stage entailed a comprehensive review of available JAF documentation. Documents included internal ACIAR administration documents relating to JAF (including, for example, application guidelines and application forms), as well as reports and associated documents from 2 relevant past studies: the 2004 Tracer Study²⁵ and the 2014 Scoping Study on the evaluation of formal and informal capacity building.²⁶

JAF alumni survey

The survey was conducted by the Wallis Group, working closely with the evaluation consultant. With the generally strong sense of connection alumni have with ACIAR, plus additional assistance from ACIAR country and regional offices to promote the survey, it was hoped that a high response rate would result from the 10-year cohort targeted. This would deliver a strong dataset for analysis.

The alumni contact list for the survey was prepared by consolidating data from OASIS (which reaches back to alumni who completed their JAF from 2008 onwards), with updated alumni data recently prepared by ACIAR's country and regional offices as part of their work to develop a global alumni database.

Survey data collection was multimodal, with respondents able to complete the survey online, or via a telephone interviewer (computer-assisted telephone interview, or CATI). To launch the survey, Wallis Group sent a well-designed Primary Approach Email (PAE) inviting alumni to take part in the survey. For alumni who did not complete the survey following this PAE, Wallis Group sent a series of reminder emails and, where possible, a reminder SMS to encourage a response. These reminders were only over sent to respondents who did not complete the survey at the time of sending, and the text for all correspondence was approved by ACIAR before use.

A small team of well-briefed and trained telephone interviewers from Wallis Group provided follow-up telephone calls in order to either remind alumni to take the survey—and re-send the survey link (also confirming their current email)—or to undertake the survey over the phone. As part of the survey process, Wallis Group endeavoured to secure opt-in permissions for respondents to be involved in the case studies.

The survey included confidentiality provisions (e.g. respondents would be de-identified in all reporting, unless specific consent to be identified was provided) and a commitment to sharing the survey results upon completion. The draft survey was finalised for ACIAR review and endorsement.

In addition to data about the outcomes of the JAF program, the alumni survey was used to reconfirm or update JAF alumni contact details, including details of their current professional positions. As such, it provided an additional opportunity to strengthen alumni data and alumni engagement.

Survey analysis combined qualitative and quantitative data analysis. The Wallis Group coding team reviewed all responses for each open-ended question and developed a relevant code frame for any given question. A member of the coding team evaluated each free-text response and assigned it a code from the code frame. Frequency and pattern analysis were then applied to the coded data. Quantitative data focused on providing descriptive statistics, with analysis disaggregated by gender, disability, geographic location and other variables, when meaningful. Where possible and relevant, survey reporting sought to enable comparisons with the 2004 Tracer Study, and there may also be scope to enable comparisons with reports from the Australia Awards Global Tracer Facility. This may be especially significant in exploring differences between ACIAR alumni and Australia Awards alumni in terms of partnerships with Australia and Australians, and their perceptions of Australia overall.

Case studies

To provide greater depth, and complement survey data, the Tracer Study provided for up to 20 case studies on individual JAF alumni. These enabled the evaluation to focus in greater detail on the experiences of JAF alumni and their organisations. The selection of participants, and the detailed design of the case study component, was undertaken after the alumni survey was concluded and an initial analysis of survey data completed. This ensured that case selection and study design could respond to the issues and insights emerging from the survey.

25 S Harvey and J Skeritt, *Impact of the John Allwright Fellowship Scheme—Survey Report*, ACIAR, Canberra, 2004.

26 GD Gray, J Mullen and J De Meyer, *Scoping Study: Evaluation and Targeting of Formal and Informal Capacity Building in ACIAR Training and Research Programs*, ACIAR, Canberra, 2014.

Data collection for the case studies was completed using individual interviews with sampled alumni and, where possible, with their employing organisation, ACIAR staff and/or collaborators. The aim was to complete multiple interviews per case study. This meant feedback provided by the alumni could be explored in greater depth, and also triangulated with data from their organisation and from ACIAR. Interviews were conducted by phone or video conferencing software depending on interviewee preferences and capabilities. With consent, interviews were recorded and transcribed with *otter.ai*, an automated transcription software program.

Analysis and reporting

The evaluation consultant analysed all data collected through document review, surveys and the case study interviews. This information was then aligned with the inquiry matrix and domains of inquiry outlined above. Analysis included simple descriptive statistics together with qualitative thematic analysis. The intention was to provide a succinct and robust summary of the outcomes and experiences of JAF alumni, both in general and in depth through the case studies.

The evaluation consultant prepared an overall Tracer Study report, including the case studies.²⁷ The case studies were prepared separately to the report, with references where relevant throughout the report body, and were also structured to stand alone as individual documents.

Limitations

The scope of the sample for the Tracer Study was constrained by the alumni data held within ACIAR and within the DFAT Australia Awards system, OASIS. Due to its creation date, OASIS data only dates back to fellows who graduated from 2008 onwards. Ideally the study would have been expanded beyond this, to include alumni as far back as the 2004 Tracer Study (i.e. those who graduated from 2005 onwards), but it was not possible to definitively identify those alumni from the general alumni data held within ACIAR. At present, alumni data does not consistently identify graduation/completion dates for alumni in the system (which is currently being upgraded and updated as part of developing a global ACIAR alumni database). Therefore, the decision was made that the Tracer Study would only include alumni identified through the OASIS system, with updated contact details drawn from the ACIAR alumni system.

While this limits the timeframe for the study's coverage, it does provide a more robust sample and still delivers a 10-year cohort of alumni for investigation.

The study was also somewhat limited by total travel bans associated with the COVID-19 pandemic. Ideally (and if budget allowed), the case study phase of the study would have included scope for face-to-face interviews, which can often provide richer data than phone or video conference interviews, especially across language and cultural differences. However, the study was designed to enable interviews using a range of communication platforms, as outlined in the report, to achieve the best interview data possible.

Utilisation

The Tracer Study is designed for 2 main audiences: one internal to ACIAR and one external to ACIAR. The JAF program is a longstanding and widely supported activity within ACIAR, with connections to most programs and offices. As a result, the study is expected to generate substantial interest across ACIAR, including with senior management, research program managers and staff, and country/regional offices. Internally, the Outreach and Capacity Building Team will be the primary *users* of the study—applying the findings and recommendations to improve the program and its content for communication products and collateral.

Externally, the audience is likely to be less focused on utilisation but still interested in the study's findings. This will include JAF alumni, including those who contributed data to the evaluation, as well as ACIAR's partner countries and organisations (including Australian tertiary institutions) who participate in both research projects and Fellowship activities.

DFAT is an important audience for the study report, particularly in the Australia Awards Branch which has co-funded the JAF program for many years, and also has direct involvement in the administration of JAF and alumni engagement at a global level.

The evaluation consultant ensured that Tracer Study reporting and associated communications were designed to meet the needs of these internal and external audiences. There is now scope for future work with the Outreach and Capacity Building Team to prepare several different documents communicating the evaluation results to internal and external stakeholders.

²⁷ Note, the original Tracer Study TOR required the inclusion of 'notes from these interviews' as an annex to the report, but this is not appropriate in light of confidentiality provisions, and would not be as useful as the case study reports themselves.

Inquiry matrix

Theory of change reference	What do we want to know?	Tracer Study component
Direct outcomes—institutions		
9. Institutions have a more skilled, qualified and diverse workforce	Where are ACIAR alumni working?	Survey
	Which institutions have multiple alumni?	Survey
	To what extent do institutions see alumni as improving their workforce capacity and diversity?	Case studies
Direct outcomes—agriculture professionals		
11. Agriculture professionals (all genders) have higher qualifications	How many individuals have been awarded a formal qualification as a result of ACIAR Capacity Building Program support?	Survey Document analysis (OASIS/ACIAR data)
	What sorts of individuals did not complete a qualification, if any?	Document analysis (OASIS data)
12. Agriculture professionals (all genders) have increased skills and knowledge (research, scientific, cross-disciplinary, management, leadership, policy, communications)	How relevant were the skills and knowledge gained through ACIAR support? Are there certain skills which have been more (or less) useful in practice?	Survey
	How do the managers of alumni perceive their new skills and knowledge?	Case studies
13. Agriculture professionals (all genders) are more confident and ambitious	To what extent do alumni feel that their JAF built their confidence and ambition?	Survey Case studies
14. Agriculture professionals (all genders) have useful links with people and organisations	To what extent are agriculture professionals (alumni) maintaining their links with the people and organisations they met during their ACIAR program?	Survey Case studies
15. Agriculture professionals (all genders) have an expanded world view and greater life experience	How have agriculture professionals changed their general views about the world?	Survey Case studies
16. Agriculture professionals (all genders) increase their scientific output, including publications	How did the JAF/qualification influence research output, including publications?	Survey Case studies
17. Agriculture professionals (all genders) have increased understanding of gender equality, diversity, etc.	In what ways have agriculture professionals shifted their thinking about equality and diversity?	Case studies
Direct outcomes—ACIAR		
18. There is a diverse pool of agricultural professionals in the Indo-Pacific with skills and experience relevant to future projects who have links to ACIAR	Who are the ACIAR alumni in the region? Where are they working?	Survey
Indirect outcomes—institutions		
21. Institutions undertake good quality agricultural research for development	What sort of research are ACIAR alumni and their institutions doing? How are alumni contributing to, or leading, this research?	Case studies
23. Institutions support alumni to build their peers' capacity and share their knowledge	How are the institutions where alumni work supporting them to share their new skills and knowledge?	Survey Case studies

Inquiry matrix (continued)

Theory of change reference	What do we want to know?	Tracer Study component
25. Institutions have a more gender diverse workforce, including at leadership and management levels	In what way are institutions changing the mix of people in their workforce, and how are alumni contributing to that?	Case studies
Indirect outcomes—researchers		
26. Agriculture professionals (all genders) are promoted, secure new and better employment, win other academic scholarships or opportunities	How have alumni careers progressed over time?	Survey
	How do alumni view the contribution ACIAR support has made to their career pathways?	Case studies
	What obstacles have alumni faced in advancing their careers in line with their ambitions?	
27. Agriculture professionals (all genders) undertake good quality research, including collaborations	What research are alumni undertaking?	Survey
	Who are they collaborating with?	Case studies
	To what extent is this research utilising the skills, knowledge and networks developed with ACIAR support?	
28. Agriculture professionals (all genders) share their expertise and knowledge and retain links with ACIAR, other alumni, and their wider networks	How are alumni sharing their expertise and knowledge?	Survey Case studies
	To what extent are they maintaining the links they developed during their ACIAR program?	Survey Case studies
29. Agriculture professionals (all genders) demonstrate, and are advocates for, gender equality, diversity and merit-based management	For those alumni who are in management or leadership positions, to what extent are they advocating for and practicing inclusive practices?	Case studies
30. Agriculture professionals (all genders) work in ACIAR projects and with Australian partners	How many alumni are working in ACIAR projects are completion of their Capacity Building Program? (disaggregated)	Survey Case studies
	How are ACIAR projects making use of ACIAR alumni?	
	To what extent are alumni working with Australian partners?	

Annex 3. Survey respondent profile

Gender	No.	%
Male	141	70.1
Female	60	29.9
Total	201	100

Disability	No.
No	199
Yes	1
Prefer not to say	1
Total	201

Country	No.	%
Indonesia	46	22.9
Vietnam	36	17.9
Papua New Guinea	21	10.4
Philippines	18	9.0
Timor-Leste	10	5.0
Iraq	9	4.5
Pakistan	9	4.5
India	8	4.0
Bangladesh	7	3.5
Cambodia	7	3.5
Fiji	5	2.5
Lao PDR	5	2.5
Bhutan	3	1.5
Ethiopia	3	1.5
Nepal	3	1.5
Solomon Islands	2	1.0
Canada (migrant)	1	0.5
Malawi	1	0.5
Mozambique	1	0.5
Myanmar	1	0.5
South Africa	1	0.5
Syria	1	0.5
Tanzania	1	0.5
Tonga	1	0.5
Vanuatu	1	0.5
Total	201	100

Region	No.	%
Pacific	40	19.9
East Asia	113	56.2
South and West Asia	40	19.9
Africa	7	3.5
Total	200	100

Discipline of study	No.	%
Agribusiness	25	12.4
Broadacre crops	14	7.0
Fisheries	16	8.0
Forestry	20	10.0
Horticulture	25	12.4
Livestock	22	10.9
Social sciences	32	15.9
Soil and land management	13	6.5
Water and climate	11	5.5
Other (specify)	23	11.4
Total	201	100

Level of qualification	No.	%
Doctoral Degree	143	71.1
Master's Degree (Research)	27	13.4
Master's Degree (Coursework)	30	14.9
Graduate Diploma	1	0.5
Total	201	100

Type of employer	No.	%
University or tertiary institution	59	29.4
Government ministry or department	57	28.4
Government research institution	33	16.4
NGO, development or other organisation	22	10.9
Private research institution	3	1.5
Self-employed	2	1.0
Other	8	4.0
Blank	17	8.5
Total	201	100

Year of completion	No.	%
2010	14	7.0
2011	18	9.0
2012	32	15.9
2013	12	6.0
2014	14	7.0
2015	19	9.5
2016	16	8.0
2017	26	12.9
2018	27	13.4
2019	23	11.4
Total	201	100

Annex 4. Additional data

Table 12 Qualification enables (complete data)

Qualification enables	To a large extent	To a moderate extent	To a small extent	Not at all	Not sure / Prefer not to say / NA	Total
Increase your research output	168	25	4	2	2	201
Increase your scientific publications	113	60	17	5	6	201
Secure additional research funding	56	76	37	17	15	201
Supervise research students	97	46	28	15	15	201
Lead research projects	114	53	22	6	6	201

Table 13 Most significant links (complete data)

Links	No.	% who answered	% sample
University or tertiary institution	69	76.7	34
ACIAR staff	11	12.2	5
Other international students	3	3.3	1
Government research institution	3	3.3	1
Government ministry or department	2	2.2	1
Other researchers in Australia	1	1.1	0
Other international researchers met in Australia	1	1.1	0
Total	90		

Table 14 How links are being used (complete data)

How links are being used	No.	% who answered	% sample
Advice or mentoring support (e.g. help with publications, research design)	12	7.7	6.0
Collaborating on research proposals or projects	84	54.2	41.8
Assistance supervising or assessing students or young researchers	1	0.6	0.5
Sharing information	16	10.3	8.0
Introductions to others (networking)	2	1.3	1.0
Joint publications	18	11.6	9.0
Employment opportunities for self	2	1.3	1.0
Providing colleagues for guest teaching, presentations	1	0.6	0.5
Staff / student exchanges	1	0.6	0.5
Further skills development / skills for self	7	4.5	3.5
Access to research funding	6	3.9	3.0
Other opportunities	5	3.2	2.5
Total	155		

Table 15 Most significant personal change (complete data)

Personal change	No.	% total
International collaboration abilities	33	16.4
More confident in technical (research) skills	32	15.9
Teamwork / working with others / social skills	21	10.4
More open to ideas, more flexible	17	8.5
English language skills	11	5.5
Better communicator	10	5.0
Critical thinking	9	4.5
More confident raising ideas making suggestions, speaking up	6	3.0
New ideas and ways of working	6	3.0
Understanding cultural and social difference, more open-minded	6	3.0
More confident to advance in career	5	2.5
More confident starting new projects or own business	4	2.0
More confident giving presentations	3	1.5
Understanding gender equality	3	1.5
More confident as a woman in a male-dominated environment	1	0.5
Ambition	1	0.5
More independent	1	0.5

Table 16 Most significant personal change—men (complete data)

Personal change	Men no.	Men %
International collaboration abilities	28	19.9
More confident in technical (research) skills	23	16.3
Teamwork / working with others / social skills	14	9.9
More open to ideas, more flexible	12	8.5
English language skills	8	5.7
Better communicator	7	5.0
Critical thinking	6	4.3
New ideas and ways of working	5	3.5
More confident raising ideas making suggestions, speaking up	4	2.8
More confident to advance in career	4	2.8
Understanding cultural and social difference, more open-minded	3	2.1
More confident giving presentations	2	1.4
More confident starting new projects or own business	2	1.4
Understanding gender equality	1	0.7
More independent	1	0.7

Table 17 Most significant personal change—women (complete data)

Most significant personal change	Women no.	Women %
More confident in technical (research) skills	9	15.0
Teamwork / working with others / social skills	7	11.7
International collaboration abilities	5	8.3
More open to ideas, more flexible	5	8.3
Critical thinking	3	5.0
Understanding cultural and social difference, more open-minded	3	5.0
English language skills	3	5.0
Better communicator	3	5.0
More confident raising ideas making suggestions, speaking up	2	3.3
More confident starting new projects or own business	2	3.3
Understanding gender equality	2	3.3
More confident giving presentations	1	1.7
More confident as a woman in a male-dominated environment	1	1.7
More confident to advance in career	1	1.7
Ambition	1	1.7
New ideas and ways of working	1	1.7



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