CSIRO - AusAID Research for Development Alliance

Learnings from Phase 1 projects

C.H. Roth[1], C. Miller, S. Park and M. Spink

With contributions from J. Butler, K. Duggan, A. Kearns, S. Meharg and M. Moglia

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[1] Corresponding author: christian.roth@csiro.au

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1. Introduction

The CSIRO – AusAID Research for Development Alliance was established in 2007. In the first phase of the Alliance, a suite of small projects were jointly commissioned by AusAID and CSIRO in June 2008. These projects were implemented in a very short timeframe, had limited budgets and represented very targeted or opportunistic interventions, broadly addressing issues related to climate change, urban sustainability and integrated water resource management.

Despite short timeframes and modest resources, some of the projects were very successful, while others were less effective. At the same time, these projects also represent the initial stage of the development of the CSIRO – AusAID relationship under the Alliance.

This report provides an overview of what the projects achieved and discusses learning's from the delivery of Phase 1 projects to date. It was prepared based on a desktop review of project documentation and feedback from CSIRO and AusAID staff obtained during an evaluation workshop. The primary audience are staff in both organisations involved in project design, implementation and monitoring.

It is anticipated that these learnings will further streamline the Alliance relationship, as well as informing project development and partnership management in the Phase 2 projects currently under design. Further details on the Alliance and Alliance projects can be found at http://www.rfdalliance.com.au

2. Phase 1 Project Achievements and Impacts

A total of 8 projects and one supplementary project with an overall AusAID budget of 1.7 M were commissioned in June 2008. Background information and final reports of the projects can be accessed at http://www.rfdalliance.com.au/site/projects.php. The key project achievements and impacts and a brief discussion on future opportunities arising out of the projects is provided in Table 1. The projects were:

1. Regional Climate Change Projection Development and Interpretation for Indonesia
   Contacts: Jack.Katzfey@csiro.au and John.Mcgregor@csiro.au
2. Climate Change and Ecological Assets in South East Asia
   Contact: Craig.Miller@csiro.au
3. Regional and Country Scale Water Resource Assessment
   Contact: Magnus.Moglia@csiro.au
4. Addressing Complex Issues in Watershed Management – Philippines (supplementary project)
   Contact: Craig.Miller@csiro.au
5. Melanesian Coastal and Marine Assets and Sustainable Futures for Milne Bay
   Contacts: Tim.Skewes@csiro.au and James.Butler@csiro.au
6. Rural Industries Vulnerability and Adaptation to Climate Change
   Contact: Sarah.Park@csiro.au
7. Mekong Basin Water Resource Assessment
   Contacts: Judy.Eastham@csiro.au and Mac.Kirby@csiro.au
8. A Strategic Sustainability Assessment for the Pacific
   Contact: Heinz.Schandl@csiro.au
9. Research Opportunities for Sustainable Urban and Regional Development in Vietnam and Indonesia
   Contacts: Allen.Kearns@cisro.au and Seona.Meharg@csiro.au

Table 1: Overview of Phase 1 projects

Project achievements	Project impacts	Capacity building	Future opportunities
Regional Climate Change Projection Development and Interpretation for Indonesia *IPCC climate change projections are available for Indonesia but there is limited ability to utilise this information on a regional scale as the information provided is too coarse. In addition, some countries do not have the ability to "downscale" this information for their own regional purposes. This project addressed these issues through regional climate modelling over Indonesia. This activity provided BMKG (Agency for Meteorology, Climatology and Geophysics) staff from Indonesia with datasets and skills to assess possible impacts of climate change over Indonesia.*			
• Provided regional information about climate change to assist in decision making • Completed six climate models for periods: 1971-2000, 2041-2060, 2081-2100 for the A2 emission scenario at a down-scaled resolution of 60 km • Finer scale incorporated a more realistic topography and other features, improving projections • Improved the capture of uncertainty of climate projections	• Indonesian Bureau of Meteorology continuing to run scenarios on the model which provides information for informing policy and adaptation decisions • Results used by Conservation International and an Asian Development Bank funded project	• Trained 14 scientists and agency technical staff from Indonesia, Philippines and Vietnam in a 2-week training workshop in the use of regional climate models and interpretation of climate projection data	• As a result of this project Indonesia, Vietnam, Philippines and South Africa are discussing with CSIRO the possibility of setting up a consortium to develop CCAM for weather and climate research • Building upon this project and as part of the Pacific Climate Change Science Program (part of the Australian Government's International Climate Change Adaptation work), CSIRO is running a global 60 km CCAM climate run for multiple global climate models from the period 1971-2100
Climate Change and Ecological Assets in South East Asia *Most SEA governments have identified that poverty reduction, particularly through natural resource management and agriculture is of strategic importance. Protection of natural resources from non sustainable use and the detrimental effects of climate change is critical to achieving this. Climate change and non sustainable resource use has the potential to drastically affect the resource base of the economy of these countries. Australian research team members worked with scientists and policy makers from Cambodia, Indonesia, Philippines, and Vietnam to develop and evaluate a systematic process for making conservation policy that takes climate change, regional social and ecological attributes, and poverty reduction into consideration.*			
• Establishment of a new network of environmental professionals in south east Asia • Training participants in a whole of systems approach to policy development for biodiversity conservation, poverty alleviation, and climate adaptation • Raising awareness of pan-Asian environmental and social issues	• Capacity building and establishment of a new network	• Training 20 people from Cambodia, Indonesia, Philippines and Vietnam in applying systems thinking and application of integrated social and ecological trend analysis for policy development	• Invitations to participate in climate adaptation research activities in Indonesia, Philippines and Vietnam

Project achievements	Project impacts	Capacity building	Future opportunities
Regional and Country Scale Water Resource Assessment *To provide a method for rapid assessment of water needs in diverse locations, it is recognised that water management is a strongly contextual and multi-faceted issue and there is a need to simplify complex aspects of water management into only a few dimensions. This has been achieved by the application of the Water Needs Index methodology, which is a modified version of the Climate Vulnerability Index which has been developed by a large number of well-known water researchers. This methodology has been operationalised via a prototype software system incorporating a geographical information system, a database system and a user friendly interface.*			
• Method developed and tested for assessing multiple dimensions of water needs at regional, national and local scales	• Method provides robust platform for decision making and prioritisation of investments in water infrastructure • Led to the addressing Complex Issues in Watershed Management supplementary project (below)	• Training CSIRO staff in application of this new method • Engagement of stakeholders in Kiribati during development and testing	• Engagement of research team sought by Tigum-Aganan Watershed Management Board (see supplementary project below)
Addressing Complex Issues in Watershed Management – Philippines (supplementary project) *This supplementary project built on the above project and was initiated to assist the Tigum-Aganan Watershed Management Board and watershed stakeholders in Iloilo City, Philippines in resolving a number of complex issues associated with watershed management and land use conflicts, and to provide a baseline for future watershed policy, management, and research in the face of climate change. A series of interactive workshops, focus group discussions and a fieldtrip were used to clarify the issues of concern and to allow the collaborative sharing of information.*			
• Dialogue facilitated between stakeholders and provide information to enable Watershed Management Board to develop integrated policies for water security, natural hazard alleviation and sustainable livelihoods in the face of climate change and contested land management	• Provided legitimacy to Tigum-Aganan Watershed Management Board (a statutory authority) • Facilitated discussion and information sharing amongst diverse stakeholders in the watershed	• 40 Filipinos engaged in deliberative assessment of, and information sharing about, wide-ranging and complex watershed issues	• Invitation to engage in collaborative research and co-learning in the Philippines about watershed management for sustainable livelihoods and water security, and for adaptation to climate change
Melanesian Coastal and Marine Assets and Sustainable Futures for Milne Bay *This project addressed the issue of adequately and cost-effectively describing and assessing linked terrestrial-marine conservation assets in Melanesia to as the basis to guide effective natural resource management, by identifying and assessing the status of coastal and marine ecosystem assets in Melanesia, and describing the processes that sustain or threaten them, including the processes linking these assets with the terrestrial system. The methodology was tested in Milne Bay, PNG.*			
• Developed methods to identify and assess the status of coastal and marine ecosystem assets in Melanesia, and describe the processes that sustain or threaten them	• Discussions within the Milne Bay Administration and community groups about how to improve natural resource management and development planning within the province	• Trained 14 local administration officers in integrated natural resource management.	• The Milne Bay Administration intends presenting examples of bottom-up, multi-stakeholder planning to the national government. • AusAID's representatives in Milne Bay

Project achievements	Project impacts	Capacity building	Future opportunities
• Significantly increased the understanding and capacity of the Milne Bay Administration to undertake integrated planning of natural resources, and to scope future development trajectories and climate change vulnerabilities.	• With the facilitation of AusAID, existing planning processes and national government funding initiatives were reviewed, and opportunities identified for incorporating integrated planning		are very supportive of climate change and unsustainable natural resource use issues being addressed in planning processes, particularly at the ward and village level
Rural Industries Vulnerability and Adaptation to Climate Change *This project undertook an assessment of the relative vulnerability in 16 Pacific countries (stratified into island types and sub-regions) in the context of climate change projections. The methodology included an assessment of adaptive capacity using a modified version of the sustainable livelihood approach.*			
• New method for assessing vulnerability and adaptive capacity developed and tested in Pacific Islands region • Engagement of regional stakeholders in process of assessment, information sharing, and co-learning	• Post hoc evaluation of stakeholders determined workshop to be useful in capacity building for decision makers engaged in climate change and rural livelihoods arena	• Workshop useful in capacity building for key country, region, and industry decision makers engaged in climate change and rural livelihoods in the Pacific	• Invitation to project leader to be member of Design Team for a $12M V&A assessment program operating within the International Climate Change Adaptation Initiative (ICCAI) • Specific project ideas and proposals identified in report and circulated to AusAID contacts • Conduct sub-country assessments of vulnerability and adaptation
Mekong Basin Water Resource Assessment *This study investigated how the climate is likely to change in the Mekong Basin by 2030, the impact of climate change of water resources and also quantified the uncertainty around future climate projections. The research provided a preliminary assessment of the potential impact of these changes on water resources and productivity. In summary, key impacts under future projections for climate and population in 2030 include; increasing flood risk, increases in food scarcity and likely changes in the productivity of fisheries through hydrological impacts on the ecology of rivers, waterbodies and floodplains.*			
• Investigated how the climate is likely to change in the Mekong Basin by 2030, and quantified the uncertainty around future climate projections • Provided a preliminary assessment of the potential impact of climate change on water resources and productivity	• Outcomes used by the Mekong River Commission (MRC) in its Regional Synthesis report on adaptation to climate change, as the basis from which the MRC is developing the AusAID Climate Change Adaptation Initiative • Study led AusAID to fund a follow-on project for a more detailed assessment of climate impacts on agriculture in the Mekong Basin		• The Greater Mekong Futures Project being implemented as a Phase 2 project under the Alliance is likely to be able to draw on the results of this study • Other regional adaptation projects (e.g. ACIAR-funded project on farm level adaptation) also building on the information generated by this study

Project achievements	Project impacts	Capacity building	Future opportunities
A Strategic Sustainability Assessment for the Pacific *This project will provide a rapid strategic sustainability assessment (SSA) of the Pacific Islands region with a view to comprehensively accounting for their natural resource, social and economic circumstances (the "triple-bottom line"). The approach used will be a modified form of Strategic Environmental Assessment and will provide a series of principles about: (i) natural resource conditions and trajectories, (ii) economic conditions and trends, and (iii) emergent social issues. These principles can be used to inform policymakers and improve planning and governance throughout a region in which there is a paucity of quality information.*			
• A rapid strategic sustainability assessment (SSA) of the Pacific Islands region with a view to comprehensively account for their natural resource, social and economic circumstances (the "triple-bottom line")	• Principles can be used to inform policymakers and improve planning and governance throughout a region in which there is a paucity of quality information		• Comprehensive SSA will provide a platform of knowledge from which key problems can be diagnosed and from which further research and analytic tasks can be discerned in the Pacific Region
Research Opportunities for Sustainable Urban and Regional Development in Vietnam and Indonesia *One of the key challenges for managing urbanisation in Asia is finding ways to promote new social, economic and environmental development pathways through strategic investment in urban policy, governance, and development practice. A systems approach was developed in this study emphasizing the role of different actors and various linkages among different governmental hierarchies, sectors, and actors (local and international). It provided the basis from which to identify Alliance investment opportunities in sustainable urban development in Indonesia and Vietnam.*			
• Developed a conceptual framework outlining an integrative, multi-scale view of cities, which can be used to organise and interrogate urban problems; identify opportunities for coordinating activities and maximising co-benefits between urban infrastructure and service sectors, and identify ways to link local capacity building in universities in Vietnam and Indonesia to examine issues such as climate change and urban and coastal vulnerability	• Scoping missions generated a high level of interest and enthusiasm in both Vietnam and Indonesia for Alliance urban research that addresses coastal vulnerability and sustainable urban development under climate change and rapid urbanisation.		• Based on the feedback from partners in Indonesia and Vietnam, a follow-on proposal is being prepared for implementation as a Phase 2 project under the Alliance umbrella.

As Table 1 portrays, generally the Phase 1 projects were successful in achieving a broad range of scientific, development and capacity building outcomes, although not all projects were equally successful in all three domains. This is in part due to the fact that some projects were more science oriented and hence achieved notable research outcomes, in particular the projects on downscaling climate projections in Indonesia (Project 1) and on assessing the impacts of climate change in the Mekong Basin (Project 7). Other projects in their design were deliberately more oriented towards the development end of the spectrum, focussing on participatory processes and livelihoods and vulnerability assessments. Whilst less science oriented, these projects nonetheless yielded valuable learnings in terms of research methodology, which will be applicable to Phase 2 projects (e.g. Projects 4, 5 and 6).

3. Learning from Implementation

Evaluation of the eight Phase 1 projects has highlighted five key areas with potential to improve the effectiveness and impacts of Alliance research for development projects. These key areas cover:

- Identifying research needs and general project design principles
- In-country partnerships
- Strengthening the CSIRO-AusAID partnership
- Enhancing impact
- Continuous learning

Suggestions for activities and actions to address these key areas have been put forward by the CSIRO Phase 1 project leaders. A number of response activities and actions appear under more than one key area heading, highlighting the interconnectedness of the key areas and the potential for multiple benefits to result from response activities and actions.

Identifying research needs and general project design principles

The short duration of Phase 1 projects inevitably lead to some studies failing to include essential components of the research process. Ideally a project would operate for at least a sufficient period of time to enable the following phases to be undertaken: scoping and trust building, action phase, and a follow-up phase. Details of actions proposed for each phase are details in Table 2. It is recognised that participatory approaches should be integrated into the project design during all phases of the project to ensure the research is focused on the needs of key stakeholders and in-country capacity is enhanced, resulting in an increase in the longevity of project impacts.

In-country partnerships

Developing and maintaining relationships and partnerships are often key to achieving sustainable development outcomes. Table 3 details some of the learnings arising from the implementation of Phase 1 projects in managing risks and potential issues associated with in-country relationships and partnerships.

Table 2: Proposed components of project design

Phase	Elements to consider / activities to be undertaken (and rationale)
Scoping and relationship building	• Projects should be designed with regard to past project findings, particularly those where knowledge gaps and R&D opportunities have been identified • In-country scoping missions should be conducted, preferably in collaboration with AusAID to identify and develop appropriate research questions and project design, as well as considering logistical issues, meeting stakeholders, agreeing upon objectives/needs for the research in a local context, and the development of partnerships with local research institutions, industry sectors and NGOs. • Collaboration between CSIRO (in particular the project leaders) and AusAID (in-country posts and Canberra-based project officers) to integrate the project within previously established partner government and NGO networks to: (i) Facilitate initial contact (and on-going contact if appropriate) (ii) To draw upon indigenous and development community knowledge (iii) Identify further key collaborative partners and stakeholders • Close and ongoing direct contact between CSIRO project leaders and AusAID in-country posts, as well as local AusAID project managers • Support the role of a local facilitator (preferably a local champion) who knows key stakeholders, issues, speaks the language etc. • Ensure a project evaluation activity is included in the design of all projects and the information gathered from this given careful consideration and acted upon where appropriate
Project execution	• Organise and conduct local technical and training workshops jointly with stakeholders • Undertake field trips with sufficient time to build trust and for meaningful engagement with local partners and stakeholders. • Undertake repeat visits to feed information back to in-country stakeholders • Promote ongoing involvement with national AusAID program staff. Where feasible, planning and feedback from projects should involve the in-country AusAID office to engender support of the project. Joint development of the project in partnership with the in-country AusAID office would assist this
Project sustainability	• Enhance the longevity of project operations and impacts where possible through: (i) Linking with in-country universities and government agencies to develop and incorporate key local research staff into the project. (ii) Consider the potential/usefulness of small scale ongoing mentoring activities; (iii) Include government or non-government implementation organisations as partners; (iv) Linking of the project outputs/outcomes to existing AusAID or other donor programs. • Develop a communication plan that includes activities undertaken throughout the life of the project that utilises established networks and protocols within each organisation to disperse the research and development findings as effectively and comprehensively as possible. Inclusion of dedicated communication personnel from each organisation would facilitate this task. • Support of consortiums for interaction between countries should also be considered as a vehicle for dispersion of knowledge, capacity building and developing collegiate peer-based networks.

Table 3: Managing risks and potential issues associated with maintaining in-country relationships and partnerships

Risks/potential issues	Possible response
Not meeting the expectations of in-country partners	• Longer term projects with committed funding will help avoid the risks of not meeting the expectations of in-country partners and engendering the perception of the Alliance conducting fly-in-fly-out science. Essential to this is the undertaking of a scoping and trust building stage through participatory processes (See Table 1 for details on identifying research needs and general project design principles). • Avoiding overstatement of expected outcomes and more clearly explaining the nature of research (vs development) what it can deliver.
Insufficient understanding of the political, cultural and procedural context	• In-country visits by scientists need to be for such a duration to enable relationships with scientists and potential users of the project outputs, including government officials and NGOs, to be developed. This could involve CSIRO scientists undertaken extended stays in focus countries, as well as scientists from those countries visiting Australia for further training. • CSIRO scientists working on Alliance projects need to have good cross cultural communication skills, enjoy mentoring, and understand that methodologies and solutions that work in Australia may not necessarily work in the project context. Choosing CSIRO staff to work on the projects that have this skills base, as well as those with incentives to stay connected to the in-country network will assist in achieving stronger relationships and maximise partner commitment to the project. • Ensuring staff have undertaken cross cultural training and have access to mentoring from experienced professionals in either within CSIRO, AusAID or other key organisations.
Lack of AusAID and local buy-in for projects developed in haste with little participatory process	• Engage with committed and locally-respected facilitators or a steering committee based in the intervention area during all stages of a research project. Care must be taken to avoid an individual or committee becoming a 'gate keeper' or being distracted by other commitments. The contracting of a broker by the Alliance to work on a particular project with set deliverables may minimise this risk.

Strengthening the CSIRO AusAID partnership

AusAID and CSIRO as organisations, have different aims, modes of operations and cultures. In order to foster an effective research for development partnership it is important to understand these differences and undertake activities to negotiate points of difference and gain synergies from the interaction. A key message coming from CSIRO Phase 1 project leaders related to the need for clear articulation and a better understanding of intent and purpose of AusAID priorities. Conversely, it was also felt important for CSIRO to better communicate contemporary directions in research development and how these may be relevant to development. More generally, it appears that an enhanced exchange process would be desirable to foster a better understanding of what is being brought to the Alliance partnership by each organisation, their strengths and weaknesses, and the expectations and organisational requirements needing to be met by both parties. Activities suggested to address this could include:

- Regular seminars, e.g. CSIRO providing research related background on topics of particular relevance to AusAID, and AusAID conducting seminars exploring the nexus between research and development.

- Greater exposure of AusAID development issues and activities to appropriate CSIRO staff (and vice versa) through communication mediums such as Forum magazine.
- Activities undertaken to develop a greater cross-understanding of the procedures of AusAID and CSIRO, including their strengths and weaknesses (this may include sabbaticals for key staff from each organisation).
- A more long-term perspective may include the development of research hubs in a subset of partner countries that allow relationships to be developed and maintained, and generic issues to be identified and researched. The hubs could be resourced for, say, five years with a review of performance for continuance. The hubs do not need to be a physical thing, per se, but could be co-located in local Universities or government departments, allowing for capacity building, engagement of local researchers and communities, and easy dissemination of results.

In addition, many of the activities suggested in Table 2 regarding project design would contribute to strengthening the CSIRO-AusAID partnership. These include the joint scoping of a project brief to identify key challenges in the development arena and the appropriate science questions that can be addressed using the knowledge and skills base residing within CSIRO. In addition, engendering ongoing and effective communication between dedicated Canberra-based AusAID project officers throughout the life of the project (and to include the roll out of a post final-report communication strategy) is offered for consideration. Clearly documenting in the project brief the activities to be undertaken by each party may address many of the issues experienced in the Phase 1 projects, and promote a relationship between CSIRO and AusAID that avoids the perception of a client and consultant.

Enhancing Impact

Learning's from the Phase 1 projects on enhancing impacts include the need to:

- Ensure in-country partners are identified early in the life of a project and AusAID in-country posts are utilised to facilitate input into the project brief and design phase. Including a role for AusAID in the project plans (where appropriate) will assist in enhancing impact.
- Identify and engage an in-country facilitator or champion as a key point of contact to drive in-country networking and the ongoing roll out of the project. Consideration could be given to engaging this person through AusAID to increase project ownership.
- Ensure close collaboration between CSIRO project leaders and AusAID in-country posts and Canberra-base project managers when developing a communication strategy at the outset of each project. Utilise dedicated communication staff in both organisations to provide input on tailoring products to communicate the project results to different audiences.
- Promote the use of an in-country steering committee within each project that consists of the AusAID in-country post and key personnel from local or regional administrative and technical governing bodies or related institutes.
- Promote the inclusion of sabbaticals for CSIRO staff and in-country technical staff in reciprocal locations to help build capacity in both parties.
- Allow some flexibility in funding within the Alliance to pursue opportunities for enhancing impact that arise through implementation.
- Ensure conduct and communication materials are culturally appropriate (this would include the translation of relevant materials into the local languages).
- Provide guidance to CSIRO project leaders on the development of a project evaluation activity, particular focusing on the resulting information being reviewed and acted upon where necessary.

- Standardise performance monitoring and reporting procedures developed to guide CSIRO project leaders, bearing in mind the need to ensure these procedures are effective and add value to the project rather than being a burdensome delivery item.
- Include participatory activities in each project aimed at collating future research needs from case study stakeholders to inform future projects.
- Involve local partners in assessments, and use single (following the rules), double (changing the rules) and triple (learning about learning) learning loops over time.

Continuous learning

Continuous learning was considered by Phase 1 project team leaders as a means to enhancing the relevance, effectiveness and impact of Alliance project activities. Continuous learning may be enhanced through short term measures aimed at improving performance monitoring and reporting, and the channelling of project learning's into future project design. The following actions may assist this:

- An annual review of project findings that are distributed to appropriate staff in both organisations.
- The use of past project findings to inform the development of new projects, especially where knowledge gaps and R&D opportunities have previously been identified.

Resource implications

It is important to recognise that many of the measures identified above and in Tables 2 and 3 have budgetary implications, and will not occur unless explicit resources are identified and set aside to meet some of the additional costs likely to be incurred (e.g. for engaging specialists to deliver cross cultural training; identifying and resourcing in-country champions; increasing the duration of periods spent in-country by CSIRO scientists.

4. General contribution to CSIRO-AusAID Research for Development Alliance

To assess the overall contribution, the key achievements in Table 1 are mapped against the main outcome domains, in accordance with the Alliance Objectives as articulated in the AusAID-CSIRO Research for Development Alliance Performance Management System:

Science outcomes

- Demonstrated the benefit of taking systems approaches to assessing the impact of climate change on water resources in the Mekong Basin.
- Developed a novel approach to efficiently downscale climate change projections for Indonesia to a finer spatial resolution, making climate projections more locally and policy relevant. This approach now being replicated in other projects and countries.

Development outcomes

- Results of the Mekong Basin water resource assessment used by the Mekong River Commission (MRC) in its Regional Synthesis report on adaptation to climate change, as the basis from which the MRC is developing the AusAID Climate Change Adaptation Initiative.

Institutional outcomes

- Capacity building has taken place in many of the scoping projects, e.g. training scientists and agency staff in Indonesia, Philippines and Vietnam in the use of regional climate models and interpretation of climate projection data, training 14 local and catchment administration officers in PNG and Philippines in integrated natural resource management.
- Scoping projects enabled CSIRO scientists to build research networks in Indonesia and the Mekong countries and to deepen CSIRO's capability in undertaking research for development
- Enhanced the partnership between CSIRO and AusAID in the domains of climate change, water resource management and sustainable urban development.