

Sustainable Development Investment Portfolio

ACIAR Implementation Framework **SDIP** Phase 2 2018-2020



Australian Government
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OVERVIEW

The Sustainable Development Investment Portfolio (SDIP) aims to improve the integrated management of water, energy and food in three major Himalayan river basins—the Indus, Ganges and Brahmaputra, with a particular focus on benefits to women and girls. The Department of Foreign Affairs and Trade (DFAT) program is now in its second phase (SDIP2), and includes seven main partners, with an investment of \$42 million between 2016 and 2020. The targeted outcomes from the program include strengthened mechanisms for regional cooperation; critical knowledge being generated and used; and an improved enabling environment for institutions and policy.

The nexus between food, water and energy, in the wider context of sustainable food systems, is an issue of fundamental and strategic importance for South Asia, for Australia’s interests in the region and for the long-term work of ACIAR. In this context, SDIP2 provides a strategic and catalytic opportunity for ACIAR to develop a long-term integrated, gender-inclusive and highly collaborative approach to our work on these issues in the region.

ACIAR’s inputs to SDIP2 will be coordinated under ACIAR’s Regional Partnership (ARP) Program (ARP-SDIP2) and will aim specifically at supporting the sustainable intensification of agriculture using a food systems approach. It will focus mainly on the Eastern Gangetic Plains (EGP), but take into account the broader regional issues, drivers and constraints that influence development in the region. This includes two of the most pressing issues; options for adapting to climate change, and the need to promote gender equality by empowering women and girls.

ACIAR can add value to SDIP2 by helping our partners to bring together the ‘big picture’ related to sustainable food systems; create space for regional engagement; demonstrate field to policy links; and showcase relevant institutional models.

This document describes an integrated framework for development of ARP-SDIP2. It complements the ACIAR Investment Strategy, builds on ACIAR’s work in Phase 1, and has been framed in relation to ideas already presented by ACIAR, DFAT and a range of partners and stakeholders as to how ACIAR’s inputs to SDIP2 could be implemented most effectively.

BACKGROUND

This project aims to improve elements of food, energy and water security within a wider food systems context in the EGP. It will focus on sustainable food systems as a way of integrating different sectors at a range of scales, and ensuring gender-inclusive planning processes and outcomes.

Much valuable work relevant to the sustainable intensification of agriculture in the EGP has been completed to-date. Sustainable Intensification in agriculture refers to processes which increase agricultural yields with the same or less inputs, whilst at the same time reducing environmental impacts. In addition to ACIAR’s inputs to Phase 1 of SDIP through the Sustainable and Resilient Farming Systems Intensification (SRFSI) project in the EGP, there is a large body of relevant work under ACIAR’s current and past research programs in South Asia (see Appendix 1) that can contribute to more sustainable food systems in the region. ACIAR’s inputs to SDIP2 will build on and synthesise ACIAR’s existing program of field level research, local policy engagement and strong partnerships in the SDIP operating area.

SRFSI (managed by the International Centre for Maize and Wheat Improvement (CIMMYT)) is an on-going project funded under SDIP Phase 1 (May 2014 – June 2019). It has focused on the potential contribution of Conservation Agriculture based Sustainable Intensification (CASI) approaches to improving agricultural productivity, household profitability and sustainability for smallholder farmers; and on local institutional innovations to support and accelerate the uptake of improved management practices. The project has examined areas including crop system diversification and optimisation; zero and minimum till approaches (including use of the Happy Seeder direct drill); options for mechanisation; improved water management; access to markets; and gender gaps in technology adoption. The project has worked towards ensuring high rates of women’s participation, and in 2016-17 more than 50% of participants in direct project activities were women. Other ACIAR projects in the EGP are working on complementary aspects including improving women’s access to information and water resources, crop improvement, agricultural diversification and cropping systems intensification (CSE/2016/112, LWR/2014/072; LWR/2014/073); and irrigation management using both groundwater and surface water (LWR/2012/079) (see Appendix 1 for details).

The work of SRFSI and other programs of field level research and local engagement are critical for ground-truthing the practical realities that farmers (particularly women farmers and female headed households), local businesses, and government support systems face; and for exploring the linkages between field level change and wider policy processes. The synthesis of these field results will make a major contribution to understanding key elements at different scales, and the links between them. This will contribute to wider discussions on how to create sustainable and resilient farming systems that benefit women across the EGP, supported by evidence-based and inclusive policy decision making.

There is a need to complement previous work with clearer mechanisms for integrating and aligning new areas of focus, and for ensuring research activities and syntheses are guided by an overall analytical framework that is strongly linked to on-ground realities.

IMPLEMENTING ARP-SDIP2

ARP-SDIP2 will focus on improving food, energy and water security for more sustainable food systems in the EGP, through resilient and inclusive farming systems supported by robust policies and strategic regional planning. The implementation framework presented here (Figure 1) proposes a centralised scientific leadership and program management team that can guide overall program development, ensure in-depth synthesis and adapt work to local contexts and policy opportunities. The program will be guided by an overall two year work program that outlines a sequence of priority activities and tasks. Annual program and partner workplans will refine this to enable year by year flexibility and ensure an ability to adapt to emerging issues and knowledge gaps.

A Steering Committee (SC) will guide the work program by informing priorities, responding to higher level research results, and ensuring its integration with regional policy and dialogue processes and other research efforts. The composition of the SC will consist of a mix of eminent representatives of the wider agricultural system, including members of national planning commissions, regional partner organisations, a gender academic and a representative from a farmer’s group or the private sector. Additionally, separate regional working groups of professionals will be established as necessary to join Foresight activities and guide the

development of relevant and responsive studies emanating from policy, analytical and synthesis studies within the program.

A series of components lead by Australian and international teams will focus on dialogue and foresight processes to consider strategic contributions to sustainable food systems, and to identify policy and institutional innovations in the context of gender and climate change. These activities will identify likely future pathways within the food, energy and water sectors, and map critical policy constraints, options for and likely impacts associated with achieving preferred outcomes. This includes considering the future of women in agriculture, and opportunities to enhance women’s participation across the food system.

A field scale component will be based on work being continued under Phase 1 funding, and the SRFSI project will provide an opportunity to demonstrate field scale links to policy processes. At the same time, additional work will be conducted to synthesise findings and explore second generation issues that arise with the widespread scaling of CASI approaches, including impacts on and preferences of women.

The program will also provide a flexible funding mechanism to improve regional analysis, assist informed policy dialogue and strengthen technical capabilities to support sustainable intensification of agriculture. Strategic analysis and dialogue will be informed by the field level results of SRFSI and other ACIAR projects. An integrated set of activities across local, meso and national scales will help to drive innovation around the incentives, policies, market mechanisms and extension approaches required to scale-up the adoption of more resilient, sustainable, inclusive and profitable food systems across the EGP.

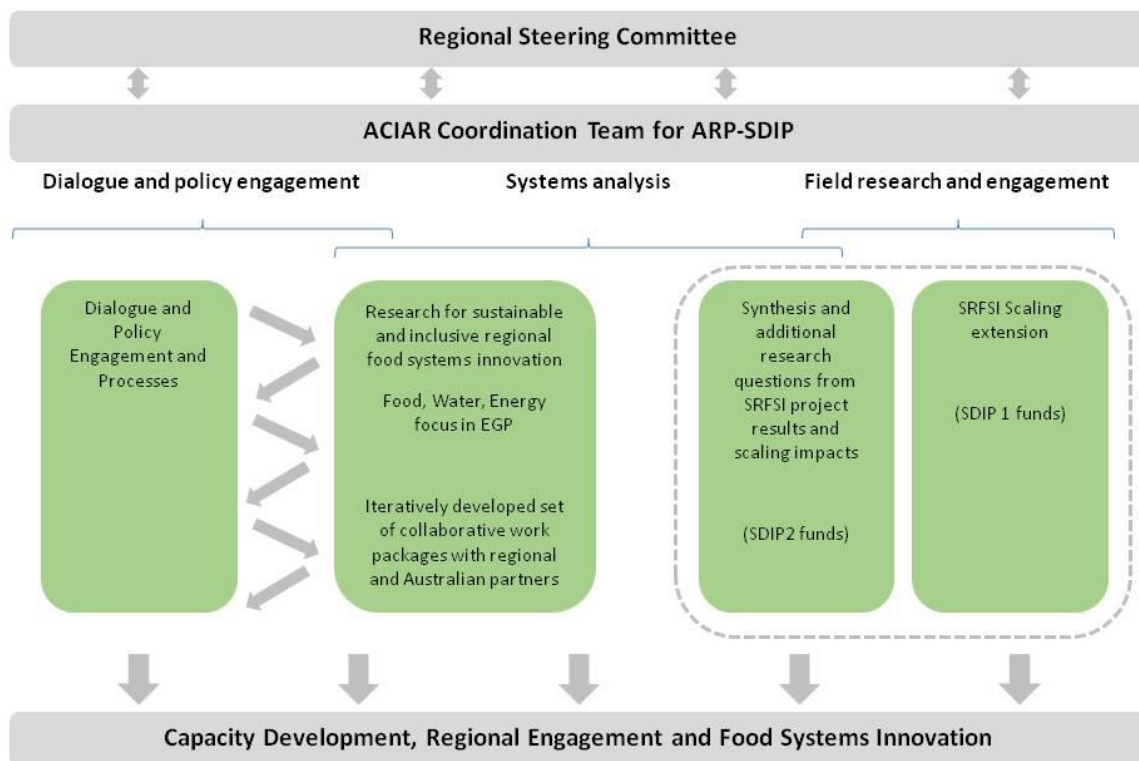


FIGURE 1 IMPLEMENTATION FRAMEWORK FOR ARP-SDIP2

ANALYTICAL FRAMEWORK AND RESEARCH QUESTIONS

Critical to ARP-SDIP2 is having an overall analytical framework that can guide the setting of research questions and the synthesis of results, and link these within a systems perspective. A focus on sustainable food systems as a way of integrating different and relevant sectors offers a framework that aligns well with regional issues and ACIAR's priorities and experience. This framework includes a focus on sustainable intensification of agricultural systems and the key elements and links at different scales, under the key themes of gender and climate change.

The overall ambition of ARP-SDIP2 is to support the development of an enabling environment with cross-sectoral collaboration to drive integrated and inclusive technical and institutional innovations that maximise the contribution of agriculture to sustainable regional food systems and improve food, water and energy security.

Such a focus gives rise to the following interconnected research questions:

1. What are the key trends of food systems in the region, and what are underlying drivers?
2. What are the medium and longer-term likely implications of these trends for food, water, energy and economic security across the region and within the focus basins of SDIP?
3. What are the current and likely future trends for women's engagement in agriculture, and how does this change with location?
4. Where are the mostly likely opportunities for policy change that could be transformational and how could such changes be catalysed and supported?
5. How can institutions in their various forms and scales simultaneously and successfully promote intensification, integration and inclusiveness of food systems in the EGP?
6. What lessons can be drawn from existing successes to inform future efforts to enhance prosperity-promoting activities in the region?
7. What are the technical prospects for large scale changes in farming systems that could be more sustainable, resilient, productive and profitable?
8. If such farming systems techniques were adopted at scale, what might be the wider scale implications for key parameters such as: overall increases and diversity in food production; water use; energy use; economic returns for different sectors in agriculture; food and nutrition security?
9. What are the key barriers to the wider scale adaptation and adoption of improved farming system practices?
10. What are the critical value chain and private sector engagement considerations required to support farming system change?
11. In supporting farmers to adapt and adopt new technologies and management and marketing strategies, what local processes of innovation and support are proving to be most successful and cost effective, and how could these function at a larger scale?

These guiding questions provide a framework for thinking; but clearly, not all can be addressed within the scope of ARP-SDIP2 and there is a need to narrow down the focus of ACIAR's inputs. The flexible structure of the program will allow the ACIAR team to build a program which addresses issues where ACIAR projects can make a significant contribution to critical knowledge gaps and key policy priorities of partner countries and respond to evolving issues. Areas of focus for research will be identified as part of the project work, particularly in conjunction with the Steering Committee and relevant working groups, but will also include key overarching

themes of climate change and gender. Initial activities will include scoping studies and review and synthesis work, drawing on preliminary activities undertaken during 2017-18.

COMPONENTS

ARP-SDIP2 will be implemented through five interlinked components (shown in Figure 2). Component 1 will serve as the overarching framework to ensure integration and synthesis across the program. Foresight work (Component 2) will both inform and be informed by Policy (Component 3) and Field scale (Component 4) research. Underlying these components will be a series of analytical studies (Component 5), to be commissioned in an adaptive way throughout the course of SDIP2 based on knowledge gaps and opportunities as issues emerge. These components are designed to integrate local, meso and regional level visions and engagement to create the enabling conditions for the development and scaling of sustainable and resilient food systems that contribute to food, water and energy security. Together, they ensure that there is a consistent theme within the project and that information flow is enhanced between different levels (farm, community, state, national, regional, policy). Importantly, this approach allows the broader system to connect with how farmers are impacted by change at different levels.

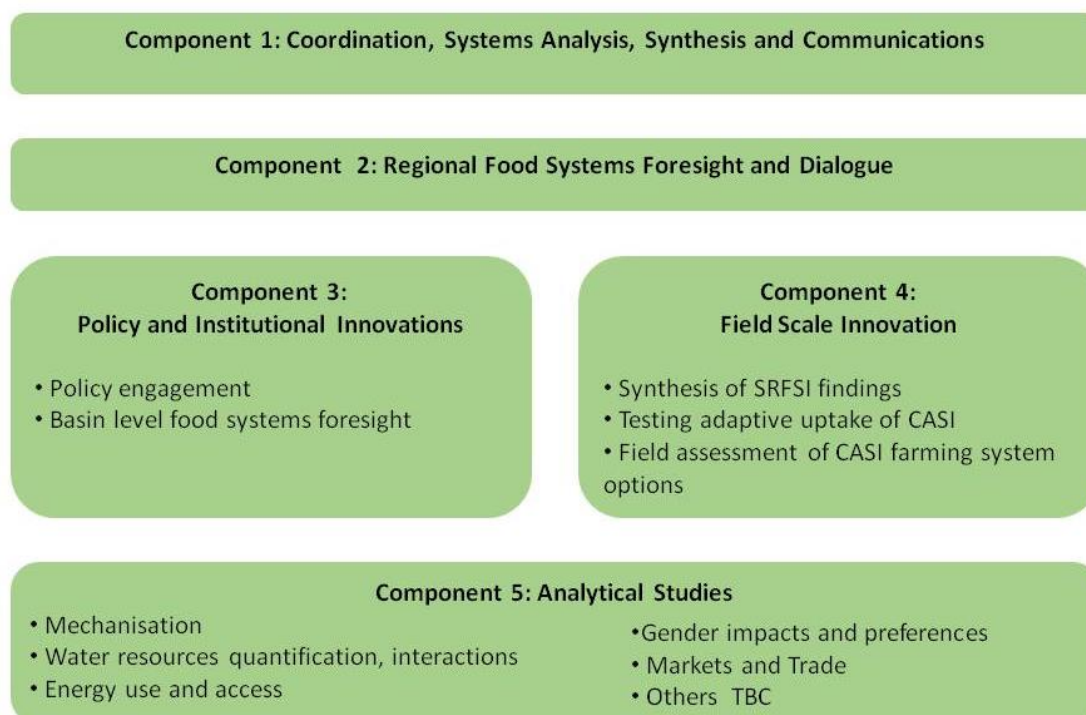


FIGURE 2 COMPONENTS OF ARP-SDIP2

It is proposed that funding will be split between the different components as set out in Table 1.

TABLE 1 FUNDING SPLIT BETWEEN COMPONENTS

Component	Proposed funding %	Note
1 Foresight and dialogue	16%	
2 Coordination and synthesis	16%	
3 Policy and institutional innovations	31%	
4 Analytical studies (flexible research fund)	31%	
5 Continuation of SRFSI (Phase 1)	6%	Main funds from SDIP Phase 1
Total	100%	

5.1 COMPONENT 1: COORDINATION, SYSTEMS ANALYSIS, SYNTHESIS AND COMMUNICATIONS

Objective: Ensure that the regional partnership program on sustainable food systems is guided by a framework for systems analysis, partnership work is coordinated, research outputs are synthesized and communicated well, and the program is linked with key basin, national and regional policy and dialogue processes.

Key Activities:

- Develop overall analytical framework to guide work of ARP-SDIP2 and integration with SRFSI
- Convene Steering Committee and relevant working groups
- Manage coordination, contracts and work planning with all partners
- Organise relevant synthesis, systems analysis and dialogue workshops
- Identify and respond to key opportunities for policy engagement at basin and regional scales
- Guide the development of necessary analytical studies
- Engage in key forums and spaces for supporting informed policy dialogue
- Develop communication materials for SRFSI and SDIP
- Ensure monitoring and evaluation and reporting to DFAT

Lead: ACIAR team (Research Program Manager for Water and Climate (RPM), Program Manager (PM), Project Coordinator (PC))

Key Partners: UNISA; IFPRI; CIMMYT and others as identified

Delivery Mechanisms:

A small ACIAR management team will work closely to guide the overall project. This team will facilitate the implementation and reporting of ARP-SDIP2 activities under the leadership of the RPM. The PC will be the main link between ARP-SDIP2 and regional stakeholders, with primary responsibility for regional liaison, policy dialogue and engagement, and strategic linkages. The PM will support the PC, and be the main coordination point between partners within SDIP (including between SRFSI and SDIP2), with primary responsibility for operational planning, management and reporting, monitoring and evaluation, and coordinated communications across projects.

The ACIAR management team will liaise closely with the Steering Committee for inputs and guidance on the overall strategy for SDIP2.

5.2 COMPONENT 2: REGIONAL FOOD SYSTEMS FORESIGHT AND DIALOGUE

Objective: Improve collaboration between key regional partners to strengthen understanding of longer term food systems changes, the implications for food, water and energy security and transformational opportunities, particularly in the context of gender and climate change.

Key Activities:

- Synthesis of currently available key information on options for transformation of food systems in the region, and identification of key gaps
- Analysis of ‘megatrends’
- Engagement between key players on how foresight relating to food, water and energy could be strengthened and better incorporated into policy processes
- Organise and host a regional foresight training event in 2018
- Organise and host a series of targeted Policy Dialogues on particular topics (to be agreed)

Lead: Dr Jim Woodhill; ACIAR SDIP Project Coordinator; Regional Foresight Working Group

Key Partners: CG System; GFAR; TAF; FAO; Regional think tanks/universities; CSIRO; UNISA; DFAT Agriculture Group

Delivery Mechanism:

A series of foresighting activities will be conducted to generate a set of systems scales questions and framing questions that need to be answered, particularly in relation to gender and climate change. For example, these integrated activities will explore the big changes likely to occur in the region and the implications for women in agriculture, and explore strategies for moving forward.

The identification of interested and relevant groups/institutions/individuals will form the first stage of the foresight work, ensuring a diverse but complementary set of experiences and expertise. A combination of synthesized existing information, modeling tools and dialogue will be used to explore different opportunities with two groups (constituting 50% women):

- A Regional Partnership Working Group to build capacity for integrated thinking, guide overall project direction, help identify topics, find appropriate participants.
- A longer term Regional Think Tank, to consider long term aspirations (by country and/or by region), the processes for achieving these in the long term, and the opportunities and risks associated with such pathways.

A series of Policy Dialogues will be held focusing on topics to be defined from foresighting activities and/or in conjunction with other components. Draft working papers and policy briefs of these issues and questions will be prepared based on meeting discussions. For example:

- Policy Dialogue 1 could focus on the bigger picture around the Happy Seeder work – specifically the questions about public vs private benefits; and how concerns about the Delhi smog situation could be used to leverage adoption of CASI. This follows on from the WWF meeting in November.
- Other possible topics could include cross-scale water impacts from adoption of CASI and how these translate into the policy domain, or the impacts of solar technologies
- Pick up on existing policy debates to see what could be added from a more comprehensive food systems approach.

Regional training in foresighting and food systems will be conducted based on partner interest, to build capacity and map out the main issues at a regional level. Towards the end of the phase, a regional foresighting event will be held to present work to a wider audience, and link with global initiatives such as the Foresight4Food group.

5.3 COMPONENT 3: POLICY AND INSTITUTIONAL INNOVATIONS FOR SCALING

Objective: To create a more conducive enabling environment for sustainable food systems by building capacity within district, state and national agencies in the EGP to identify and promote institutions that foster successful intensification, integrated decision making and inclusiveness in agriculture.

Key Activities:

- Comprehensive mapping of the array of institutions that influence farm-level choices across local and district scales, against the specific national objectives of increased intensification, integrated decision making and inclusiveness respectively. This requires an investigation of the full suite of policies and programs that shape farmer choices in the region.
- Using a sub-set of domain examples, empirically scrutinise the performance of different institutional designs and their related hierarchies. The domains will cover information transfer; water management options under different rights and tenures; and risk management. Specifically:
 - The institutions that shape how information about new technologies, their effectiveness and profitability is transmitted to farmers, including the gender-sensitivity of different models of information transfer;
 - Alternative property right arrangements for water and how this is related to the use of other inputs; and how wider hydrological requirements might be integrated into farm-level choices through attenuating property rights. This includes how these would optimally be treated differently for different groups (e.g. landholders versus tenants; women farmers versus men);
 - Climatic and market risk and uncertainty, and the capacity of different institutional arrangements to help farmers deal with these.
- Drawing from the empirical work from each domain, work collaboratively with state and district authorities to develop a set of guidelines for shaping institutions that effectively transmit information that encourages farmer adaptation by both men and women and in different settings; strikes a balance between private and public interest in the exploitation and use of water resources; and fosters resilience to climatic and market variations.

Lead: University of South Australia (Professor Lin Crase)

Key Partners: IFPRI; Bangladesh Agricultural University; FAO

Delivery Mechanisms:

This component seeks to build on the existing understanding of the benefits of intensification (CASI), to consider the interactions with integrated decision making generally and the need for inclusiveness. It will do this through an institutional lens, focusing on the rules, conventions and intermediaries (government, market-based and civil society) that link policy proclamations to on-ground choices by farmers. The specific areas of interest include institutional arrangements to optimise knowledge transfer with a focus on gender-sensitive options, water rights (in particular for women and tenant farmers) and responses to risk and uncertainty. The project will first develop a broad institutional map focusing on the three domains identified. The institutional map and the methods of

analysis developed and road-tested as part of this component can be deployed to other areas of interest in the EGP as the need arises.

Institutional influences are mediating factors that reside between the policy ambitions set at national and state levels and the incentives and choices actually faced by farmers. The research seeks to uncover how those mediating forces operate and particularly the extent to which they (a) support the policy ambition; and (b) allow and support integration of other objectives consistent with poverty alleviation in the EGP. In this regard, the overall aim is to influence those who can control and modify the institutional architecture. In some cases this will be policy makers but in other instances the licence to make change is vested within the implementing/influencing institution itself. For that reason, the strategy involves engagement with both key personnel within implementing institutions and policy-makers operating in the region.

To harness knowledge from this group and to gain influence from the research, three sub-project steering committees will be developed, each with a focus on the specific area of interest (knowledge transfer; water property rights; risk). An overarching project steering committee will be assembled by drawing representation from each of the sub-project committees. The project steering committee will include (a) experts with a broader interest in integration (i.e. beyond the specific area of interest of the sub-committee) and (b) experts with an understanding and interest in gender inclusiveness.

5.4 COMPONENT 4: FIELD SCALE INNOVATION AND SRFSI CONTINUATION

Objective: To optimise the learning from scaling field scale activities under the SRFSI project, and as a link to local engagement and impact for two-way flow of information.

Key Activities:

- Undertake a review of the SRFSI project
- Set priorities for the next steps in CASI in the context of ARP-SDIP2 goals; in particular, synthesis of gender work (e.g. household impacts for women and men; barriers to women's adoption of CASI) to feed into policy and foresight activities
- Identify emerging issues as a result of wider scale adoption of CASI, including biophysical, institutional and policy level constraints and opportunities
- Link field scale outcomes and impacts into policy and foresight work, and vice versa

Key Partners: CIMMYT and existing SRFSI partners

Delivery Mechanisms:

This component will be primarily delivered by the existing SRFSI project team, as the continuation of SDIP1. This work will be supplemented by the Happy Seeder SRA funded under Component 5. The ACIAR management team will work to ensure that this component acts as a link between policy and foresight level work and the local level for two-way flow of information.

5.5 COMPONENT 5: ANALYTICAL STUDIES

Objective: To fill critical knowledge gaps through analytical studies on priority topics that require further investigation to support overall project objectives.

Key Activities:

- Identifying priority areas for analysis
- Undertaking analysis of primary and secondary data
- Undertaking critical modeling work
- Indicative Topics:
 - Scaling up use of mechanization, including access and energy issues.
 - Long term implications of ground water exploitations in context of climate change
 - Optimizing irrigation use and efficiency and linkages with solar pumping technologies
 - Comparative assessment of subsidy mechanisms across South Asia and implications for scaling CASI
 - Understanding the heterogeneous status of women in agriculture across the EGP
 - Critical gender considerations for scaling of CASI
 - Markets and trade
 - Climate change – implications for production

Lead: ACIAR management team (RPM WaC, PM, PC)

Key Partners: Dependent on expertise required, includes existing SRFSI partners and new partners

Delivery Mechanisms:

Critical topics will be identified from SDIP Phase 1 work, and from components 2, 3 and 4. Topics will be prioritized by the Steering Committee.

This component will work as a flexible research fund, with research grants of up to AUD \$250,000 made to appropriate research institutions or coalitions for work on priority issues. Some resources will be kept to enable emerging work to be followed up on as required.

APPENDIX 1 RELEVANT ACIAR RESEARCH PROJECTS IN SOUTH ASIA

Project	Relevance and potential linkages
Previous SDIP projects	
<i>CSE/2017/101 Value chain and policy interventions to accelerate adoption of Happy Seeder zero tillage in rice-wheat farming systems across the Gangetic Plains</i>	This Small Research Activity (SRA) aims at accelerating the adoption of zero till (ZT) seed drills in two regions (Haryana/Punjab and the EGP), building on the work under SRFSI. The project will focus on understanding constraints to ZT adoption, and will inform policy makers and the private sector to help create a conducive policy and market environment for adoption of ZT.
<i>CSE/2016/037 Informing policies for removing barriers to scaling conservation agriculture based sustainable intensification in the Eastern Gangetic Plains</i>	This SRA was funded as a precursor to work under SDIP2. Its aim was to develop a detailed proposal for scaling of CASI approaches. Specifically, it identified and mapped farming systems for targeting the scaling of CASI in the EGP; conducted preliminary analysis and documentation of policy and institutional field constraints to CASI in the EGP; and designed field activities to test potential policy instruments. These outputs may be useful in linking micro and macro level activities within SDIP2.
<i>ADP/2016/026 Sustainable and resilient farming systems intensification policies</i>	This SRA was funded as a precursor to work under SDIP2. It provided a useful foundation for understanding some of the impediments to increasing the scale of CASI and also highlighted the potential widespread gains from removing policy constraints. The role of policies tied to mechanisation, water management, supply chains, diversification, energy use in agriculture and women were all highlighted by this work. There is now a need to follow-up on these initial insights, especially with detailed empirics at a scale that explains the institutions that lie underneath policy.
<i>CSE/2011/077 Sustainable and resilient farming systems intensification in the Eastern Gangetic Plains</i>	SRFSI is an on-going project funded under SDIP Phase 1 (May 2014 – June 2019), and underpins the work proposed in SDIP2. It has focused on the potential contribution of Conservation Agriculture based Sustainable Intensification (CASI) approaches to improving agricultural productivity, household profitability and sustainability for smallholder farmers; and on local institutional innovations to support and accelerate the uptake of improved management practices. The project has examined areas including crop system diversification and optimisation; zero and minimum till approaches (including use of the Happy Seeder direct drill); options for mechanisation; improved water management; access to markets; and gender gaps in technology adoption. SRFSI 1 has provided a valuable evidence base for the advancement of CASI. In SDIP2, links with this project will optimise the learning from scaling field scale activities under the SRFSI project, and as a link to local engagement and impact for two way flow of information.

Other ACIAR projects	
LWR/2016/136 <i>Nutrient management for diversified cropping in Bangladesh</i>	The project aims to increase the profitability and sustainability of intensive and emerging cropping systems in Bangladesh through improved nutrient management. It will develop and test tools for sustainable nutrient management for intensively cropped areas of north-west Bangladesh, emerging cropping systems based on conservation agriculture (CA) and for coastal zone soils of southern Bangladesh; and out-scale the use of tools and inform the development of fertiliser policies to improve fertiliser use efficiency through engagement with women and men in farmers' groups, extension officers, and the private sector.
LWR/2014/073 <i>Cropping system intensification in the salt-affected coastal zones of Bangladesh and West Bengal, India (CSI4CZ)</i>	The project aims to sustainably increase cropping intensity and productivity in the coastal zones of Bangladesh and West Bengal particularly in the dry (Rabi) season through integrated soil, water and crop management. The aim is to identify and test superior cropping options and polder water and salt management strategies through field evaluation and co-learning with farmers.
LWR/2014/072 <i>Promoting socially inclusive and sustainable agricultural intensification in West Bengal and Bangladesh (SIAGI)</i>	This project examines the impact of agricultural intensification on socially disadvantaged groups, such as landless or marginal smallholders, women-headed households, and tribal minorities. It aims to identify opportunities to manage risk and promote social inclusivity and equity under different agricultural development scenarios; and to promote the development of socially inclusive, equitable and sustainable agricultural intensification policies and engagement processes. The project works closely with and shares field sites with ACIAR projects researching new on-farm practices in the EGP.
ADP/2014/045 <i>Efficient participatory irrigation institutions to support productive and sustainable agriculture in south Asia</i>	This project has the scope to seamlessly link and improve the proposed program of work. It is partly based in Bihar and focuses on institutional constraints to improved water management. The project shares some personnel as well as researchers from the proposed commissioned organisation, thereby enhancing the prospect of operational synergies. The relationship between FEW and efficient participatory water institutions will be explored as part of the proposed project and an overlapping interest in gender issues attends both projects.
LWR/2012/079 <i>Improving water use for dry-season agriculture by marginal and tenant farmers in the Eastern Gangetic Plains</i>	This project provides basic research on systemic issues such as land tenure and effects of migration (feminisation, labour shortage and remittances) and technological research in development of low cost pumping and irrigation options to address the reality of multiple uses of water supplies and small-scale water supply options, especially domestic and agricultural needs of women. It shares important synergies with SDIP2 activities, with opportunities to integrate water management technologies and understand their scale implications through the proposed work.
LWR/2010/080 <i>Overcoming agronomic and mechanisation constraints to development and adoption of conservation agriculture in diversified rice-based cropping in Bangladesh</i>	This project provides much relevant experience for sharing with the region, and has interacted with the SRFSI project, with some common objectives and one shared location.

<p>LWR/2010/033 <i>Developing capacity in cropping systems modelling to promote food security and the sustainable use of water resources in South Asia</i></p>	<p>The SRFSI project has benefited from linkages with scientists in the EGP trained in the use of APSIM through this CSIRO managed project with the South Asian Association for Regional Cooperation (SAARC). This project aimed to develop systems analysis and modelling capacity within SAARC agricultural research organisations and thereby allow them to undertake more effective research, capacity that will be sought for incorporation into the SRFSI modelling and scenario analysis activities.</p>
<p>CIM/2009/038 <i>Introduction of short duration pulses into rice-based cropping systems in western Bangladesh</i></p>	<p>This project has provided valuable information in relation to good rotations, increased cropping intensity and diversification.</p>
<p>LWR/2008/019 <i>Developing multi-scale climate change adaptation strategies for farming communities in Cambodia, Lao PDR, Bangladesh and India.</i></p>	<p>Valuable experience with farmer climate clubs, farmer typologies and crop modelling in shared locations.</p>
<p>CIM/2007/122 <i>Sustainable intensification of rice-maize production systems in Bangladesh</i></p>	<p>This project focused on developing rice-maize systems in Bangladesh, which also has relevance to Bihar. This project ended in 2013, and relevant elements of the research, as well as some of the research team, were incorporated into the SRFSI.</p>
<p>CSE/2004/033 <i>Zero-tillage rice establishment and crop-weed dynamics in rice and wheat cropping systems in India and Australia</i></p>	<p>In the context of the transfer and adaptation of CA technologies from the NW India to the East (as requested by ICAR), the results of this project are of direct relevance, as are the capacity built for eastern Indian professionals in the north-west of India.</p>