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**Collaborative Adaptation Research Initiative in
Africa and Asia
Summative Evaluation**

Final Report

Submitted by: Le Groupe-conseil baastel ltée

Requested by: International Development Research Centre

October 24, 2018

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Executive Summary

Background

The Collaborative Adaptation Research Initiative in Africa and Asia (CARIAA) is a research program designed to bridge gaps between knowledge, policy and practice in climate change adaptation responses by providing a platform for research collaboration across regions, sectors and disciplines. It is jointly funded by Canada's International Development Research Centre (IDRC) and the United Kingdom's Department for International Development (UK DFID). The program initiated in 2012 and will come to an end in 2019. Its budget totals CAD\$70 million.

CARIAA attempts to build the resilience of vulnerable populations and their livelihoods in three hotspots (semi-arid regions in Africa and parts of South and Central Asia; deltas in Africa and South Asia, and glacier and snowpack dependent river basins in the Himalayas) by supporting collaborative research on climate change adaptation to inform policy and practice. CARIAA organizes research around four consortia that bring together more than 450 researchers and postgraduate students affiliated with 19 member institutions and more than 40 partner organizations. Each consortium focuses on research related to one of the three climate change hotspots selected by the program¹. Two of the consortia cover semi-arid hotspots (ASSAR and PRISE), one covers deltas (DECCMA) and one covers glacier and snowpack dependent river basis (HI-AWARE).

CARIAA's goal is "to develop robust evidence to inform how to increase the resilience of vulnerable populations in climate change hotspots in Africa and Asia". It has three main objectives: (1) generate knowledge, (2) promote research uptake, and (3) strengthen the cadre of researchers in this field.

Scope and methods of the evaluation

The summative evaluation had three objectives, using a gender-analysis lens throughout the process: (1) to assess the quality of the research funded by CARIAA; (2) to assess progress towards achieving the objectives and outcomes of the program and identify any impact-level achievements so far; and (3) to highlight aspects of the program that either would need further funding to be completed given the promising nature of the outcome or impact, or areas of research that could generate potential investments. The evaluation covers the period ranging from the beginning of consortium activities in 2014 to approximately December 2017 (some research products from the first quarter of 2018 and activities conducted up to July 2018 to promote the second objective of the program were also included). The focus of the evaluation is on relevance, outcomes and sustainability, with a view to making recommendations about future work around CARIAA's outcomes and further research on climate change adaptation. It also assesses the quality of research but does not cover efficiency.

¹ Hotspots are defined as "an area where a strong climate change signal is combined with a large concentration of vulnerable, poor or marginalized people".

The main challenge faced by the evaluation team relates to the difficulty of evaluating a program that is still ongoing. Research outputs were considered until the end of February 2018, and some papers under preparation, reports and events were also considered beyond that date.

The assessment: findings and conclusions

The evaluation concludes that the program was a positive and worthwhile investment given that it produced high quality research, in general very innovative given the prevailing context and very relevant to advance current or future adaptation measures or to assist decision making based on credible evidence in the geographies it was conducted. With regards to the program's logframe, CARIAA has achieved and often surpassed all of the milestones that were established for 2018: From the perspective of achieving what was promised, the program has shown solid effectiveness. The investment, which was relatively small for each institution level, allowed 19 main organizations to produce 10-20 research papers each, to influence a series of policies and plans, to conduct extensive capacity building and to allow a variety of key development stakeholders in each country and hotspot covered to actively participate in the program. This research is considered foundational work on many topics as it has the potential to spearhead new areas of research and to influence the discussions and decisions on climate change for years to come in the geographies targeted and beyond.

- 1) **Did the program produce high quality research? *The program has generated a large volume of research and its quality received an overall rating of very good according to the RQ+ assessment.***

Between March 2014 and March 2018, CARIAA delivered a large number of research outputs (over 600) under various forms, ranging from data products to blog posts and conference papers, including 62 papers published in peer-reviewed journals. Several products are still being prepared.

Applying the RQ+ to the selected themes, the evaluation concluded that the overall RQ+ rating for CARIAA is **very good**. The dimensions were assessed from **Good** on Legitimacy and Positioning for use to **Very good** on Integrity and Importance/relevance.

- 2) **Is the program on track to achieving outcomes and impacts? *Yes. Some immediate actions are necessary to ensure accomplishment of outcomes (see recommendations below)***

a) Within CARIAA's sphere of influence: outcomes

CARIAA researchers have started to succeed in having their research used, particularly through influencing a diverse set of policies and plans. The evaluation team identified that CARIAA has contributed (to different extents) to the development of over 20 local or national plans and strategies, and to over a dozen policies in 11 countries that now are using research and credible evidence for decision-making. CARIAA has also used research to improve capacities at many levels, from increasing awareness of policy makers and communities about climate change impacts and adaptation options to improving curricula of formal training platforms thus setting the ground for training a new generation of



researchers and institutions. The inclusion of Master and PhD students and junior researchers in consortia's research teams was also an important long-term investment in capacity building.

There are a few examples of influence on practitioners, such as on-the-ground development NGOs or industry-wide players or professional associations.

CARIAA delivered or communicated research through different methods, which was often successful with policy-makers. This is remarkable given that it is a departure from most research institutions' typical practice of presenting research mostly to their own research community. There remain gaps to fill in terms of means and strategies for achieving this, while the audience targeted remains unnecessarily narrow.

The program has a good to very good level of incorporation of gender and social inclusion issues, with some minor weaknesses, both as per the Gender Assessment Framework and the other indicators of social inclusion considered.

Several features of the program structure supported the achievement of outcomes. One of them was the flexibility to adjust to changing conditions or to respond to unexpected demands. The collaborative model reinforced partnerships within each consortium, brought new ways of doing research, and caused institutions to mainstream topics such as migration and gender. It allowed for local expertise to access global climate change adaptation discussions and built capacities for new climate change adaptation researchers. The benefits of the collaboration that has taken place in CARIAA over the years - collaboration across institutions, but also across countries, disciplines and thematic areas – are substantial.

There is still a significant amount of research to be produced/finalized which would have the potential to be used for decision making and capacity building. The breadth of achievements varies from country to country, and in some countries research has yet to achieve uptake.

The program has generated important lessons on the implementation of Research-into-Use (RiU), an essential approach in the area of climate change adaptation where there should be an urgency to transition from research to decisions, policies, strategies and action plans that are based on credible research. These lessons include the importance of timing (having and offering the research when needed), of having specific RiU expertise in the team; and of the reputation of the research institutions involved. RiU also requires the translation of research into useable pieces of information and the identification and pursuit of entry points into the policy development process.

b) Beyond CARIAA's influence: potential impact

The evaluation found limited examples in which communities are already making decisions based on the evidence generated by the CARIAA research. The RiU approach as well as the capacity-building efforts are valuable investments in advancing the uptake of research on climate change adaptation but they will take time to produce impacts. Nevertheless, the evaluation found that many of the outcomes, particularly those related to influencing policies, strategies and plans at all levels and the investment in

capacity building have a good likelihood of achieving impact, with time. The use of pilots provided an opportunity to transform research findings into actual adaptation measures in Pakistan, Bangladesh, India and Nepal. Large-scale impact of these pilots depends mostly on the consistency in Government and others responses for scaling-up.

The evaluation team also identified missed opportunities. Stakeholders such as development practitioners or communities were not targeted as strongly, and when they were, time and resources for medium-term engagement could not always be invested, which limited potential impacts.

Recommendations

The following recommendations are directed particularly at CARIAA management and its two donors, IDRC and DFID, rather than any particular consortium. They intend to ensure that the program achieves its outcomes and improves the likelihood of achieving its impacts in the longer term. They are also intended for donors, investment and research communities interested in building on the successes and opportunities set forth by CARIAA.

Research into Use	<ol style="list-style-type: none"> 1. In the short term, the program should strengthen its focus on translating the research that has been completed and validated into communication pieces that are useful for policy makers, capacity building and for practitioners. 2. It should bring into the program for the last few months expertise from large research institutions/think tanks and networks of local NGOs in the CARIAA participating countries active in the policy and on the ground. 3. IDRC and DFID should increase their efforts to communicate internally and to their development assistance programs the findings, results, evidence and opportunities arising out of CARIAA.
Capacity development for communication / dissemination and knowledge management	<ol style="list-style-type: none"> 4. Much still needs to be done to communicate the impressive research and evidence coming from CARIAA. In the last stretch of the program, CARIAA should bring expertise on how to communicate and disseminate scientific information and provide training to the researchers. 5. There should be an overarching outward-oriented knowledge management strategy.
Converting research and evidence into pilots to be tested	<ol style="list-style-type: none"> 6. The program should select a few research outputs and transform them into pilots or demonstration solutions that can be tested and documented in the short term.
Converting research and evidence into packages for development investment	<ol style="list-style-type: none"> 7. In the next few months, CARIAA should provide support to consortia to bring on board the skills that will help them translate research, evidence and even tested pilots into business models that can be presented to investors, financiers and venture capitals.
Gender	<ol style="list-style-type: none"> 8. Given that “gender, migration and climate change” is still an emerging field of research, CARIAA should actively participate in the international debate about this topic, bringing their research and evidence.
Future programs	<ol style="list-style-type: none"> 9. <u>How can we learn faster than climate changes?</u> Any future program on climate change adaptation research should focus on ensuring that learning, at all levels, is ahead of the changes in climate that are already taking place. CARIAA’s experience should be an inspiration in responding to that question and should be further recorded and analyzed for future learning.



Promising Opportunities

The evaluation team was asked to consult with different internal and external stakeholders to identify ideas: (1) in the short-term horizon outcomes that could benefit from an extension of CARIAA relying on the existing relationships and structure of the program (6 months to 2 years); (2) in the medium term horizon, those outcomes that given the experience of CARIAA warrant a broader conversion beyond CARIAA and (3) new research questions identified in CARIAA's research that could be addressed in future programs or a new call for reconfigured consortia. The team would like to invite the management of the program and each consortium to develop a transparent process (as proposed in one of the recommendations before) to identify the areas that would benefit the most from a short term extension of CARIAA.

a) Outcomes that would benefit from a short-term extension of CARIAA (6 months to two years)

Most of these areas revolve around optimizing the use of the research and evidence as well as bringing to the consortia special expertise that may have been lacking.

Completing research through a prioritization process	The program is still producing research results, with an impressive pipeline of draft research products. It would be good to support their full publication process.
Research into Use	The program should prioritize a few activities for additional funding and time that could maximize the implementation of the RiU approach, considering lessons that have been identified in the last 2-3 years of the program and striking a balance between uptake and influence at different levels.
Capacity development	Immediate attention to build capacity on how to identify financial resources to support further research or to implement/finance pilots.
Improving and sustaining the achievement of expected outcomes	<p>Several activities under CARIAA were affected by the changes in budget allocations due to the exchange rate fluctuations. They should be reconsidered.</p> <p>Select a few of the policies or strategies that have been influenced and encourage consortia to translate them into concrete actions in different sectors and/or at different levels (e.g. districts).</p> <p>Selecting key research outputs and transforming them into pilots or projects at local level involving different partners</p>

b) What CARIAA research would warrant a broader discussion beyond CARIAA?

Results that would require continuity in order to realize their potential	<p>Effective adaptation around cultural norms, different landscapes, rural-urban continuum, how to measure it, issues of scale, how to avoid maladaptation</p> <p>The design and use of creative tools for Research into Use</p> <p>Transversal or related topics such as intersection of gender, food security, empowerment and leadership and climate change</p>
Opportunities for upscaling or replication identified	Few cases were identified as having potential, at this point, for upscaling and replication.

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by research and other CARIAA products	
Research that has concluded but needs more time to realize outcomes or impacts	<p>Some of the research needs to make links to new stakeholders different from the ones presently included in the consortium (or the program) particularly to help package the evidence into business ventures or adaptation programs.</p> <p>Some of the more complex, integrated research between culture and adaptation, ecosystems and natural resources management and adaptation, value chain, governance and adaptation, or gender and adaptation would benefit for further research and application through pilots or demonstrations before they fully realize outcomes</p>

c) New research questions/areas emerging from CARIAA

New areas of research	<p>Identify other hotspots around the world and expand research in these regions using the experience, approaches and methodologies developed under CARIAA</p> <p>Analyze the impact of the investment made on capacity development at the individual and institutional levels within each consortium but also through academic programs</p> <p>Develop tools for measuring behavioural change, and design research aimed at better understanding how to promote change in institutions, communities, private sector.</p> <p>Efforts are still needed to translate the concepts in climate change science, to fill knowledge gaps, bridge the divide between scientific knowledge and local knowledge, and link impacts to adaptation options in context-relevant ways</p> <p>Provide economic evidence on the current and future costs associated with climate variability, predicted climate change, and different adaptation pathways</p>
Adaptation measures	<p>The use of science-based adaptation measures for delivering better current or future services to individuals, communities and ecosystems.</p> <p>The impacts within the informal economy, which represents a significant part of the economy in many countries, and one in which women are disproportionately represented</p> <p>The interplay between adaptation and conflict, and conflict management approaches (e.g., current and future conflicts around water or natural resources)</p> <p>Collective action connecting adaptation, governance and equity</p>
Ways of working in climate change adaptation	<p>How to further promote additional strategic partnerships between research and non-research organizations working on the ground on climate change adaptation and with policy makers</p> <p>Research institutions could more pro-actively engage with development actors, and offer support to analyze successful adaptation programs, identify key success factors in these programs, in terms of approaches, community and policy engagement, resource allocation, management and leadership styles, etc.</p> <p>Develop learning approaches within the scientific community to promote and strengthen transdisciplinarity across disciplines, institutions and contexts in adaptation research.</p>



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Acronyms

Acronym	Definition
ALR	Annual Learning Review
ASSAR	Adaptation at Scale in Semi-Arid Regions
CARIAA	Collaborative Adaptation Research Initiative in Africa and Asia
CBA	Community-based Adaptation
Co-PI	Co-Principal Investigator
DECCMA	Deltas, Vulnerability and Climate Change: Migration and Adaptation
DFID	United Kingdom's Department for International Development
EBA	Ecosystem-based Adaptation
HI-AWARE	Himalayan Adaptation, Water and Resilience
ICIMOD	International Centre for Integrated Mountain Development
IDRC	Canada's International Development Research Centre
IPCC	Intergovernmental Panel on Climate Change
IWFM	Institute of Water and Flood Management
INDC	Intended Nationally Determined Contributions
NGO	Non-governmental organizations
ODI	Overseas Development Institute
OSF	Opportunities and Synergies Fund
PI	Principal Investigator
PMU	Program Management Unit
PRISE	Pathways to Resilience in Semi-Arid Economies
PSA	Participatory Scenario Analysis
RiU	Research into Use
RQ+	Research Quality Assessment
SME	Small and Medium Enterprises
ToC	Theory of Change
TSP	Transformative Scenario Planning
UCT	University of Cape Town
VRA	Vulnerability and Risk Assessments
WP	Work Package



1. Introduction

1.1 Overview of CARIAA

The Collaborative Adaptation Research Initiative in Africa and Asia (CARIAA) is a research program designed to bridge gaps between knowledge, policy and practice in climate change adaptation responses by providing a platform for research collaboration across regions, sectors and disciplines. It is jointly funded by Canada's International Development Research Centre (IDRC) and the United Kingdom's Department for International Development (UK DFID). The program initiated in 2012 and will come to an end in 2019². Its budget totals CAD\$70 million.

CARIAA attempts to build the resilience of vulnerable populations and their livelihoods in three hotspots by supporting collaborative research on climate change adaptation to inform policy and practice. CARIAA takes a unique approach by organizing research around four consortia that bring together more than 450 researchers and postgraduate students affiliated with 19 member institutions and more than 40 partner organizations. Each consortium focuses on research related to one of the three climate change hotspots selected by the program, where hotspots are defined as "an area where a strong climate change signal is combined with a large concentration of vulnerable, poor or marginalized people"³. The hotspots selected were:

- 1) Semi-arid regions in Africa and parts of South and Central Asia;
- 2) Deltas in Africa and South Asia; and
- 3) Glacier and snowpack dependent river basins in the Himalayas.

Through this hotspot approach, the CARIAA program supports research and collaboration across different type of institutions based in Africa, Asia and Europe on climate change impacts, adaptation and research in use. The research and collaboration are expected to yield new analytical approaches, evidence and innovative opportunities for potential scaling up and out to national, regional and cross-continental scales. The integration of gender into research undertaken under CARIAA is an additional and essential contribution to gender-responsive adaptation.

The CARIAA program is delivered through four Research Consortia, two covering semi-arid hotspots and one each covering Deltas and glacier and snow-pack dependent river basis. The consortia are:

² The support to consortia ends in November 2018 and CARIAA ends in March 2019

³ Ken De Souza, Evans Kituyi, Blane Harvey, Michele Leone, Kallur Surbrammanyam Murali, James D. Ford, « Vulnerability to climate change in three hot spots in Africa and Asia : key issues for policy-relevant adaptation and resilience-building research », 2015.

Table 1. Overview of CARIAA consortia

Consortium	Focus	Lead Institution	Hotspot	Countries
Adaptation at Scale in Semi-Arid Regions (ASSAR)	Aims to develop a unique and systematic understanding of the processes and factors that impeded adaptation and cause vulnerability to persist	University of Cape Town (UCT), South Africa	Semi-arid regions in Southern, East and West Africa and South Asia	Botswana, Ethiopia, Ghana, India, Kenya, Mali and Namibia
Deltas, Vulnerability and Climate Change: Migration and Adaptation (DECCMA)	Applied research on migrations and other large movements of people as a consequence of climate change in deltas and the opportunities and challenges they create for sustainable development	University of Southampton, UK	Deltas: Ganges-Brahmaputra-Meghna, Volta and Mahanadi	Bangladesh, Ghana, India
Himalayan Adaptation, Water and Resilience (HI-AWARE)	Enhancing the climate resilience and adaptive capacities of the poor and vulnerable people living in the Indus, Ganges and Brahmaputra basins	International Centre for Integrated Mountain Development (ICIMOD), Nepal	Glacier and snowpack dependent river basins in the Himalayas	Bangladesh, India, Nepal, and Pakistan
Pathways to Resilience in Semi-Arid Economies (PRISE)	Minimising the risks and maximizing the opportunities that climate change presents for the economic development of semi-arid lands	Overseas Development Institute (ODI), UK	Semi-arid areas in West and East Africa and South and Central Asia	Burkina Faso, Kenya, Pakistan, Senegal, Tajikistan, Tanzania

According to the project document, CARIAA's goal is "to develop robust evidence to inform how to increase the resilience of vulnerable populations in climate change hotspots in Africa and Asia". It has three main objectives:

1) Generate knowledge on:

- Vulnerability - Develop a better understanding of the conditions leading to vulnerability to climate change including under different socio-economic scenarios and climate warming scenarios;
- Adaptation approaches – Learn from adaptation approaches in different regions and contexts and conduct a comparative analysis to obtain evidence that informs adaptation;
- Factors of success/sustainability/barriers/accelerators - Develop a better understanding of how to ensure sustainability of adaptation/resilience measures by identifying barriers and elements of success in different contexts;

2) Promote research uptake:

- Policies and practices - Shape policies or practices that help vulnerable populations or sectors adapt to climate change from evidence generated at various scales;

3) Strengthen the cadre of researchers in this field:

- Adaptation expertise - Further develop highly qualified personnel and establish informal networks that enhance problem-solving capacity in adaptation to climate change and resilience building.⁴

CARIAA's Theory of Change (ToC) and logical framework identify the program's expected impact as (Annex I):

"Key stakeholders, including the most vulnerable communities have the capacities (institutions, systems, practices and skills) to enable them to make evidence-based choices for coping with current variability and potential future impacts of climate on development."

And its expected outcome as:

"Actors in planning, programme, policy and research use a range of evidence-based, tested options to enhance and support communities' livelihoods in 'hot spot' regions in the face of climate challenges, now and in the future, in ways that benefit the most vulnerable women and men."

Each consortium developed its own ToC or logical framework, based on CARIAA's ToC and logical framework.

Each consortium was composed of numerous partner organizations spread across different countries and continents. Their approaches to implementing research were therefore specific to each consortium, and affected the way they produced outputs and achieved outcomes and impacts. Each of the consortia had a lead institution with a Principal investigator (PI) and 4-5 key partners, each with co-Principal Investigators (Co-PI). Financial arrangements were also particular to CARIAA since for the most part, each of the partners in the consortia had financial arrangements/contracts with IDRC directly and not with the lead consortium agency. The Program Management Unit (PMU) is the team that oversees day-to-day implementation of CARIAA, based out of IDRC Headquarters and from its Regional Offices in Nairobi and Delhi. The Program Management Committee (PMC) included the coordinators and of the PIs of all consortia, and met on a regular basis to review progress and discuss budget issues. Highlights of the priority topics that each consortium focused on are:

Table 2. Priorities of CARIAA's consortia⁵

<p>ASSAR</p>	<p>ASSAR's main research question (revisited in 2016) is: <i>"What are the barriers and enablers for effective medium-term (2030 and beyond) adaptation and what responses enable more widespread, sustained adaptation?"</i></p> <p>Research is implemented through 4 research streams: (i) Social and gender differentiation; (ii) Governance; (iii) Ecosystem services; and (iv) Knowledge systems.</p> <p>ASSAR is working on 6 cross-regional synthesis topics: (i) changing household structures and adaptation; (ii) changing land-use-Land-cover (LULC) in semi-arid regions of Africa and India; (iii)</p>
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⁴ CARIAA Program Document, 2012

⁵ Annual Reports from consortia, submitted in April and May 2018.

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	<p>water governance through an adaptation lens: understanding local and sub-national perspectives;(iv) perceptions of local people on impacts and management of invasive species for adaptation; (v) are changes in the availability of ecosystem services influencing gender-based responses to climate change?; and (vi) migration; and 4 high-level ASSAR synthesis topics: (i) evidence on barriers and/or enablers that prevent/support adaptation; (ii) recommendations on how effective adaptation is defined and measured; (iii) what insights can ASSAR research bring to discussions of transformation in CCA?; and (iv) reflections on researching adaptation (including learning on uptake).</p>
DECCMA	<p>DECCMA has 7 project objectives/main questions: (i) Governance mechanisms that promote or hinder migration of men and women in deltas; (ii) Climate change impact hotspots in deltas where vulnerability will grow and adaptation will be needed (iii) Conditions that promote migration and its outcomes, as well as gender-specific adaptation options for trapped populations; (iv) Climate-change-driven global and national macro-economic processes impact on migration of men and women in deltas; (v) Integrated systems-based bio-physical and socio-economic model to investigate potential future gendered migration under climate change; (vi) Evaluation of migration within a wide suite of potential adaptation options at both the household and delta level; and (vii) [Identification of] Feasible and desirable adaptation options and support implementation of stakeholder led gender-sensitive adaptation policy choices.</p> <p>Its work is organized in 6 work packages (WP): WP1 – Governance and stakeholders; WP2 – Climate and Biophysical Change in Deltas; WP3 - Climate change drivers of migration; WP4 – Economic modelling of climate change; WP5 – Integrated model to assess adaptation and migration in deltas; and WP6 – Positioning Migration within Adaptation.</p> <p>A significant proportion of the consortium’s work is built around extensive surveys realized across the countries where the consortium is active.</p>
HI-AWARE	<p>HI-AWARE’s main question is: <i>"How to develop timely adaptation measures and approaches to respond to rising temperatures, seasonal shifts in glacier and snowmelt induced runoff, and increased frequency of extreme events in the HKH mountains and floodplains in order to improve the resilience of the livelihoods of the poor and vulnerable women, men and children in the region?"</i></p> <p>Its work is implemented under three WP: WP1 focuses on research on (i) climate change impacts; (ii) drivers and conditions leading to vulnerability; (iii) and innovative climate change adaptation approaches and practices. It is implemented under five research components. WP2 promotes “evidence-based and tested innovative adaptation approaches and practices” and included the development of three pilots in Pakistan, India and Bangladesh. WP3 focuses on “capacity-strengthening of the HI-AWARE research community” and involves essentially supporting students working on their Master or PhD thesis.</p>
PRISE	<p>PRISE’s focus is on “identifying pathways for investment and development that unlocks rapid economic growth, poverty reduction, and climate resilience, simultaneously”.</p> <p>It is implemented through 7 research projects: (i) Migration futures in Asia and Africa: climate change and climate-resilient economic development; (ii) Migration, remittances, adaptation and resilience in arid and semi-arid regions of Senegal and Tajikistan; (iii) Harnessing opportunities for</p>

climate-resilient economic development in semi-arid lands: adaptation options in key sectors; (iv) Enabling environment for private sector/multi-stakeholder action to strengthen resilience to climate change; (v) (a) Property rights, investments and economic development in the context of climate change in semi-arid lands; (b) Institutional factors, land-related investment and vulnerability to climate change; (vi) (a) Cross-boundary multi-scale governance of semi-arid lands: Implications for climate resilience and economic development; (b) Resilience to climate-related shocks and stressors in Kyrgyzstan: developing resilience indicators to predict well-being; (vii) Water governance in semi-arid lands: political and economic insights for the management of variability and extremes in a changing climate.

1.2 Scope, objectives and purpose of the evaluation

1.2.1 Purpose of the evaluation

As CARIAA is into its final year of implementation, this Summative Evaluation requested by IDRC and DFID management has the dual purpose of accountability and learning. The evaluation has three objectives, using a gender-analysis lens throughout the process⁶ as agreed in the evaluation Inception Report:

- To assess the quality of the research funded by CARIAA.
- To assess progress towards achieving the objectives and outcomes of the program and identify any impact-level achievements so far.
- To highlight aspects of the program that either would need further funding to be completed given the promising nature of the outcome or impact or areas of research that could generate potential investments.

1.2.2 Scope of the evaluation

The evaluation covers the period ranging from the beginning of consortium activities in 2014 to approximately December 2017. It should be noted that some research outputs from the first quarter of 2018 are also considered, to more fully capture the actual achievements of the program and in particular for the assessment of research quality (RQ+). As noted later, much research is still in draft, to be reviewed and published before the end of the program and for the most part these pieces are not included. The evaluation team also considered activities linked to assessing the program's outcomes and impacts (e.g., assessment of Research in Use for example) undertaken up to July 2018 specifically within the context of the team's visit to 3 countries (June-July 2018). The evaluation covers the entire geographic spectrum of the program, and encompasses the work of all four consortia as well as program-level work. The evaluation also took into account the phased evaluations (thematic reviews) conducted throughout the

⁶ The evaluation follows the OECD/DAC (2010) "Quality Standards for Development Evaluation" and IDRC's evaluation principles, ensuring appropriate ethical standards and high-quality service. These principles and standards are reflected in the Evaluation Matrix.

implementation of CARIAA (respectively in November 2016, June and October 2017) as well as the findings and conclusions from the evaluation of a previous program, Climate Change Adaptation in Africa conducted in 2012⁷.

The focus of the evaluation is on relevance, outcomes and sustainability, with a view to making recommendations about future work around CARIAA's outcomes and further research on climate change adaptation. It also assesses the quality of research. It does not cover efficiency, since this aspect will be assessed through other mechanisms. This evaluation therefore does not assess program design and implementation, and does not seek comparison between consortia or with other programs. Instead, it focused on a program-level assessment based on CARIAA's ToC and logframe. The logframe and ToC for each of the consortia is considered as relevant to the outcomes and impacts of the program but they will not be assessed separately.

The audience for this evaluation is the program itself, IDRC and DFID management, program managers and consortia, and ultimately the wider climate change adaptation community.

1.2.3 Evaluation Questions

The evaluation questions, as defined in the Inception Report and presented in the Evaluation Matrix (Annex II), are the following:

- **Question 1:** Was CARIAA-funded research high quality?
- **Question 2:** To what extent did CARIAA meet its objectives and intended program outcomes? How do the results of the program connect to its theory of change (within the spheres of control and influence)? To what extent is the program on track to meeting its final intended outcomes?
- **Question 3:** Which results offer particular promising opportunities to realize further impact, whether through additional time, scaling, or replicating elsewhere? What are the most promising outcomes that could be deepened by an extension to CARIAA?

1.3 Evaluation methodology and challenges

On the basis of the evaluation questions, an evaluation matrix (Annex II) was developed that presents the questions, sub-questions, performance indicators, data points, data collection and analysis methods, as well as the key sources that this review covered.

- **Question 1** research quality is assessed on the basis of rubrics aligned to IDRC's Research Quality Plus (RQ+) assessment framework.^{8,9} One theme per consortium and a cross cutting theme were selected and used as the units of analysis for the RQ+ rather than each individual research product.

⁷ Le Groupe-conseil baastel. Final Evaluation of the IDRC/DFID Climate Change Adaptation in Africa Programme, 2012.

⁸ Ofir, Z., Schwandt, T., Duggan, C., and McLean, R., IDRC 2016, RQ+. Research Quality Plus. A Holistic Approach to Evaluating Research

⁹ The Research Quality Plus (RQ+) assessment instrument (2014 and updated December 2017)

- **Question 2** uses the ToC and/or logical frameworks for each consortium and for CARIAA as the frameworks for assessing CARIAA's achievements. Through desk review of publications, products and reports, interviews and focus groups with stakeholders, the team collected evidence on outcomes (and, when possible, impacts) achieved or in progress. Field visits allowed the team to fill data gaps, validate and triangulate information.
- **Question 3** identifies outcomes that are promising on the short term (6 months to 2 years) and beyond CARIAA, or new research ideas that stem from current work. In line with the ToC, to be considered as promising at the outcome level means that it involves the use of research by stakeholders to enhance adaptation and address vulnerability to climate change.

The evaluation was conducted in two phases: The first phase consisted of secondary data collection and analysis leading to an initial assessment of research quality (Question 1), outputs, outcomes and early impacts (Question 2), which were presented to CARIAA executive committee and management in early May 2018. The second phase aimed to complement, validate and nuance findings for both Question 1 and 2, and to address Question 3, through first-hand data collection by conducting visits to three participating countries and additional secondary data collection and analysis.

1.3.1 Methods and tools

The evaluation used a mixed-methods approach including desk review, extensive interviews and an online survey, literature review and visits to three countries and project sites.

- **Desk review of key documents** produced by CARIAA and the consortia: Extensive documentation was available to the evaluation team, from administrative documents (database of outputs, progress reports, evaluations) to the variety of research outputs or products generated by CARIAA since 2014, which include peer and non-peer reviewed papers, blog posts, articles, videos, handbooks, etc. Information on documents was collected and analyzed using analysis frameworks developed based on the evaluation matrix.
- **Quantitative review of research outputs:** Based on the output database developed by CARIAA, the evaluation team conducted a quantitative analysis of the outputs included in this database, to obtain an overview of the type of outputs produced, their timeline, their themes, and the gender and country of origin of their authors. This analysis complements the monitoring data published regularly by CARIAA.
- **RQ+:** The evaluation made the assessment of research quality using the two components of the RQ+ framework: (i) the dimensions and sub-dimensions that characterize research quality and the key contextual factors that shape the research, and should be considered in assessing quality, and (ii) the evaluative rubrics indicating the level of performance. The evaluation team adapted the RQ+ to the specific requirements of CARIAA, grouping together some of the proposed rubrics to improve alignment of the framework with the evaluation questions (see Annex III – RQ+ Framework. Given the structure of the program, the unit of analysis selected for the RQ+ assessment was themes rather than individual research products (as the RQ+ is usually applied). For each consortium and for the program level, one theme was selected for analysis during the Inception Phase, after a preliminary document

review and consultations with consortia¹⁰. During Phase 1 for each of the themes, a sample of products was selected and reviewed focusing on peer-reviewed articles, complemented by other types of research outputs (working papers, web-based articles and stories of change, blogs, etc.)¹¹. This was complemented with interviews with 6 to 10 researchers/research managers per consortium. During Phase 2, the additional theme of migration/human mobility – common to all consortia – was added and the same process was applied. Analysis involved assessing each of the quality criteria in light of the context elements, for all relevant research outputs. This provided the scope to look at cross-consortia research outputs produced on migration or through a dedicated Opportunities and Synergies Fund (OSF) project. During Phase 2, visits to three participating countries allowed to refine the understanding of some aspects of the context and relevance. Ratings for each of the dimensions for the two themes were estimated as well as an overall rating per consortium and then for the entire CARIAA program.

- **Interviews and focus groups:** More than 130 interviews were conducted with program management, consortia management, researchers and partners and vulnerable groups to answer each of the three evaluation questions. Draft interview protocols were submitted in the Inception Report and were used as a basis for semi-structured interviews. Interviews were conducted on the phone during Phase 1 and mostly in person during Phase 2, during field visits and during the Fourth Annual Learning Review (ALR₄) that took place in Cape Town, South Africa at the end of June 2018).
- **Field visits:** Two types of “field visits” were undertaken during Phase 2. On the one hand, three field visits were realized to the sites of all four consortia, namely in Botswana (ASSAR), Kenya (PRISE) and Bangladesh (DECCMA and HI-AWARE). These involved meetings with lead and partner research organizations, visits to project sites and meetings with stakeholders and vulnerable groups (i.e. communities, government officials, grantees, Small and Medium Enterprises (SMEs) etc.). Two members of the team also travelled to South Africa to attend the CARIAA’s fourth and final Annual Learning Review (ALR₄) which gathered representatives from all of CARIAA’s main partners to reflect on achievements and explore promising results and opportunities for research uptake. While in South Africa, the team also participated in the 4th Adaptation Futures conference (held prior to the ALR₄), that allowed the team to interact with the international adaptation community about the role of CARIAA and also assess first-hand the quality of CARIAA’s presentation at the international forum. These trips were extremely valuable to fill data gaps, collect additional information, validate existing information, and to acquire a first-hand perspective on promising outcomes.
- **Using the program’s Theory of change to assess the achievement of objectives and outcomes:** Given the complexity of the program, particularly the differences between consortia, the evaluation focused on the program’s ToC (and not on consortium-specific ToC’s). The purpose of this assessment is to look at results and quality of outputs obtained at the program. CARIAA’s ToC was used as a reference to analyze the program achievements under an accountability angle. It was also used to structure this report, using the ToCs’ definition of outputs, outcomes and impacts as guiding

¹⁰ Please refer to the Inception Report for more details about the process.

¹¹ It should be noted that given that this is the final year for CARIAA, this is a time for consolidating and synthesizing research findings. The evaluation team accessed recent relevant publications, but some research papers currently under preparation may not have been accessed.

principles for collecting data and presenting the evaluative evidence. Discussions about the program design fall outside the purview of this assessment.

- **Gender and social inclusion lens:** A gender lens was applied at all stages of the evaluation process using two frameworks:
 1. According to the revised Gender Assessment Framework defined at the program level (as a component of the RQ+ tool to assess the research quality) and used in the mid-term gender review (see Annex IV - CARIAA's revised Gender Assessment Framework)
 2. In the framework of the evaluation matrix, assessment according to five gender-specific indicators defined under the evaluation question Q2.
- **Validation and triangulation:** Throughout the evaluation, the team ensured validation and triangulation of data and findings to have robust, credible and useful conclusions and recommendations. Keeping in mind the above-mentioned OECD standards, the evaluation seeks to be credible, valid and useful. Data analysis involved the preparation of various internal notes and synthesis documents presenting evidence from field visits, interviews, data collection frameworks, etc., per consortium and/or per evaluation question. Evidence was then compiled for each evaluation question and sub-question, and validated when possible across multiple sources. The evidence was then analyzed against the ToC and using an inductive logic to assess the achievement of outputs, outcomes and impacts.
- **Identification of promising opportunities:** This was undertaken mostly during Phase 2 of the evaluation, building on information collected during Phase 1, but mostly on further interviews, on a survey and on information gathered during the ALR4 in Cape Town and the Adaptation Futures 2018 meeting as well as during field visits. All of these data collection methods allowed the team to build a good overview of the main ongoing research projects, on their stage of advancement, the main challenges they faced, and on their potential achievements in the short, medium and long term. In particular, the team conducted a **survey** circulated among CARIAA's membership included in CARIAA's database for a period of three weeks. Its specific purpose was to give the opportunity to members of the CARIAA's network to have a voice about the program's most promising outcomes, to feed into the evaluation's Question 3. The survey aimed at collecting ideas of promising results in the short and medium term, additional research ideas for the longer term, and related support required by researchers to this end. The survey was sent to all members of the CARIAA database (about 500), of which 87 responded. Responses came from all consortia, as well as from IDRC/CARIAA and from the Science and Policy Advisory Committee (SPAC). The results of the survey are incorporated into the analysis in Section 9 of the report, extracting the key ideas, trends and topics. Since the final sample was not representative, data was used to supplement and validate data on this topic collected by other means. The evaluation team did not conduct an assessment of the individual promising research projects identified through these methods (e.g. methodology, profiles of researchers, financial feasibility), but rather focused on strategic interest with regards to potential outcomes and outputs.

1.3.2 Challenges

Throughout the evaluation there were several challenges and opportunities that were dealt with as the team progressed in its assessment.

- The timing of the evaluation seems to run against the assessment of both research outputs and outcomes, in the sense that by mid-2018, a significant body of research is still under completion, under review, or awaiting publication. According to the Inception Report, the scope of the evaluation should have covered only until December 2017, but more recent research outputs were also reviewed for the RQ+, some of them as recent as April 2018. In addition, the team also reviewed activities that are currently under way even in July 2018 specifically for the three countries where the team conducted the field visits.
- One of the key approaches to achieve outcomes in CARIAA is the concept of Research into Use (RiU), which is discussed later in the evaluation report. Given that several research outputs are still being finalized, timing becomes an issue as a large part of the research has yet to be communicated and eventually used. The evaluation took this into consideration and made some judgments on the likelihood for the research's uptake.
- The evaluation adapted the RQ+ approach to assess the quality of research around specific themes. The RQ+ approach is generally used to assess the quality of individual research projects. The final assessment is not a sum or average of the assessment of each of the research products under each of the selected themes but it implied a more holistic assessment that introduced expert judgement from within and outside the evaluation team (e.g., through interviews of consortium researchers). The RQ+ framework was very useful and it was applied without departing much from the version adapted by IDRC.¹²
- The evaluation did not assess the efficiency of the program, in particular of the program design – as a consortium of consortia involving multiple partnerships. This was a shortcoming sometimes since the program design directly influences how the research is conducted, reviewed and communicated. When relevant, the evaluation team makes a point of indicating whether the way the program was set up had a specific positive or negative influence in terms of the achievement of the objectives, outcomes and impacts.
- Another challenge faced by the evaluation team regarding the uptake of CARIAA's research is related to the fact that many of the institutions involved work in parallel on several (and often similar or interrelated) climate change research programs and initiatives, in addition to CARIAA. They interact and feed into one another. This sometimes made it difficult to distinguish the specific influence of CARIAA in the research's uptake and endorsement in policies and by decision-makers.

¹² The Research Quality Plus (RQ+) Assessment, Instrument, Original Version from June 2014. Updated December 2017.

2. Progress according to milestones

Highlights

CARIAA has achieved and often surpassed all of the Milestones that were established for 2018. From the perspective of achieving what was promised, the program has shown solid effectiveness.

The following table summarizes CARIAA's progress against its milestones as presented in the program's logical framework¹³ as of March 2018.

Table 3. Progress against logframe (as of March 2018)

Indicator	Milestone for 2018	Achievement
Impact: Key stakeholders, including the most vulnerable communities have the capacities (institutions, systems, practices and skills) to enable them to make evidence-based choices for coping with current variability and potential future impacts of climate on development		
Mid-term review judgement of progress towards impact in five of more focus countries (including: Bangladesh, India, Pakistan, Ghana, Kenya)		<i>Information provided in Section 5 of this report</i>
Outcome: Actors in planning, programme, policy and research use a range of evidence-based, tested options to enhance and support communities' livelihoods in hotspots regions in the face of climate challenges, now and in the future, in ways that benefit the most vulnerable women and men		
Number and qualitative description of evidenced case studies/stories of change	6 stories of change	ASSAR: 4 stories of change DECCMA: 3 stories of change PRISE: 2 stories of change HI-AWARE ¹⁴ : 8 institutions used; 6 policy documents reference; 4 policy dialogues; 4 requests for briefings
Demand by CARIAA stakeholders and target actor groups	4 cases of demand	Multiple (see Section 4)
Output 1: Consortia produce a range of scientifically validated, policy and practice relevant CARIAA research, evidence and pilot results on what interventions are effective (and not) in climate adaptation in "hot spot" regions, with gender and inclusion integrated into designs, findings and results/outcomes		
1.1 Number of peer/non-peer reviewed outputs, authorship disaggregated by gender and membership in a southern institution	40 peer reviewed journal articles accepted 40 peer-reviewed outputs published other than journal articles 20 non-peer-reviewed outputs published	65 papers in peer-reviewed journals 135 papers in non-peer reviewed publications

¹³ The CARIAA executive committee approved modifications to the original logical framework in July 2017 to include more precise definitions of outputs, and more ambitious targets given program achievements by that date.

¹⁴ HI-AWARE had a different set of outcome indicators in its logical framework.

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Indicator	Milestone for 2018	Achievement
		465 other types of outputs ¹⁵ , 90% of all outputs available in open access ¹⁶
1.2 Level of consideration of gender as a key element of social inclusion, from research design to output production	n/a	n/a (See Section 4.4)
Output 2: Stakeholders in policy, practice and research in sub-national, national and international settings have access to, and facilitated opportunities to engage with a new body of quality evidence on options to tackle climate vulnerabilities and adaptation that benefit vulnerable women and men in “hot spot” areas		
2.1 Access: CARIAA outputs, concepts and debates are made widely and proactively accessible within and outside academic communities		
2.1.1 Web sessions	44,707 web sessions	83,790 web sessions
2.1.2 Document downloads	13,571 document downloads	21,009 document downloads
2.1.3 Media mentions		317 media mentions
2.1.4 Social media mentions	176 media mentions 9,171 social media mentions	35,973 social media mentions ¹⁷
2.2 Engagement of stakeholders: Frequency and perceived relevance of stakeholder engagement activities. Representation of CARIAA’s targeted stakeholder groups in engagement activities	200 events with 70% relevance	277 events with a rating of 4,53 out of 5 for relevance ¹⁸
2.2.1 Number of events and perceived relevance	80% of events with at least 2 CARIAA targeted stakeholder groups represented	Information not available
2.2.2 Stakeholder representation		
2.3 Endorsement: CARIAA research findings evident in policy dialogues, decision-making forums, networks, and planning activities in CARIAA focus countries	8 examples of contributions	Multiple (See Section 4) 841 citations ¹⁹
2.3.1 Number of examples of contribution	300 citations of peer-reviewed journal articles	
2.3.2 Number of citations of peer-reviewed journal articles		
O3: Capacities to design, research, communicate and use evidence on adaptation issues in “hot spot” regions, with attention to gender and inclusion in designs, outputs and results (outcomes), have been developed amongst researchers, institutions and research/policy/practice networks (systems) in CARIAA focus countries		
3.1: Individual: Percentage of individuals inside and outside of the CARIAA core partners with strengthened capacities. Disaggregated by gender	Mid-term capacity assessment completed	Mid-term capacity assessment completed 3.1.1. No information available in the M&E system

¹⁵ CARIAA M&E System – Objective 1 (As of 01/03/2018)

¹⁶ CARIAA M&E System – Objective 1 (Data accessed on 24/07/2018)

¹⁷ CARIAA M&E Dashboard, Quarterly Report for March 31, 2018

¹⁸ CARIAA M&E system, Objective 2 (Data accessed on 24/07/2018). Rating scale unknown. Ratings provided only for 64 events out of 277.

¹⁹ *Ibid*

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Indicator	Milestone for 2018	Achievement
3.1.1 % of individuals inside the CARIAA partnership (consortia staff and contractors) who report increased capacity		3.1.2 203 students (88 completed, 115 in progress). 46.6% female ²⁰
3.1.2 # of individuals outside of the CARIAA partnership (not consortia staff) who benefitted from capacity building awards (e.g. Masters, PhD, Post-doc, internship, etc.), disaggregated by gender		3.1.3. No information available in the M&E system
3.1.3 Number of individuals outside of the CARIAA partnership (not consortia staff) who participated in capacity building activities, disaggregated by gender		
3.2 Institutional: Reported changes in capacity of consortium partner institutions to: design, implement, communicate and use research and evidence with attention to gender and inclusion (against self-assessment baseline); collaborate within consortia in terms of design and implementation; and secure new funding and partnerships	Mid-term capacity assessment completed	Mid-term capacity assessment completed

²⁰ CARIAA M&E system, Objective 3 (Data accessed on 24/07/2018).

3. CARIAA's Sphere of Control: its research output production and quality

Highlights

Between March 2014 and March 2018, CARIAA has delivered a large number of research outputs (over 600) under various forms, ranging from data products to blog posts and conference papers, including 62 papers published in peer-reviewed journals. Several products are still being prepared.

The overall RQ+ rating for CARIAA is **very good**.

- Integrity: Very good. High proportions of these outputs have been reviewed by peers or published in academic journals and outputs present strong methodologies and research design.
- Legitimacy: Good. Research has contributed extensively to the science of climate change, in particular with regards to understanding its impacts and magnitude for new environments (e.g., deltas, semi-arid lands and the Himalayas) or in connection with socio-economic issues (e.g., links between migration, gender and climate change adaptation)
- Importance/relevance: Very good. All CARIAA research streams reviewed rank high on the criteria of importance and relevance, with numerous examples of innovative and ground-breaking research, well-connected to key development and climate change priorities, and building on existing knowledge.
- Positioning for use: Good. The integration of a RiU approach across all consortia created conditions for effective positioning for use of research results. The rating for Positioning for use in the topic of migration presents a mixed picture mostly because the research is just starting to produce results.

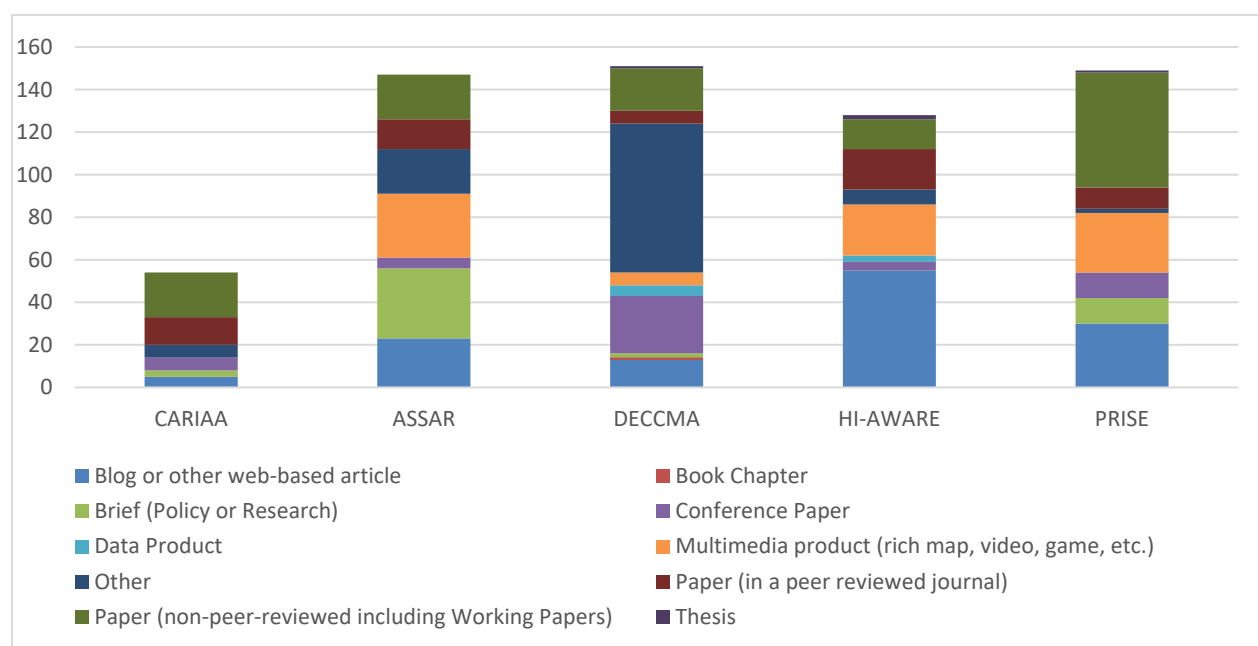
3.1 Diversity and volume of research outputs

The first step in achieving the objectives of the program was for CARIAA and its consortia to conduct high quality research, within each of the hotspots, that fill knowledge gaps and bring credible evidence about what works and what doesn't in adaptation approaches and climate science. This was in fact, the first objective of the program: generation of knowledge through financing research. There are different types of research studies: modeling, vulnerability and impact assessments, policy development, pilot applications, and more. According to the ToC, the research outputs are supposed to explicitly target the research-policy-practice "impact pathway". Some of the key indicators include: implementation of multi-site, multi-disciplinary research strategies, partnerships and collaborative processes and strategies to engage with policy, research and practice actors.

Within CARIAA's sphere of control of the ToC, there are two types of outputs: tangible research results, evidence and synthesis products as well as the intangible stakeholder capacities, interactions and networks to support engagement. One of the key outputs from CARIAA was a range of scientifically validated and tested policy/practice relevant research, evidence and innovation results

on what is effective (and not) in adaptation in the hotspots. This section presents an overview of CARIAA's tangible outputs based on the CARIAA database, as updated at the end of February 2018. This section responds to whether or not the program has achieved its first objective, the generation of knowledge. CARIAA has produced approximately 632 research outputs, distributed among consortia as presented in Table 4. In this table and throughout the report, "CARIAA" refers to research conducted at the program level (i.e. not by any specific consortium although led by one or more consortia and coordinated by IDRC program officers), while "CARIAA Program" is an overall assessment of CARIAA as a whole. The quality of these products is discussed in *Section 3.4. Research quality*. This database includes all the outputs submitted by the PIs to CARIAA's PMU. Examples of intangible outputs are spread throughout the report as they relate to outcome achievement, keeping in mind they were not fully identified by the ToC or the logframes.

Table 4. Total outputs per type and per consortium (categories as defined in the CARIAA database)



While all consortia produced a relatively similar number of research outputs – between 128 and 152 – the types of outputs produced vary greatly from one consortium to the other. Overall, the most frequent type of output is non-peer-reviewed (130) such as working papers, followed by blogs or web-based articles (126). A large number of outputs (106) are classified as "other"²¹. According to the Output Database, 35 outputs involved more than one consortium or involved CARIAA in addition to one or more consortium. Five hundred and fifty-five (535) outputs are publicly available and were accessible online to the evaluation team.

Looking at the more formal types of outputs, like briefs, book chapters, thesis and papers in journals (Table 5. Products that went through quality review and/or were peer reviewed (according to CARIAA database) illustrates significant variations in the number of outputs produced by each consortium, as well as on the application of internal quality review processes (as presented and self-reported in the

²¹ Over half of the "others" were produced by DECCMA. These are mostly posters and references to presentations made in conferences, and include also a few reports and guides.

CARIAA database). Despite a relatively low number of these “more formal” outputs (35), HI-AWARE has 19 publications in peer-reviewed journals, or approximately 54% of these outputs, the highest across all consortia. Also notable is the fact that even if it has the largest number of internal outputs (77), PRISE was able to review quality of 80% of these outputs. DECCMA has both the lowest number of more formal outputs and the lowest number of peer-reviewed publications. This is consistent with its initial focus on extensive data collection; for which related research outputs are currently under preparation, according to interviews with consortium management.

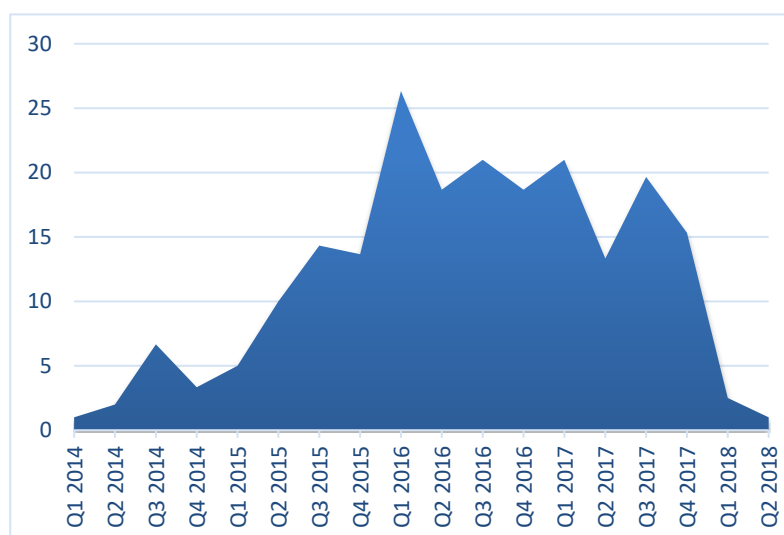
Table 5. Products that went through quality review and/or were peer reviewed (according to CARIAA database)

	CARIAA	ASSAR	DECCMA	HI-AWARE	PRISE	Total
Number of briefs, book chapters, papers and theses produced	37	68	30	35	77	247
Proportion of briefs, book chapters, papers and theses that were quality-reviewed by consortia	78%	25%	26%	57%	80%	
Number of papers published in a peer-reviewed journal	13	14	6	19	10	62 ²²
Proportion of papers published in a peer-reviewed journal out of all briefs, book chapters, papers and theses produced	35%	21%	20%	54%	13%	

In terms of authorship, the CARIAA database identifies 376 different authors, 76% of whom are from developing countries. About 41% of authors are women. This proportion is maintained whether one looks only at authors from developed or from developing countries.

Figure 1. Output generation over time illustrates the progression of output production over time. A few outputs were published early-on when consortia were operationalized (early 2014), but really started taking off one-year later (end of Q1 2015). While production increased irregularly by waves until the January 2016 peak, some level of stability has been in place since then, with an overall increasing trend from the beginning of the program.

Figure 1. Output generation over time (quarterly average)

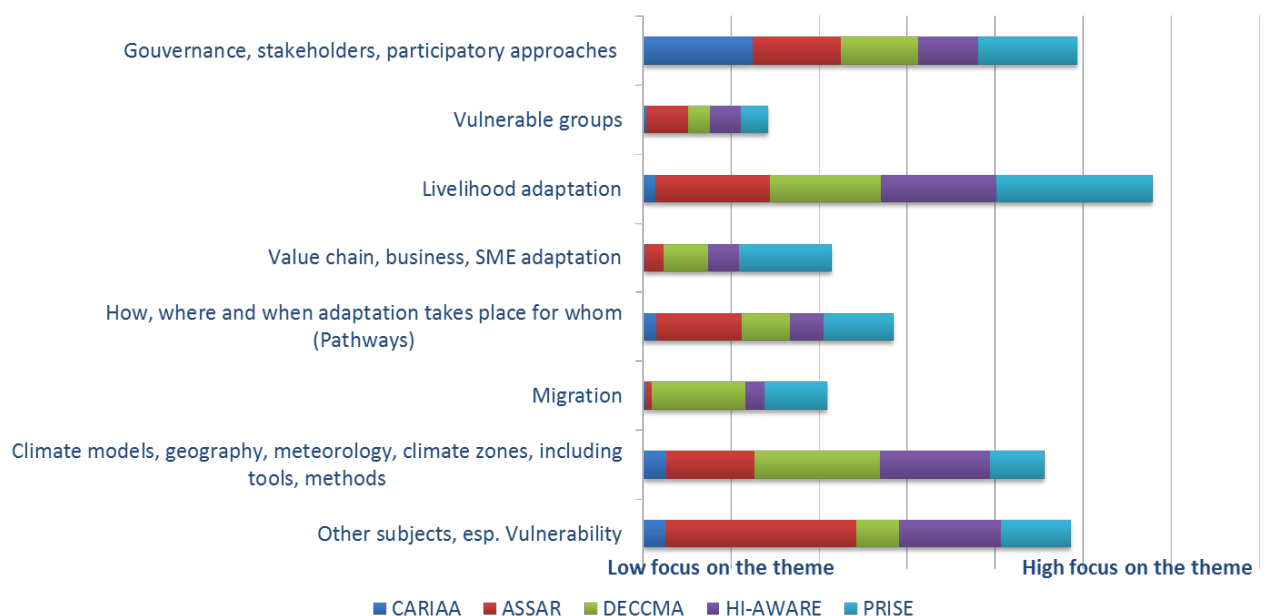


After the main CARIAA themes were identified by the evaluation team based on what the team recognized as the key areas of work for CARIAA during the Inception Phase, the evaluation team reviewed CARIAA outputs available to identify how high the focus on each theme was and which

²² These numbers are slightly different from the ones in Table 3 as the source is the output database (Dated February 29, 2018), and a more recent source (M&E system) was used to fill some of the information in Table 3.

consortia contributed to it²³. Figure 2 below was built as a result of this analysis and provides a qualitative overview of the different themes addressed by each consortium and by the CARIAA program. As expected, all consortia contributed to discussions around governance, stakeholders and participatory approaches, and this was also an important theme for the CARIAA program as a whole. Adaptation of livelihoods was the single most important theme addressed by CARIAA. Most consortia touched on all themes, to some extent, which likely strengthens possibilities for synergies towards the end of the program. This is true both for general themes like livelihoods, and for more specific themes like migration. It is also interesting to observe that all consortia relied to some extent on science under the climate models theme. ASSAR's research topics are the only ones that do not seem to fit strongly under the main themes identified, as their research outputs often focused on specific barriers to adaptation, vulnerability factors or impacts of climate or ecosystem-based adaptation. Per consortium, the distribution among themes it illustrated in Figure 2 below.

Figure 2. Main research themes



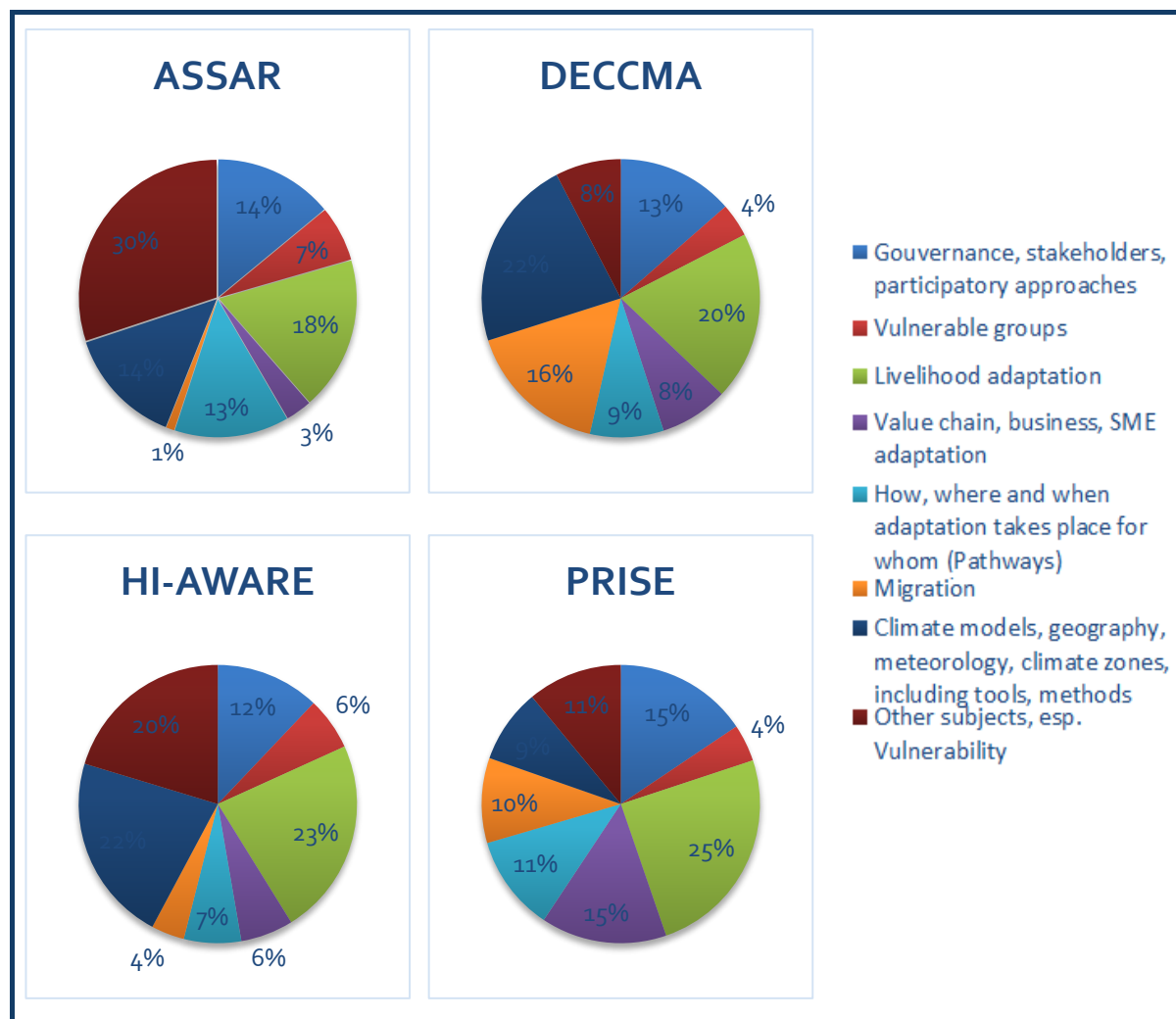
Looking at the distribution of work by theme for each consortium (Figure 3), it is clear that each consortium was able to address a diversity of contents and topics.

- ASSAR and HI-AWARE included a larger number of vulnerability work and climate modeling probably given the lower levels of existing knowledge for these geographies;
- Migration was tackled later in the program and that is reflected in the lower number of outputs related to this theme (other than for DECCMA which was a key topic from the start);
- A small percentage is dedicated to vulnerable groups across all consortia (between 4% and 7%), which may be explained by this work having been undertaken later in the process;
- PRISE's focus on private sector and SMEs clearly visible (25%), and HI-AWARE's contribution to that discussion is also significant (23%) even if less explicit and directly targeted as presented in next section;

²³ The level of focus on a theme is the combination of two factors: the number of outputs where a theme was addressed and the importance/strength of the theme in each output (low, medium, or high importance of the theme)

- ASSAR's focus on barriers to adaptation is also visible by the higher percentage of research under the "other" category, as a more important part of research involved assessing vulnerability against various factors like ecosystem services.

Figure 3. Main themes by consortium



3.2 RQ+ themes assessed

Table 6 below presents the final selection of the themes per consortium after consultation and validation from the PI/co-PIs in each consortium. The number of outputs presented in the Table 6 is an indication of the volume of products that were reviewed per theme but it is difficult to indicate the proportion of products that this represents compared to the amount produced since not all products in the database are equal (as presented in the previous chapter) and many products are related to the same original research (one research product may have created a journal peer reviewed paper, blogs, media products and conference paper, all related to the same research). The team estimates that about 20% of the research products listed in the CARIAA database was included through this process. It should be noted that beyond this RQ+ assessment, the other research topics were also included in the evaluation process when assessing other questions in the evaluation around achievements of outcomes and impacts discussed later in the report.

Table 6. Overview of themes assessed

Consortium	Theme selected for RQ+	Main research themes in the selected research clusters	# of outputs reviewed
ASSAR	Gender and social differentiation	<ul style="list-style-type: none"> Variations in vulnerabilities to current risks and responses across social groups Changes in vulnerability and response patterns Implications of current and proposed adaptation on the wellbeing and vulnerability of different social groups 	11
	Migration/Human mobility	<ul style="list-style-type: none"> Cross-cultural research on mobility as a livelihood strategy and/or as an adaptation option Implication of male out-migration on gender and household structures Dimensions of vulnerability of migrants in the rural-urban continuum 	11
DECCMA ²⁴	Migration and vulnerability in the four study deltas (Bangladesh, Ghana, India)	<ul style="list-style-type: none"> Interplay between environmental and socio-economic risk and migration Understanding migration as an adaptation option in coastal zones Role of policy response to movement of population 	17
HI-AWARE	Water research and management in the Indus Basin	<ul style="list-style-type: none"> Modeling hydrological cycles for different climate change scenarios Changes in water availability in spring and dug wells Climate change options for water management, especially for agriculture 	21
	Migration/Human mobility	<ul style="list-style-type: none"> Consequences of migration on rural livelihoods, and in particular on agriculture Gender dimensions of migrations, with a focus on remittances and changes in gender relations at household level as a result of male or female migration 	6
PRISE	Cotton Value chains in Pakistan	<ul style="list-style-type: none"> Harnessing opportunities for climate-resilient economic development in semi-arid lands Adaptation options in the cotton sector in Pakistan 	13
	Migration/Human mobility	<ul style="list-style-type: none"> Relationship between migration, remittances and climate change Identification of policy options for reducing vulnerability and strengthening resilience in semi-arid regions 	11
CARIAA	Research-into-Use, Collaborative Research, Knowledge Management	<ul style="list-style-type: none"> Opportunities arising from the RiU approach Collaborative nature of social learning Strengths of cross-consortia collaborative research 	21

3.3 RQ+ research context

The RQ+ approach identifies five areas that are used to characterize the context in which the research was developed. Table 6 presents an overview of the different themes selected for the RQ+, per consortia and at CARIAA level. Table 7 presents an overview of the context in which the research was applied or developed in the different consortia and at the CARIAA program level (cross-consortium topics), with darker shades of yellow indicating a stronger alignment with the criteria. The theme of migration was not initially a main focus for CARIAA, but it developed to become a common line of interest for all consortia and an important specific contribution by CARIAA to climate change adaptation research. It is presented on a separate line as it was studied as a common theme across all consortia. It should be noted that the final sample of products for ASSAR on migration was ultimately relatively limited given that the evaluation team could not access several of the major outputs still under preparation.

²⁴ In the case of DECCMA since the original consortium theme was migration no additional analysis was completed.

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Table 7. CARIAA research (selected and common themes) in the global context and within the geography in which it was applied.

Characterizing the research	ASSAR Gender and social differentiation/ Migration	DECCMA Migration and vulnerability	HI-AWARE Water research and management in the Indus Basin/ Migration	PRISE Cotton Value chains in Pakistan/Migration	CARIAA Research-into-Use, Collaborative Research, Knowledge Management
Maturity of the research field – existence of well-established theoretical and conceptual frameworks Scale: from new to mature	Gender and climate change is still an emerging field globally and ASSAR's research is providing new perspectives including intersectionality and masculinities	Mature research field globally with innovations introduced by DECCMA: transdisciplinary analysis of migration and use of a single methodology for collection of substantial data-sets across 4 deltas in sending and receiving areas (household survey)	Mature research field globally but this is an emerging research field as far as the Indus Basin is concerned	Emerging field both in Pakistan and globally: PRISE is making substantial contribution to combining value chain analysis with assessment of climate change impact	Emerging field: applying RiU across such a complex program, and from the onset, is a novelty. No best practices to inform the design of CARIAA in these respects
	Migration is also an emerging field, and innovative approaches and findings on gendered implications at the household level and temporality dimension		Migration is an emerging field in the context of climate and in particular in relationship to gender roles	Migration also an emerging field, with PRISE taking a novel approach to look at migration as a resilience building strategy for households	
Research capacity strengthening – extent of focus of research on strengthening internal and external capacities Scale: from limited to strong	Low focus in the research outputs but solid evidence that ASSAR is contributing to changing attitudes and strengthen capacities on gender in the scientific community	Evidence of research capacity strengthening on gender and migration, on interdisciplinary dialogue, and on Research-into-Use approaches. Limited evidence of integrated modelling capacity being built. No evidence of capacity development in the research on migrant communities.	Limited focus in the modelling work but clear focus on awareness of impact and adaptation options	Evidence of strong exposure of lead research organizations. Increased capacity of various Cotton value chain actors, including private sector	Strong focus in all reviewed outputs. Large range of stakeholders targeted for capacity strengthening
	Low focus: little evidence of capacities to address migration being built (beyond ASSAR research teams and post-docs) and no feedback mechanism in place to 'return results' to communities		ICIMOD gained new expertise on migration but no feedback mechanism in place to 'return results' to communities	Increased capacity and exposure of research organizations to conduct research on migration in Pakistan and West Africa	
Research environment – how supportive involved institutions were of research Scale: from unsupportive to supportive	Strong commitment by host institutions, esp. the Universities of East Anglia, of Namibia and the Indian Institute for Human Settlements	Strong commitment by host institutions in all 3 countries and in Northern Universities	High commitment to the research by host institutions	High commitment to the research by host institutions	Supportive research environment overall, leadership from IDRC often acknowledged or emphasized
	Strong commitment, especially from IIHS in India, a policy-facing institute involved in CC and risk management		High commitment to the migration theme illustrated by the hiring of a specialist at ICIMOD and support to an OSF proposal on migration	High commitment to the research by host institutions	



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Characterizing the research	ASSAR Gender and social differentiation/ Migration	DECCMA Migration and vulnerability	HI-AWARE Water research and management in the Indus Basin/ Migration	PRISE Cotton Value chains in Pakistan/Migration	CARIAA Research-into-Use, Collaborative Research, Knowledge Management
Political environment – its influence on research Scale: from low influence to high influence	No direct influence from the political environment on the research agenda, but adjustments to the RiU approach made in Ethiopia to adapt to a politically unstable context	Participation of Egypt in DECCMA compromised due to political decisions which resulted in missed opportunity to bring in the Nile Delta into DECCMA research. Researchers also report challenges in engaging policy makers on migration-related policy at national level in India and Bangladesh	No evidence of political influence on the research. Few papers discuss the regional, national or local politics around water-related issues.	The promotion of a “Policy first” approach in PRISE helped in securing interest from stakeholders, but the unstable political situation creates uncertainty in terms of uptake of findings at policy level	No evidence of direct influence from the political environment
	No influence on the migration research but popular discontent about drought relief slowed the research pace in 2016-2017 in Karnataka (India)		No evidence of political influence, even though migration is a politically charged topic. Researchers report reluctance for data collection on migration in Pakistan	No evidence of influence. Stakeholder engagement perceived as providing an enabling environment for work on migration	
Data environment – existence of instruments and measures for data collection Scale: poor data set to rich data set	ASSAR outputs draw from a rich data environment, and gender-disaggregated data collection is widely carried out. Participatory methods widely used by ASSAR research teams	Rich data environment on migration and adaptation in deltas in general, but limited data on household-level decision-making, a gap DECCMA's work on migration partly filled. Inventories of adaptations options for deltas considered as a novel data-set	Data and methodologies well-developed (remote-sensing, ground trothing, rapid rural appraisal...). Some tools or combination of tools used for the first time in some country contexts.	Limited data available on value analysis in the context of climate change. PRISE research produced new data and techniques now available to be applied in Pakistan	Under-developed data environment. Data and tools developed collaboratively by consortia and CARIAA
	Rich data environment, but some challenges arising with data collection in informal settlements in India		Rich data environment. HI-AWARE generated new data-sets on the gendered implications of migrations (in sending areas, in the case of female and male migrants)	Limited data available on in-country migration (especially in Tajikistan and Senegal). Challenges in sex-disaggregated data collection. Household surveys done by PRISE fill a data gap	



3.4 Research quality

Table 8 presents the summary of all of the ratings for the themes selected. **Overall, CARIAA's investment in research was worthwhile and its quality was very good.** This section presents a narrative judgement of research quality for each dimension, examining the sampled consortia themes, and migration as a cross-cutting theme.

Table 8. Summary of RQ+ ratings for CARIAA as a program and for each consortium
(ratings are: unacceptable, less than acceptable, good and very good)

Area of assessment	Overall	ASSAR	PRISE	HI-AWARE	DECCMA	CARIAA
Integrity	Very good	Very good	Good	Very good	Very good	Very good
Legitimacy	Good	Good	Good	Good	Good	Good
Vulnerable Groups	Very good	Very Good	Very good	Good	Very good	Good
Gender	Good	Very good	Good	Good	Good	Less than acceptable
Local knowledge	Very Good	Good	Very Good	Very good	Very good	Very good
Potential negative consequences	Good	Good	Good	Good	Good	
Importance	Very good	Good	Very good	Very good	Very good	Good
Positioned for use	Good	Good	Very good	Good	Good	Very good

3.4.1 Integrity of research

What is the Integrity of research outputs for the entire CARIAA Program? VERY GOOD

a) Integrity of research for selected consortia themes: **very good**

In each consortium there has been a substantial number of peer-reviewed articles published in academic journals, particularly for ASSAR, DECCMA and HI-AWARE. For example, the hydro modelling work by HI-AWARE against different climate scenarios was published in *Nature*, and has been used as input into the 1.5°C process of the Intergovernmental Panel on Climate Change (IPCC). In ASSAR, over half of gender-related papers produced so far have been reviewed by peers and published in several journals, including *Climate and Development* and *Gender & Development*. Likewise, recent articles produced by DECCMA teams on migration display strong scientific merit, and are currently undergoing peer review for publication in academic journals. At CARIAA level, research outputs were also found to be of high integrity, with some reservations on the strength of methodology and research design in a few research



outputs. In the case of PRISE, the body of peer reviewed published research in the selected research stream (cotton value chain) remains limited.

b) Integrity of research for migration/human mobility: very good

Migration-related research shows strong scientific integrity and a sizeable number of studies have been published (as working papers, and in the case of one South Asia paper by UN Women) and several more are waiting to be published, in the pipeline of well-known journals and also as consortium working papers. Interdisciplinary approaches are well-represented in the DECCMA research outputs on migration. Gender is an important entry point in the migration outputs prepared by HI-AWARE and ASSAR and to a lesser extent, by PRISE and DECCMA. Publications of migration studies in internationally recognized scientific journals is still pending since many of them are still under review, with the exception of migrations studies undertaken by DECCMA.

3.4.2 Legitimacy of research

What is the legitimacy of research outputs for the entire CARIAA Program? Good

a) Legitimacy for selected consortia themes: good

(i) Vulnerable groups: Good

ASSAR offers a particularly sound social differentiation approach, considering multiple social categories: gender, age, migrant/not migrant, caste, social class, among other factors influencing people's practices to address climate change and its impact on wellbeing. Without going as far as ASSAR in the social differentiation approach, the research stream reviewed in PRISE explicitly deals with a differentiation between vulnerable groups and other groups, both in the identification of key actors in the value chains (including small famers) and in the private sector (with differentiation between SMEs and large companies). With its clear focus on migration and vulnerability, all research outputs in DECCMA examining migration include a discussion of vulnerability, exposure to risk, and pathways for reducing risk. The household survey provides ample scope to understand patterns of vulnerability amongst different socio-economic groups in deltas, relating these to migration patterns in and out of coastal areas. The stream on collaborative research and learning processes under CARIAA has some limitation regarding inclusiveness of vulnerable groups, although a couple of recent research pieces focus on this issue, potentially indicating a growing concern for inclusiveness in outputs which seek to synthesize findings from CARIAA.

(ii) Gender responsiveness: Good

Research conducted under DECCMA and PRISE places a lot of emphasis on better integrating gender into policy processes while the research in ASSAR illustrates 'best practices' in terms of gender-responsive research. Research outputs provide pathways for deconstructing the binary gender approach and incorporating other important sociocultural factors and dimensions in climate change vulnerability and adaptation strategies, considering inclusiveness, regarding people with disabilities, different social classes and ethnicities. In DECCMA, research outputs were found to be moderately gender-responsive: a significant number of outputs and briefs – though not all – make some reference to gender and the



surveys draw on sex-disaggregated data. The emerging picture for PRISE, HI-AWARE and CARIAA is a mixed one: with improvements as the program evolved in its implementation while some of the sampled research products consider gender, or make some reference to women as a vulnerable group, the importance of women's agency and analysis of gender power relations are not fully mainstreamed across the research process. In some outputs, gender is totally absent: this is the case in the latest PRISE paper on policy options for the textile manufacturing sector, and in most of the research sub-stream on water research and management in the Indus Basin. The lack of sex-disaggregated data is acknowledged in one HI-AWARE paper as a barrier to gender-sensitive decision-making and adaptation options. In the sub-theme analyzed for CARIAA, there is very limited consideration of gender in the social learning outputs, and papers discussing findings emerging from RiU also tend to overlook gender as an area of focus.

(iii) Engagement with local knowledge: Good

There are good illustrations of engagement with local knowledge in all consortia. HI-AWARE offers the most promising results in terms of engagement with local knowledge. The research conducted on water quantity and quality for springs and dug wells and implications in terms of adaptation options gives a central role to local knowledge (in the research design, implementation and conclusions). In PRISE for instance, the various research products clearly bring out the involvement of local stakeholders from the cotton value chain in the research, making extensive use of qualitative methods in the process and various stakeholder consultation fora.

(iv) Addressing potential negative consequences and outcomes: Good

CARIAA research is specifically designed to steer more informed decision-making in adaptation based on scientific knowledge and stakeholder engagement. In ASSAR, making relevant proposals of change at the policy level in order to avoid negative impacts in terms of gender equality is a clear objective, and risk management is built into most of the research related to gender. In HI-AWARE, the hydrological modeling and the water management work do not include an assessment of negative consequences (e.g. mismanagement of water) or the problem with inconclusive findings. None of the documents reviewed consider the consequences of non-action, which is a key issue for climate change (delay in implementation of climate adaptation options in hotspots leading to higher costs of adaptation, for instance). In DECCMA, one research sub-stream critically examines policy responses to migration, but the assumption that better informed policy on adaptation will lead to positive changes for groups most exposed to the impact of climate change is not sufficiently discussed or even acknowledged. In PRISE, policy options emerging from the research on increasing the resilience of economic sectors may warrant further analysis and a more rigorous assessment of potential negative impact for certain actors or groups.

b) Legitimacy for migration/human mobility: Good

(i) Vulnerable groups: Very good

Vulnerable groups are a central feature of the migration work done under all four consortia. Gender and socio-economic differentiation are addressed in the reviewed migration outputs studies. HI-AWARE studies offer a discussion of the impact of youth migration and ASSAR introduces research methods designed to understand vulnerabilities faced by different social groups. Many of ASSAR's research outputs place a particular attention on the vulnerability of marginalized and low-income urban



households, who bear the brunt of urban climate impacts. Research findings show that there are multiple layers of differentiation within informal settlements as they are comprised of communities from multiple socioeconomic and ethnic backgrounds with considerable differences in political power.

(ii) Gender responsiveness: Good

Across all four consortia, from the design of the research, women are considered as a separate group, which improves research conclusions. For instance, there is a recognition that women migrate more and more frequently in South Asia, and tend to be educated. The impact of migration on the agriculture sector in the Himalayas is also discussed, particularly the increasing feminization of agricultural work. PRISE research on migration underscores policy options to mitigate the negative impact of male out-migration on women (especially in terms of work burden), including promoting more optimal use of remittances to develop alternative livelihoods. Yet these options are likely to add to the burden of women in the short-term: this deserves more attention and context-specific analysis. The treatment of gender under ASSAR and DECCMA presents a mixed picture. Some research outputs present migration as an adaptation option in semi-arid and coastal areas, and discuss implications in terms of livelihoods and intra-household gender relations. In these outputs, gender mainstreaming has been successful, gender dimensions are analyzed and unpacked and there is evidence of use of gender-sensitive research methods. In half of the ASSAR outputs sampled, references are made to the gender differentiated factors affecting differently men and women, where attention is paid to the changing nature of gender relations in the context of migration, and gendered trends or dynamics within migrant communities discussed.

(iii) Engagement with local knowledge: Very good

Local communities were fully engaged and consulted through focus groups and in-depth case studies. In PRISE, the research products bring out clearly the involvement of local stakeholders in the research work, making extensive use of qualitative methods in the process and various stakeholder consultation fora. ASSAR research builds on extended mixed methodologies (household interviews, gender-differentiated focus groups, stakeholder mapping, in-depth life histories and key informants interviews) so it is understood that local knowledge has been adequately taken into account through the use of these methodologies.

(iv) Addressing potential negative consequences and outcomes: Good

All of the research pieces reviewed under HI-AWARE deal with the negative effect of migration in development and agriculture, in particular. One of the papers also discusses the negative implications from a methodological point of view of using only remote sensing instead of combining it with other ground truthing methods (qualitative approaches such as Focus group discussions). Several research outputs on migration produced under DECCMA identify the need for further research and attention to “trapped populations” (those who cannot move due to lack of financial and/or social capital, and are highly exposed to risk). The “How to” Guide on Life History interviews produced by ASSAR clearly exposes the limitations of the tool, and discusses examples of risks associated with applying the methodology, together with good practices. In PRISE, the potential unexpected negative consequences of some of the proposed options (mostly policy options) may warrant some further analysis in the future, in particular the differentiated impacts of some of those measures on gender. In addition, one of the limitations of the

research on migration (cross-consortia) is that it focuses almost exclusively on vulnerability and adaptation strategies for migrant outflows, and not for migrant receiving areas to the same extent. The fact that the impact of migration on the receiving areas in terms of vulnerability and resilience is often mixed tends to be overlooked, and would warrant research to come up with balanced policy options.

3.4.3 Importance/relevance of the research

How important is the research output for the entire CARIAA Program? Very Good

a) Importance/relevance for selected consortia themes: Good

All CARIAA research streams reviewed under this first phase of evaluation rank high on the criteria of importance and relevance, with numerous examples of innovative and ground-breaking research, well-connected to key development priorities, and building on existing knowledge. Examples include:

- The comprehensive household surveys conducted under DECCMA across four deltas in three countries to establish the importance of current migration patterns, analyze the non-linear relationship between environmental risks and the decision to migrate, and influence policy options on migration and adaptation.
- The integrated analysis of research work conducted under PRISE on the cotton value chain with climate change adaptation challenges in Pakistan coincides with a key development priority since both agriculture as a whole and the cotton value chain in particular represent a substantial segment of the economy. Therefore, research aimed at strengthening the resilience of this sector, with better knowledge of the differential impacts of climate change on particular regions or socio-economic groups in the cotton value chain is critical for developing relevant policy options.

The analysis also brings out a few caveats:

- ASSAR made headway in terms of showing the importance of non-climatic stressors in vulnerability and has contributed to changing the international climate change narrative on social factors. On the other hand, ASSAR research about barriers and enablers as a topic - aiming to understand why adaptation has not fully worked in the hotspots has not been achieved, and consequently was not incorporated by the research. One reason for this seems to be that even if the transdisciplinary approach was actively promoted, significant difficulties have been encountered to apply and integrate it.
- Water availability is crucial for the survival of millions of people that depend on Himalayan Rivers for water and research conducted under HI-AWARE in this regard is of great importance, as is the process of identification of adaptation options. However, the identification of investment options should have been taken further in order to guide private sector or government investments in adaptation.

b) Importance/Relevance for migration/human mobility: Very good

The topic of migration is clearly very important to the three hotspots in CARIAA, given the role of remittances as a source of income, the consequences of migration on agriculture and the receiving urban



areas, and given future projections about human mobility as a response to environmental change exacerbated by climate change in coastal zones and deltas, especially (to which DECCMA largely contributed). Research supported by HI-AWARE helped to develop an understanding of migration as an adaptation option. Analysis on the role of remittances in supporting resilience building, but also on how to improve migration outcomes for migrants by creating enabling conditions in the receiving areas (e.g. urban areas) is underway. The research also brings experiences that are fully relevant to the topic of climate change (e.g. how migration occurs after an extreme event such as the earthquake in Nepal). PRISE brought out relevant research on the integrated analysis of migration and climate change in semi-arid zones and on the drivers of adaptation options, thus filling a knowledge gap and contributing to the debate around and identification of policy options. ASSAR made important contributions to the migration research theme, including: analyzing both the rural-urban (and in and out peri-urban) migration phenomenon in the Global South and the challenges faced by migrants in this context from a social differentiation, social justice and political economy perspectives; spatiotemporal differentiation of adaptation strategies, together with the complexity of impacts within the same household with one or more migrant members; innovative methodologies such as the Life History tool.

3.4.4 Positioning for use/ Research-into-Use

How is the research output positioned for use/ Research-into-Use for the entire CARIAA Program?

Good

a) Positioned for use for selected consortia themes: Good to very good

The integration of a RiU approach across all consortia created conditions for effective positioning for use of research results: the design and conduct of research was largely done with use in mind, and users' environment was for the most part well-articulated in the examined research outputs. Policy makers are the primary "users" of research produced under ASSAR, DECCMA, HI-AWARE and PRISE, while CARIAA collaborative research aims at reaching other users/audience (practitioners, researchers, donors). The next section on outcomes (Section 4) provides examples of evidence of direct and indirect use of research results to influence policy as well as shortcomings and lessons.

b) Positioned for use for migration/human mobility: Acceptable to good

The rating for Positioning for use in the topic of migration presents a mixed picture, with positive and less positive aspects:

- Most climate adaptation research starts from climate projections, and then asks how people, governments and businesses can adapt to changing conditions. PRISE research projects take a different approach, starting from the perspectives of actors who face complex and multifaceted risks, of which climate change is just one. Therefore, the Policy First approach promoted by PRISE puts use and potential users at the center of the research process from the start.
- Two country-level research briefs on migration, one in Ghana and the other one in India, illustrate the attempt made at producing cross-consortia research outputs in a format that is accessible to policy makers and can be readily use for informing relevant policy. DECCMA played a lead role in



positioning research findings for use in the cross-consortia/collaborative research work on migration.

- The 'How to' guide²⁵ developed under ASSAR includes a wide list of recommendations on actions to be carried out before, during and after the interviews conducted by researchers, in the framework of any Life History process preparation and implementation, together with the analysis of data obtained. In addition, there is a strong focus on lessons learnt and experiences acquired during the ASSAR lifetime in different locations, with a clear intention of contributing to knowledge transfer and building future capacities.

Limits include:

- HI-AWARE conclusions and findings on migration have a lot of potential for use, but the research papers do not explicitly present how the conclusions could be used to affect which policies or how they could provide solutions or recommendations for the communities affected. The Synthesis draft paper, yet to be published (bringing experiences from all of the consortia in the South Asia region) highlights several barriers and potential options for modifying policies and barriers but there is no discussion of the scope to implement these changes or to provide some pathways for influencing policy at national or regional levels. Also, valuable research concepts developed by HI-AWARE, such as critical moments, were not discussed in the context of migration.
- In several ASSAR outputs, general recommendations on how to approach migration from a political economy or climate justice standpoint are presented, but without enough specification regarding context, measures, specific actions to be promoted at the policy level, etc. The RiU purpose is therefore not clearly defined and potential users for the research findings would need to be more clearly identified.
- It should be noted that "users" of research findings are too often narrowly defined as being policy makers. People who experience migration – in sending and receiving areas – have not sufficiently been considered as potential users of the research, and very limited efforts have been made, across all four consortia, to share findings with communities in which the research took place and find ways in which these findings could be turned into action.

Several interviewees mentioned facing challenges during program implementation related to the tight timelines for research production. These included:

- Given the nature of the research process (e.g., design, collection, analysis) and of this program, it may take longer than anticipated or planned to produce research outputs, making it difficult to remain within the planned timeframe;
- The production of the final products also took longer than anticipated in many cases given that there were different levels of clearance necessary both internal within the program (each product was reviewed by the management of the consortium) and then by the program management or by other stakeholders (e.g., local governments, etc.)

²⁵ Julia Davies, Chandni Singh, Mark Tebbboth, Dian Spear, Adelina Mensah, Prince Ansah, Conducting Life History Interviews: A How-To Guide, 2018, IDRC.



- The consortium structure selected for the implementation of the program, both within consortium and at the CARIAA level generated a large number of tasks for consortium principals relative to the allocated time (about 3-4 days per month) which often competed with research activities. This is further discussed in Section 4.5. Unexpected outcomes.



4. CARIAA's Sphere of Influence: its outcomes

Highlights

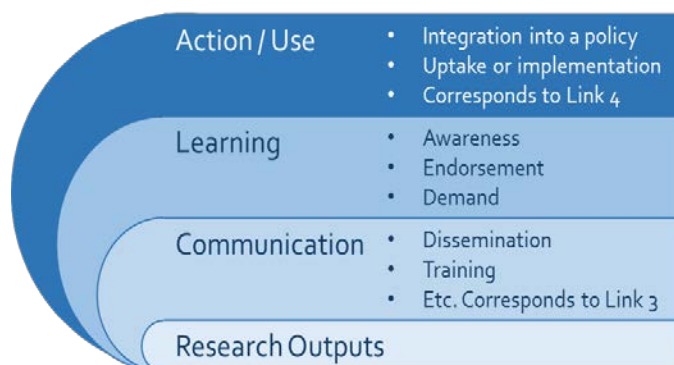
- CARIAA researchers have started to succeed in having their research used, particularly through influencing a diverse set of policies and plans. There are many examples of making policy makers aware of the implications of climate change for development.
- The evaluation team has identified that CARIAA has contributed (to different extents) to the development of over 20 local or national plans and strategies, and to over a dozen policies in 11 countries that now are using research and credible evidence for decision-making.
- CARIAA has also used research in improving capacities at many levels, from increasing awareness of policy makers and communities about climate change impacts and adaptation options to improving curriculums of formal training platforms thus setting the ground for training a new generation of researchers and institutions. The inclusion of Master and PhD students in consortia's research teams was also an important long-term investment in capacity.
- There is still a significant amount of research to be produced/finalized which would have the potential to be used for decision making and capacity building.
- The breadth of achievements varies from country to country, and in some countries research has yet to be taken up.
- There are a few examples of influence on practitioners, such as on-the-ground development NGOs or industry-wide or professional associations.
- CARIAA delivered or communicated research through different methods, which was often successful with policy-makers. This is remarkable given that it is a departure from most research institutions' typical practice of presenting research mostly to their own research community. There remain gaps to fill in terms of means and strategies for achieving this, while the audience targeted remains unnecessarily narrow.
- The program has a good to very good level of incorporation of gender and social inclusion issues, with some minor weaknesses, both as per the Gender Assessment Framework and the indicators in the evaluation matrix.
- Having the flexibility to adjust to changing conditions or to respond to unexpected demands was a key feature through which many of the outcomes described in this evaluation were achieved.
- The program led to the development or reinforcement of partnerships within each consortium, to new ways of doing research, and to institutions mainstreaming topics such as migration and gender. It allowed for local expertise to access global climate change adaptation discussions and built capacities for new climate change adaptation researchers.

CARIAA defined its outcome, as mentioned in its logframe, also labelled "CARIAA's Research Impact" in the ToC, is as follows *"Actors in planning, programme, policy and research use a range of evidence-based, tested options to enhance and support communities' livelihoods in hotspots regions in the face of climate challenges, now and in the future, in ways that benefit the most vulnerable women and men."*



Assessing outcome achievement involves reviewing what were the results of the RiU and the capacity development efforts and how were they achieved. These two aspects are part of the ToC, particularly through its Links 2, 3 and 4 (Annex I - CARIAA Theory of Change). Effective RiU should aim at influencing policy, influencing practitioners and also building capacity to use research²⁶. In addition, the ToC identifies three ways in which influence could lead to research uptake: **awareness**, **endorsement**, and **demand**. In the ToC, the “Links” point to a non-linear process to achieve outcomes and impacts, which the evaluation team has visually represented in Figure 4. While achieving **use** of research and changes in behaviors and practices will be longer term processes, the evaluation team assesses how CARIAA has set up the pathways to ensure that the uptake of research is achieved. The capacity development support by CARIAA was assessed using a commonly accepted framework that considers capacity development from the perspective of three entry points: individual, institutional and systemic/enabling environment.²⁷

Figure 4. Illustration of the process to achieve outcomes



4.1 RiU for outcome achievement

In addition to generating research outputs, each consortium developed and sought to implement a RiU strategy that would help bridge the gap between research and application of research findings with a view to generating options and solutions for adaptation for vulnerable populations. This was an important step forward from the previous DFID-IDRC partnership (Climate Change Adaptation in Africa, CCAA) that had a research-action approach that included a strategy for policy maker involvement whose outcomes were ultimately assessed as having been moderately achieved by the time of that evaluation²⁸. While the RiU approach was integrated from the onset, the First Thematic Review, which focused on Strategies for Influencing Program Outcomes (November 2016), highlighted that the “many positive, and sometimes impressive, examples of early outcomes are not well connected yet to explicit strategies to RiU at the consortium level”. It also identified some gaps in the understanding and application of RiU. This included for example clarifying that stakeholder involvement is not equivalent to RiU, and that there was a gap between dissemination and use that needed to be addressed. It also pointed out the importance of pre-existing networks and reputation for RiU, as building these networks would take longer than the program implementation period. By the time the Thematic Review was finalized, most consortia were in the process of reviewing their RiU strategies and most member institutions had hired

²⁶ There were two types of capacity building supported by CARIAA with different targets. The first type targeted those that would need to uptake the research such as policy makers and communities and the other type relates to capacity building to do research and provide capacity to researches inside and outside the member institutions.

²⁷ UNDP Capacity Assessment Methodology User's Guide, 2008.

²⁸ Le Groupe-conseil baastel. Final Evaluation of the IDRC/DFID Climate Change Adaptation in Africa Programme, 2012.

RiU coordinators. The RiU Learning Guide that was subsequently developed invited consortia to undertake “multiple scales of activity, influencing and potential impact” around stakeholder engagement, capacity building, knowledge management and communications, strategic partnerships, and of course, evidence production²⁹. Consortia used this information to update and adjust their approaches to RiU.

All four consortia have been **actively conducting quality research** in their respective fields of interest and hotspots. Overall, CARIAA has been active in 14 countries, across two continents, and 10 regions. As mentioned in Sections 2 and 3 above, CARIAA has exceeded expectations in terms of production of research (Output 1) and other outputs. It has delivered a “very good” quality of research, in terms of integrity of research, legitimacy, importance and positioning for use.

Field visits allowed the evaluation team to validate that research conducted is **highly relevant to the context in which it was conducted**. The hotspot approach has something to do with this as hotspots are defined based on major geographical features that are crucially important for the countries with high levels of vulnerable populations which also drove the consortia members to reach out to important national, regional and local processes and actors. Some stakeholders pointed out that the hotspot coverage may have been too broad and that the definition of “sub-hotspots” was necessary. Policy makers and community involvement to identify and assess needs and priorities to frame research also contributed to relevance. This was especially strong for PRISE and ASSAR. PRISE’s use of a “policy first” approach also favored relevance towards the policy context. The topic of **migration** was initially not considered priority (other than in DECCMA) but given its strong relevance for CARIAA hotspots, research and evidence-building were valuable in bringing this topic into policy discussion.

Consortia undertook a range of activities to raise **awareness, build endorsement and generate demand** for evidence from stakeholders. Two good practices on participatory methods, Transformative Scenario Planning (TSP) and the Participatory Scenario Analysis (PSA), were key elements of ASSAR’s research, bringing stakeholders together, facilitating collaborative work and thinking collectively about the challenges and solutions.

The evaluation team has found evidence that consortia used multiple channels to communicate research findings. For example, the program produced 88 multimedia products and 54 conference papers³⁰. Multimedia outputs include several videos publicly available on YouTube and that use plain language that makes information accessible to a wide public. Social media is also a mean used to bring attention to the research, which is mostly available on open access. In Kenya, for instance, PRISE has held multiple county level workshops and presented at key national events (including the symposium on ‘Climate Change and Droughts Resilience in Africa’ and the National Adaptation Technical Working Group), creating opportunities to influence national and county level strategies.

Across all consortia, there was a strong **focus on engagement of key officials and policy makers**, with an increasingly clear strategy about which stakeholders to target to maximize the probabilities of uptake.

²⁹ Blane and Van Epp (2017) RiU Learning Guide. Available online <http://hdl.handle.net/10625/56517>

³⁰ As of February 29, 2018.

As an example, DECCMA approached RiU through an adaptive management lens, actively monitoring the policy environment and the interests of stakeholders in order to adjust its approach and make it more effective. The assumption, as explained by an interview respondent, is that engaging more “powerful” stakeholders with an interest in gaining knowledge from DECCMA findings increases the likelihood of positive outcomes and impact.

4.2 Capacity building for outcome achievement

Capacity building is another CARIAA strategy to ensure that research is used. Although this is not strongly reflected in the ToC, the consortia used various approaches to this end. Capacity building was clearly identified as one of the five areas of activities required for RiU in the RiU guidance documents developed following the First Thematic Review.

At the **individual** level, providing opportunities to young researchers from developing countries to further their knowledge, work alongside established researchers and publish research is a substantial achievement for the program with the potential to achieve long-term impacts. All consortia supported students undertaking internships, Masters, PhDs and other participation in research projects, with an emphasis on supporting women and mostly from developing countries. Consortia also provided opportunities for local technicians to improve their research skills, for example in conducting surveys and analyzing adaptation options. Many of these students and researchers with new skills are now entering government positions or going further into their studies (including many accepted into PhD programs in prestigious universities in the United States and Europe). The idea in CARIAA was that this investment in new researchers will increase the cadre of minds working on findings solutions for adaptation to climate change. Several researchers interviewed indicated that the CARIAA model encouraged new and early career researchers to be lead authors, elevating their status in the research community (particularly by supporting their participation in regional and international events, for example) and improving their confidence, communication and presentation skills (sometimes changing the more common practice to have the more senior researcher as the lead author). The evaluation team was also able to record many cases of mentorship not only on research but on management, leadership, communication and stakeholder engagement.

Capacity building at the **institutional** level is also an important factor that contributes to CARIAA’s outcomes and impacts, as it took place both within consortia and outside of consortia. Some examples within consortia include:

- Learning took place through the collaboration between consortium members. While transdisciplinary research was a significant challenge³¹, collaboration did succeed at bringing new perspectives into each other’s research, and at building relationships between researchers. Additionally, CARIAA was responsible for developing the expertise of some organizations around

³¹ This is further discussed in *Section 4.5 Unexpected outcomes* below.

topics that they did not previously address. Once HI-AWARE identified migration an important issue, ICIMOD decided to hire an expert on the topic.

- The collaborative structure of the consortium also helped some organizations gain international exposure and experience, and improve the quality of their research to meet global standards. Through its involvement with DECCMA, the Institute of Water and Flood Management's (IWFM, Bangladesh) improved the quality of its research by having its researchers access the global scientific community. IFWM also benefitted from new networks brought along by consortium members.
- International exposure also helped research organizations establish effective working relationships with strategic partners who have strong local networks for knowledge generation and influencing. Collaboration with consortium members and with other consortia also allowed researchers to gain access to international recognition. This is illustrated by the number of consortium researchers that have been selected to lead several aspects of the IPCC process.
- Incorporating the research findings into the curriculum of many of the academic institutions participating in CARIAA as well as into the training materials of an extensive training program is also an important achievement in terms of institutional capacity building and long-term potential impacts.
- Cross-learning opportunities between consortia also helped build capacity. The ALR events and the Program Management Committees which included representatives from all members of the program were considered key for exchanging ideas across the program.

Capacity building oriented to **external stakeholders** contributes to building an enabling environment for policy change. This was demonstrated on several occasions during CARIAA implementation.

- As an example, information gathered during the visit to Botswana confirmed that training of national and district officials on Vulnerability and Risk Assessments (VRA) and TSP allowed to increase their awareness of, and ability to, better integrate climate change in planning and implementation. The participatory processes undertake in partnership with the University of Cape Town (UCT), Oxfam and Reos Partners (ASSAR) have also played a key role in building new capacities, both in analysis and planning, and a strengthened understanding about the meaning, usefulness and relevance of participation, especially in the context of adaptation.
- By conducting seminars with Green Parliamentarians in Pakistan around challenges faced by Pakistan due to climate change and environmental degradation, PRISE was able to raise awareness around these issues. The Parliament reportedly “unanimously agreed to devise legislation around current smog issues in the country, water waste, smart irrigation practices, deforestation and low-carbon emitting technology”³².
- PRISE engaged with and provided capacity building to a variety of stakeholders, not only decision makers but also from the private sector – from micro, small and large business owners as well as producers and representatives of producer organizations.

³² PRISE Annual Report 2018.

- PRISE and HI-AWARE held a training session for journalists in Kenya and Nepal where these were also informed about evidence and policy recommendations from some of the projects, leading to increased media coverage.
- Research from HI-AWARE was included in training programs from the Nepal Administrative Staff College, in the Disaster Risk Reduction course. HI-AWARE also developed a Climate Change Certificate course program delivered to local governments, private sector and academia in a district of Nepal.

Not all capacity building efforts successfully contribute to outcome achievement. HI-AWARE provided training to carpenters, masons and sawmill operators from the Teesta plain area on how to build climate and flood-resilient housing. However, in this case, demand for their expertise has not followed, and knowledge could be lost. Paradoxically, the interest for flood-resilient housing exists and people have been trying to replicate the houses by themselves. Further analysis may be needed to appropriately target capacity building in this case.

These are only a few examples of the multiple ways of engaging with government officials, policy makers, and communities that have been used by consortia. These contribute directly or indirectly to awareness and capacity building, and to build an environment that is more receptive to information about climate change risks, vulnerabilities, and adaptation needs. Recently, findings and lessons from the CARIAA model are increasingly being synthesized, developed into briefs and presentations, and shared, which should positively impact the importance/relevance of this research.

4.3 Achievement of outcomes

A number of cases of use of research by stakeholders have been identified. A list of the most significant outcomes is included in Annex V – List of outcomes. More specifically, most consortia aimed to influence planning, strategic and policy instruments and processes. Use in actual adaptation options or measures as well as influencing development practitioners remain however limited. The list was developed using multiple sources, including annual reports from consortium and from CARIAA, phone interviews with consortium management and researchers as well as information collected during field visits.

4.3.1 Use of CARIAA research in planning

Use of research in planning is a key pathway to the use of research to improve resilience and enhance livelihoods, with a potential of reaching and influencing development processes from national to regional and district levels. Several examples of such contributions have been identified for each consortium. The field visits contributed extensively to the identification and validation of these examples, as did progress reports and interviews.

Research conducted by ASSAR has been directly used in operational plans that are likely to have an impact on people's lives in the medium term:



- In Botswana, the national government asked ASSAR to introduce the VRA tools both into the urban planning of four districts and at the national level (with national financing) through capacity building. Actions addressed to government officials, are planned for August 2018.
- In India, the research has made significant contributions to the implementation of the Maharashtra Groundwater (Development and Management) Act 2009 concerned with more sustainable ground water management and governance.

This is the result of ASSAR's efforts to build relationships and raise awareness of key policy makers, including by seizing opportunities to provide them with trainings on topics that were not specifically related to the research it conducted but that nonetheless allowed to strengthen the relationship.

Interviews with DECCMA researchers from Ghana, India and Bangladesh reported that consortium members have established effective working relationships with stakeholders at different levels, and there is evidence of co-development of policy-relevant research with stakeholders in the three deltas (see *Section 7.2.2 Lessons from implementing RiU*). This includes:

- In India, the Odisha Government, prompted by results from DECCMA on internal migration, started monitoring migration inside the State and exchanges of population with other States. This should have bearing on the Government's capacity to design adequate services (health, education, sanitation) for migrants;
- A process to integrate soft knowledge³³ on adaptation in India's climate change adaptation plans or coastal zone development plans;
- Incorporation of gender and migration dimensions into India's Integrated Coastal Zone Management Plan;
- Provision of inputs for the preparation of the Bangladesh Delta Plan 2100, bringing migration, gender and economic dimensions into the document as well as directly providing models and data to the revision of the Bangladesh Climate Change Adaptation Plan.

The work conducted to model the hydrological cycle in the Himalaya Mountains according to different climate scenarios has received high demand although the research output did not present a clear path to use. For example, Gilgit-Baltistan, a northern Pakistan provincial government, has asked HI-AWARE to incorporate the analysis and provide advice on their adaptation plan. Other examples of outcome achievement by HI-AWARE include:

- Involvement in the preparation of Nepal National Adaptation Plan 2016, including tailoring the climate data for Nepal and the research on migration;
- Participation in the update of the Bangladesh Climate Change Adaptation Plan.

PRISE also contributed to planning for adaptation in several countries:

³³ Soft knowledge refers to ideas and concepts, often stemming from liberal arts and also includes behavioural change, what promotes and hinders it, at individual, community and institutional level, as opposed to more "hard knowledge" which is based on physical sciences. In adaptation, soft knowledge can refer to understanding factors of vulnerability, while hard knowledge would focus on physical infrastructure.

- In Kenya, PRISE contributed to mainstreaming climate change adaptation into the revised Integrated Development Plans of the four counties in which it is involved;
- It also provided inputs into the revised Kenya's National Climate Change Action Plan;
- In Tajikistan, PRISE was invited to apply the adapted tool to the dairy sector, and contributed to the National Adaptation Plan, the National Development Strategy, the National Strategy on Climate Change Adaptation until 2030 and resulting Local Adaptation Plans of Actions (LAPAs).

In most of these cases, policy contributions consisted of advice from researchers to the design or revision of the action plans. In two occasions, contributions to policy were made by the introduction of a specific tool developed by the consortium into the plan.

4.3.2 Use of CARIAA research in Policy

The evaluation team identified several cases of use of CARIAA research into policy. In most cases, the policy is still under development, with a few cases in which the policy has already been approved also identified. This includes for example, contributions by PRISE to the Intended Nationally Determined Contributions (INDCs) of Tanzania and of Pakistan. The contributions to policy were made through three different approaches. First, CARIAA research contributed to policy through the involvement of its researchers in different policy-related committees. Second, CARIAA contributed to policies and strategies either by responding to demand from policy makers or by leveraging personal contacts among decision makers. Third, collaboration with diverse stakeholders led to the uptake of research findings by these stakeholders, who became champions for adaptation action in their spheres of influence. Examples of each type follow below:

Involvement of researchers in policy-related committees:

- ASSAR's participation in the Namibia National Climate Change Committee – which involved providing guidance on enablers and barriers to adaptation for Green Climate Fund proposals and contributions to the gender and climate modelling sections of the fourth National Communication;
- DECCMA's contributions to the newly-created Ghana National Expert Advisory Group (NEAG) allowed them to push for the inclusion of experts in coastal development and population studies on the Authority's Board;
- In Senegal, PRISE is a member of the National Committee on Climate Change;
- In Pakistan, PRISE is also a member of the Climate change commission to implement the National Climate Change Policy.
- Both DECCMA and HI-AWARE participate in the Climate Change Committee and review of the Climate Change Adaptation strategy in Bangladesh.

Responding to demand or by leveraging personal contacts:

- Direct contribution by ASSAR to the drafting of Botswana's Drought Management Strategy, a policy document which is supposed to steer Government action on drought from an emergency-and-relief driven approach to a more proactive approach on drought management and resilience building;

- DECCMA is working with the Ghana Ministries of Interior and Ministries of Local Development to ensure that the Policy on Migration addresses the challenge of internal migration;
- PRISE contributed to the development of the new National Wildlife Conservation and Management Strategy for Kenya with evidence about climate change and economic benefits of wildlife.
- The HI-AWARE pilot in Pakistan was able to enact a government resolution to support the financing of the solar power pumping stations piloted by PARC.

Collaboration with diverse stakeholders as champions for adaptation:

- A Member of Ghana's Parliament working on an act on the effects of sea-level rise on coastal communities following the dissemination by DECCMA of a video on this issue;
- Ahead of this year's elections in Pakistan, PRISE is inputting directly into various political party platforms. It has also disseminated PRISE evidence to Cabinet Ministers and the chair of the Green Parliamentarians Caucus;
- In Kenya, there has been demand for findings from PRISE by female entrepreneurs in the district of Narok, to advocate for government investment in women's entrepreneurship;
- In Pakistan, a Member of Parliament has used PRISE's research evidence for a submission to the World Commission on Forced Displacement.
- In Bangladesh, the Member of Parliament and local government officials where one of the climate and flood resilient housing was built are advocating for including this type of housing into local housing government strategies.

4.3.3 Use of CARIAA research in developing programs/projects

The evaluation team identified examples of use of CARIAA research in specific programs. One such example is the engagement of DECCMA with the World Bank project "Integrated coastal zone management plan" developed by the Chilika Lagoon Development Authority in India. PRISE is also collaborating with Nestle Pakistan on water stewardship initiatives and has developed collaborations with national and regional projects and programmes like the "WISE-UP to Climate" initiative, FANRPAN, the CGIAR Technical Consortium, Future Climate for Africa, and Economics of Adaptation. ASSAR provided advice for the design of proposals to the Green Climate Fund in Namibia. Another important example is the fact that the Pakistani government is now willing to subsidize up to 30,000 units of the water solar pumps pilot-tested by HI-AWARE. Although these are important examples, the evaluation team concluded that the program did not reach out to program developers as much as it should have. This is further discussed in the conclusions section.

4.3.4 Use of CARIAA research to further advance research

The use of CARIAA research to advance the research field of many of the topics researched by CARIAA is likely to be significant, and to continue well beyond the end of the program, fueled by all the capacity building of researchers and of institutions promoted through CARIAA. At this early stage, this is difficult to assess fully.

One of the most significant ways in which CARIAA is fueling additional climate change adaptation research is through its contribution to the IPCC. The research on the impact of different climate scenarios on the hydrology of the Himalaya region is now making its way through IPCC, particularly in the discussion of a 1.5°C world. The Himalaya region had received limited attention from the IPCC until now. In addition, CARIAA researchers are participating in the IPCC in several roles, which should allow to have a lasting influence on the international climate change discussion. While these achievements cannot be attributed solely to CARIAA, there are several cases in which institutions or researchers have attributed their involvement in IPCC to CARIAA.

The establishment of strategic partnerships, such as ASSAR's and Australia's commonwealth Scientific and Industrial Research Organization (CSIRO) and the participation in international fora on relevant topics (e.g. Oxfam on UNFCCC COP and CSW62 of UN Women) is also placing CARIAA's members in a position to influence future research on climate change.

The raw data generated by CARIAA is also likely to continue to be used over time, as some datasets are made available through data depository for future use. Already the governments in Nepal and in Pakistan are making use of the hydrological modelling data produced by HI-AWARE, to inform adaptation planning.

The research coverage coming from CARIAA was evident in the many sessions that were organized using CARIAA research at the 2018 Adaptation Futures, in Cape Town, South Africa, in June 2018. Most of CARIAA institutions had a role either as organizers, presenters or panel discussants at this event, which is one of the key global gatherings of researchers working on climate change adaptation. The evaluation team conducted several interviews with researchers not involved in CARIAA and the general conclusion was that CARIAA as a program has not succeeded in "marketing" its research, as the outreach of the program's branding was limited. Researchers external to CARIAA were familiar with the research it conducted but did not associate it with CARIAA; rather they associated it with the researcher/author or the institutions/consortium behind the research. The branding of a temporary program may not be a key priority but during implementation, it would have been beneficial to be recognized by external stakeholders as a program.

4.3.5 Other uses of CARIAA research

The evaluation team has identified other ways in which CARIAA research is being used or where clear steps are being taken for the research to be used in the future.

Several of the tools adapted and used by CARIAA, such as the TSP and the VRA could continue to be used in the medium term, and steps in this direction have already been taken – such as through the adoption in Botswana of VRA methodology for future capacity building of the institutional capacity of District Officer Development personnel and District Economic Planners responsible for the District Development Plans. The World Bank has asked the PRISE consortium to share their methods for assessing the climate resilience of value chains in small businesses. This work also featured in the UNFCCC's handbook which highlights the methodology (VC-ARID).



The development by ASSAR of a Massive Open Online Course (MOOC) on RiU which is currently underway is another way to perpetuate the use of findings from CARIAA, as is the development of a RiU Handbook in collaboration with the BRACED³⁴ program. ASSAR has also been approached by the Indian Meteorological Department to plan for preparing a risk atlas for the country.

Importantly, the new evidence on migration emerging from DECCMA and HI-AWARE research has attracted attention from major development players, including the World Bank and the International Organization for Migration, with contributions made to major reports³⁵ by these two organizations. Researchers from DECCMA have also taken part in international conferences on environmental migration. According to one interviewee, DECCMA is contributing to “changing public discourse and agenda-setting on migration” at international level, and bringing a more nuanced and evidence-based understanding of the links between migration and environmental hazards. The research on the gender dimension of migration in Nepal from HI-AWARE was featured in a UN Women document.

4.3.6 Extent of outcome achievement

The evaluation team identified that the consortia have collectively, to date, achieved use of research in 11 out of the 14 countries in which they are working, in addition to global achievements such as the contribution to IPCC or to the World Bank’s Groundswell Report (see footnote 35).

They contributed to approximately 25 national level policies or plans, which, if implemented, would enable relevant evidence from CARIAA research to be applied on a wide geographical scale, i.e. at national level in 11 countries. As an example, Bangladesh benefitted from DECCMA and HI-AWARE’s contributions to the Delta Plan 2100 and to their Climate Change Adaptation plan. Nearly half of these contributions (11) were made directly into climate change or climate change adaptation policies or strategies, including two INDC and one National Communication. This means that consortia contributed to the national climate change adaptation discussion and agenda. CARIAA also contributed with its expertise to approximately seven sectoral strategies or policies, including two in the water sector, but also in the sectors of drought management, migration, coastal management, water management, wildlife, and agriculture (dairy sector), all sectors that can clearly benefit from considering adaptation needs. It is worth mentioning that CARIAA also contributed to a national development strategy (PRISE in Tajikistan) and to a specific agricultural resilience plan (Tanzania).

CARIAA contributed to approximately a dozen initiatives (policies, plans or strategies) at the sub-national level. An example of this is PRISE’s contribution to mainstreaming climate change adaptation into the revised Integrated Development Plans of four counties in Kenya. These contributions have a narrower geographical reach but solid relevance.

³⁴ Building Resilience and Adaptation to Climate Extremes and Disasters: <http://www.braced.org/>

³⁵ Rigaud, Kanta Kumari; de Sherbinin, Alex; Jones, Bryan; Bergmann, Jonas; Clement, Viviane; Ober, Kayly; Schewe, Jacob; Adamo, Susana; McCusker, Brent; Heuser, Silke; Midgley, Amelia. 2018. Groundswell: Preparing for Internal Climate Migration. World Bank, Washington, DC. <https://openknowledge.worldbank.org/handle/10986/29461> License: CC BY 3.0 IGO



Two contributions to regional initiatives were also identified, namely ASSAR's contribution to drafting "The Windhoek Declaration for Enhancing Resilience to Drought in Africa" and PRISE's participation through one of its researchers to the development of the SADC Regional Strategic Action Plan (RSAP IV) for the Water Sector.

The magnitude of the contributions to each of these policies were not estimated in this evaluation, given the multiple types of involvement and of contributions. Nonetheless, the fact that evidence stemming from quality research was integrated to some extent into these national, sub-national or regional plans and strategies are valuable achievements fully in line with the expectations established for the program at its design stage.

As mentioned above, one of CARIAA's main outcomes is also to set the ground for further climate change adaptation research, by advancing research itself, by bringing new topics into the discussion, and by building capacity for future research.

4.4 Assessment of gender and social inclusion

Beyond consideration of gender as a dimension of the Research Quality plus (RQ+) framework, CARIAA also developed a Gender Assessment Framework which is relevant to outcomes. These are fully complementary, with the gender-disaggregated data criteria which could be considered repetitive (see Annex IV - CARIAA's revised Gender Assessment Framework).

4.4.1 Gender Assessment Framework

- a. **Intersectional perspective:** The intersectional perspective has been introduced in a few occasions throughout the CARIAA research. Only studies and outputs produced by ASSAR, and by DECCMA to a lesser extent, can be considered as having developed a solid intersectional approach as a systematic basis of their research work.
- b. **Conceptual approach to vulnerability resilience, migration and/or adaptation:** The reliance on recent scholarly developments and understanding of gendered vulnerability, resilience and adaptation is visible in CARIAA's work. All consortia have integrated in their hypotheses some dimensions related to the latest knowledge on gender in the context of migration and adaptation.
- c. **Masculinities:** Masculinities or men's issues remain a topic sporadically considered across consortia. Except for some particular cases, when CARIAA's researchers thought of using a "gender lens", they assimilated the concept to *women*, considered as a separate and isolated group, with a particular focus on their practical needs, circumstances and interests. Gender is in few cases treated under a Gender-and-Development (GAD) approach, where relationships between women and men are considered as the central study focus. When this is done, although only in a few cases, men and masculinities are given specific attention, as was the case in ASSAR's research that focused on deconstructing assumptions about vulnerability.
- d. **Data:** As it is presented in Section 4.4.2 in more detail, even if with different degrees of integration into the research, the four consortia have demonstrated a globally strong reliance on sex-disaggregated data, having provided gender-differentiated contextual analysis of vulnerability,



adaptation or resilience in a wide proportion of their work packages and actions. Some exceptions have nevertheless been identified (such as in the case of PRISE and HI-AWARE, for instance, where gender-sensitive data collection has not been systematic) but internal processes of learning have allowed for improvement in the framework of future actions.

- e. **Scale:** CARIAA is promoting and achieving an interesting level of gendered discussions across consortia and across hotspots. Gender issues are being incorporated at several scales, from the household level to the policy arena. In particular, ASSAR has reached a good level of depth at the private-life sphere (at the household and intra-household levels).
- f. **Research methods:** Evidence of gender and socially sensitive research methods used by CARIAA's researchers have been identified. Even if they might remain insufficiently highlighted in some cases, the adoption of these methodologies has become a more common practice among the four consortia during the second half of the program, even if methodologies have not been homogeneous across the different hotspots. For instance, DECCMA's researchers working on soil science, econometrics, climatology, environmental sciences, etc., have reported to have changed their research methods after having understood gender is an important element to take into consideration.

Global rating according to the Gender Assessment Framework

The analysis of the outputs considered in the RQ+ assessment together with the outcomes observed in the framework of the field visits has resulted in the following rating for the CARIAA program:

Table 9. Global rating according to the Gender Assessment Framework

<i>Criteria</i>	Intersectional perspective	Conceptual approach	Masculinities	Data	Scale	Research Methods
<i>Rating</i>	Good	Very good	Needs improvement	Good	Average	Good

4.4.2 Extent to which gender and social inclusion are reflected in the outcomes

The following analysis presents a summary of the evidence collected from data analysis, interviews and field visits for each consortium informing each indicator and using the evaluation matrix sub-questions about gender.

1. **Gender has been incorporated in the consortia' strategies, planning and logical frameworks, mainly at the outcomes level, in a significant and increasing degree, either from the beginning or along the way.**

ASSAR and DECCMA have incorporated gender in their logical frameworks – at the impact and outcome levels, defining specific gender-related indicators. For both consortia, vulnerability and migration have been two relevant entry points for approaching social differentiation and gender issues. While both have adopted a gender mainstreaming approach in all their research works, considering gender as a cross-cutting issue in all their research activities, ASSAR gave a central place to the theme, treating it as a



research stream by itself. Vulnerable groups, social inclusion and equity have been prioritised by PRISE and HI-AWARE in their strategies, without giving a specific attention to the gender dimension on a formal basis. For both consortia, gender and women's issues are relevant as cross-cutting themes to certain research areas and components, as are other social differentiation markers like livelihoods and ethnicity.

2. Quality knowledge on gender drivers and conditions leading to vulnerability in the context of climate change is being sufficiently generated and disseminated, according to the objectives and outcomes defined.

The CARIAA program is being innovative in contributing to international intellectual debates on how best to integrate "gender in climate adaptation" research (which remains a very incipient body of knowledge). Efforts have been championed to draw together case studies from across the four consortia and CARIAA countries into a joint analysis in anticipation of the UN Commission for the Status of Women 2018. The cross-CARIAA working group on Gender and Equity is making progress in terms of coordination, involvement of increasing number of researchers from each consortium, and generation of quality knowledge on gender drivers and conditions leading to climate change vulnerability in the countries covered by CARIAA. The generation of quality research outputs with a gender-sensitive approach or specifically centered around gender relationships and its implications for climate change adaptation has become a common feature for the four consortia, even if there are significant differences in terms of timing. While PRISE and HI-AWARE have been making efforts to increase their production of working papers, case studies and other outputs, their translation into consolidated academic papers is still pending which reduces dissemination opportunities. DECCMA's focus on migration and ASSAR's innovative approaches on intersectionality, social difference and intra-household dynamics have been the motors of a strong set of research efforts providing sound evidences on the importance of gendered vulnerability assessments, gender power relationships, gendered patterns of mobility and gendered aspirations, and their consideration at the policy level.

3. Gender/social disaggregated data has been generated, considered and used in the research and uptake evidence, in different degrees according to each context

The four consortia have been able to produce and use some level of sex-disaggregated data through different gender-sensitive methodologies and tools (household questionnaires, separated in-depth interviews with males and females, gender-sensitive focus group discussions, surveys carried out by male and female enumerators, etc.). ASSAR, PRISE and DECCMA have incorporated sound gender disaggregated data collection methods in most of their research. Even if gender aspects were not fully captured from the program's outset, HI-AWARE has made deliberate efforts to better understand gender dynamics in certain locations and frameworks, and to ensure that women's perspectives and priorities are considered within their research work.

4. CARIAA gender-related research is being used but under the assumption that influencing policy will lead to more effective, appropriate and gender-sensitive adaptation outcomes on the ground



With a few exceptions -such as DECCMA's input to the Draft National Policy for Women in India or ASSAR's one to the 4th National Communication of Namibia-, gender-related contributions in terms of policy engagement and uptake are modest at this stage, particularly due to the fact that most of the research work has been recently produced or is still in the pipeline. Some recent initiatives, participations in multilateral events (such as ASSAR's participation to the UN Woman 62nd session of the Commission on the Status of Women) and demands from international climate change agencies show a promising interest in CARIAA's gender-related work. An important caveat and concern about the RiU approach which all consortia face in all areas of research, not only gender, is the assumption that influencing policy will lead to more effective, appropriate and gender-sensitive adaptation outcomes on the ground. It is a necessary yet insufficient condition, as other assumptions (and risks) will influence the effectiveness of the policy. CARIAA researchers recognize that they have little power to ensure that policies will be followed through in effective ways or will translate into gender-equitable benefits since none of the consortia members are policy makers (a key missing element in the membership of the program).

5. CARIAA research community's capacities and involvement in gender have been clearly reinforced. This information is disaggregated by gender and social group

The creation of the CARIAA Gender and Equity Working Group represents a clear will to promote collaborative work across CARIAA and to foster researchers' involvement in gender specific research. The contribution to CARIAA outcomes by creating awareness, conducting capacity building activities and promoting mentoring has been key. An example has been the ASSAR-led training provided at the University of East Anglia to a group of development researchers from 10 countries. All consortia have been supported through external consultants hired specifically to help them evaluate their weaknesses and strengths to meet their gender-related goals. Young researchers (female and male) from the South have been trained to improve their knowledge and interest in gender mainstreaming. Capacity building self-assessment surveys and other internal actions have been undertaken by HI-AWARE and other consortia in order to assess if there have been any changes in the capacity of consortium institutions and members in relationship to gender. Most CARIAA researchers self-report greater knowledge and ability conduct do gender-sensitive research since the beginning of the program.

Table 10. Global ratings for gender-related indicators

<i>Indicator</i>	Gender incorporated	Quality knowledge generated	Disaggregated data	Integration policy level	Research community's capacities and involvement
<i>Rating</i>	Good	Very good	Good	Average	Average

4.5 Unexpected outcomes

Throughout the implementation of the program several unexpected outcomes, both positive and negative, were encountered in relation to the structure of the program and the scientific approach and findings. The **collaborative structure of the program** in itself brought both opportunities and challenges that in many cases were unexpected outcomes or not fully represented in the ToC. Collaboration was

observed between institutions of the same consortium as well as between consortia. An example is the Promoting Research into Use through Networking and Engagement (PRUNE) in Ghana, implemented by an institution from ASSAR and one from DECCMA, who adopted a joint approach to enhance RiU. The Working Group on Migration is also an example of cross-consortium collaboration. Collaboration within consortia is a foundation of CARIAA's approach: in DECCMA and HI-AWARE, most research papers are the result of collaborative efforts between three or four institutions. Collaboration also allows work across ecosystems, as is the case in India where a partnership between HI-AWARE, DECCMA and ASSAR has been institutionalized. PRISE research, namely on value chain and on migration has also greatly benefitted from exchanges and cross learning between member institutions in semi-arid regions. Bangladesh is another country where HI-AWARE and DECCMA are working closely in making decision makers and the public aware of climate change impacts and options and have brought to the national discussion their research, such as through their participation in the updating of the Climate Change Adaptation Strategy. BUET and BCAS have conducted joint presentations of their research to government officials.

The benefits of the collaboration that has taken place in CARIAA over the years - collaboration across institutions, but also across countries, disciplines and thematic areas – cannot be overstated. Many researchers interviewed during the course of this evaluation regard this as one of the key achievements of the program. CARIAA provided a space for people and institutions to learn to work together, to run complex research designs, to share research methodologies that were hitherto kept virtually secret (due to competition for early publication of research findings) and to collaborate on joint publication, and all this happened in a context of stark cultural, linguistic or organisational differences. This legacy is a significant, partly unexpected, outcome of the program. Learning also happened in the area of transparent, accountable management of research funds, and research management in general.

The collaborative structure is also favorable to mainstream gender and migration topics across CARIAA. While this was not a strong point of the program initially, it has really increased in the second half of its implementation period.

The creation of the OSF allowed turning a challenge into an opportunity, and several informants have mentioned that it is a strongly positive example of **adaptive management**. Its creation gave a clear purpose to the cross-consortia working groups but also came with a budget, which is a non-negligible aspect given the multiple pressures associated with program implementation. Among others, it allowed for the 1.5°C paper to be produced in a timely manner for the IPCC special report. While the working groups had initially been created along the lines of common interest between consortia, this did not prove sufficient to instill the production of collaborative outputs among consortia. The OSF provided the required structure – and resources – to help consortia organize the preparation of collaborative work outputs, proving a successful model for cross-consortium collaboration. Groups that evolved from the working groups prepared joint proposals to conduct research on specific issues and deliver specific outputs and outcomes. One example is the Migration in South Asia proposals which led to a synthetic paper on migration with inputs from DECCMA, ASSAR, PRISE and HI-AWARE. Overall, adaptive management was a key feature of the program which enabled self-criticism and adjustments based on actual needs instead of pushing for a rigidly established agenda that would consider changes as failures.



The **use of the hotspot approach** was partly meant to stimulate multi-country or cross-regional comparative research. The Second Thematic Review already points out the “cross-regional, cross-sectoral, collaborative, interdisciplinary and comparative approaches to the research” brought about by the hotspot approach and described as “uniquely beneficial”. Despite being “difficult and costly to implement”, it “generated benefits that most of the researchers had not anticipated”. This assessment corroborates this finding: several respondents – including non-CARIAA researchers or practitioners – emphasized the strengths of the hotspot approach.

There are several examples of the **convening power of the consortia**, illustrating the value added of this model in regards to the complexity of issues at stake. The HI-AWARE partnership works across countries and territories that are in conflict with each other, while undeniably sharing environmental concerns. The choice of partners to build this consortium, in particular of ICIMOD who is recognized as neutral and with high reputation, has enabled research and subsequent discussions to take place about climate change adaptation in the Himalayas that would not have otherwise happened. Another example is the involvement of organizations like Oxfam, a development and humanitarian non-governmental organizations (NGOs), or a policy-advocacy organisation such as Kenya Market Trust in Kenya, in research consortia about climate change adaptation: these unlikely partnerships mobilize actors that are complementary on the “RiU spectrum” and it has been reported as a successful and enriching learning experience for both sides (research community and development organisations)

CARIAA’s type of partnership has also posed some challenges. Even within the same consortium, applying the same methodologies across different countries and ensuring comparability has not always been possible, as has been the case in ASSAR for the work in Namibia and in Botswana, for example. Even when methodologies are aligned, different implementation rhythms sometimes affected the possibility to compare results. Collaborative research also calls for research management skills that were developed over time and delivered good results in some cases, and more mixed results in others.

According to some informants, transdisciplinary and collaborative research have led researchers to challenge and learn from each other in new ways. However, several researchers have pointed out that transdisciplinary research has often not been possible in practice, and that researchers from different natural sciences had difficulty working together. This is analyzed in a paper entitled “Large-scale transdisciplinary collaboration³⁶” that emphasized the need for careful design of such research projects, and also of management structures and management skills that build positive relationships and allow for some flexibility to pursue unexpected collaborations. The very fact that this paper is being produced, along with several others reflect an additional unexpected outcome from CARIAA, in all the outputs and **lessons that were derived from the collaborative model** and that now generate interest from existing and upcoming large, transdisciplinary research programs. These lessons cover the themes of RiU, collaborative learning, knowledge management, consortium approach, etc. All of these themes were

³⁶ Cundill, Georgina*, Harvey, Blane, Tebboth, Mark, Cochrane, Logan, Currie-Alder, Bruce, Vincent, Katharine, Lawn, Jon, Nicholls, Robert. J., Scodanibbio, Lucia, Prakash, Anjal, New, Mark, Wester, Philippus, Leone, Michele, Morchain, Daniel, Ludi, Eva, DeMaria-Kinney, Jesse, Khan, Ahmed, Landry, Marie-Eve, “Large-Scale Transdisciplinary Collaboration for Adaptation Research: Challenges and Insights, Global Challenges 2018, 1700132.

Available at <https://onlinelibrary.wiley.com/doi/epdf/10.1002/gch2.201700132>



initially inward oriented (for internal use only). However, CARIAA will be producing synthesis documents on these topics and informing other collaborative adaptation research programs.

Managing CARIAA also generated numerous challenges and opportunities. A significant one, that likely impacts many of the others, is the fact that implementing and **managing such complex research structures** is very time-consuming, as is the entire process of synthesizing findings, reporting, and translating research findings into briefings meant for a larger audience. According to several respondents, management and synthesis are sometimes performed at the expense of research activities. Balancing these competing priorities is therefore a real challenge, especially given that research itself is an activity that often takes longer than expected. Working with such complex structures has also involved some challenges not expected either, such as:

- Withdrawal of some partners, leaving some key issues unaddressed and/or excluding some countries (as in the case of not including Egypt and the Nile Delta in DECCMA);
- Underperformance of some consortium members;
- Interpersonal issues that affect program implementation;
- Financial tensions, related to contractual aspects, but also to important exchange rates variations;
- Retention, and in particular the management gap left when key coordination personnel leave their position, as was the case within DECCMA in late 2017.

A challenge frequently faced while working in developing countries and for which CARIAA is no exception is the risk and disruption posed by **electoral processes**. This creates a period of void and uncertainty while the country adapts to its new leadership. In the case of CARIAA, it also generates the need to rebuild relationships with officials to pursue buy-in and uptake of research. That being said, this can also provide new opportunities or unforeseen entry points in some cases, as was apparent in Kenya with the change of government last year. Given the duration of the program, and more generally speaking, the time required for RiU, electoral processes were faced by most of the consortia. To limit the adverse effects of elections, some teams in Pakistan targeted political parties, ensuring the inclusion of climate change adaptation in their platforms.

Another challenge identified is intrinsic to the nature of RiU and would certainly benefit from further thought. While the RiU process involves establishing and maintaining long-term relationships with stakeholders who are in a position to influence policy, they may not always prove receptive to evidence provided by research, or may steer research into a specific direction at the expense of others. Working with specific stakeholders may also limit the scope to document inequitable power relations that reinforce the vulnerability of some groups at local level. Respondents signaled that implementing RiU does not guarantee that influencing policy will lead to more effective, appropriate and gender-sensitive adaptation outcomes on the ground. There are many ways in which policy can be implemented and many steps between drafting a policy and translating it into practice. The capacity, integrity and knowledge of those responsible for implementation play a key role in results achievement.



5. Beyond CARIAA's influence: potential impacts

Highlights

The evaluation found limited examples in which communities are already making decisions based on the evidence generated by the CARIAA research. For the most part, this has been an issue of timing ("distance and path" between outcomes and impacts). Nevertheless, the evaluation found that many of the outcomes, particularly those related to influencing policies, strategies and plans at all levels and the investment in capacity building have a good likelihood of achieving impact, with time.

- Stakeholders targeted at national and local levels were for the most part strategically selected.
- The implementation of RiU will take time to contribute to impact.
- The evaluation team also identified missed opportunities. Stakeholders like development practitioners or communities were not targeted as strongly, and when they were, time and resources for medium-term engagement could not always be invested, which limits potential impacts.
- Capacity-building efforts are a long-term investment that is complementary to current research and research uptake efforts. It raises awareness and prepares future leaders to address adaptation issues.
- CARIAA's high-quality research is very valuable in advancing research on climate change adaptation and is relevant to significant portions of the world's most vulnerable population.
- The use of pilots provided an opportunity to put research into actual cases of adaptation measures in Pakistan, Bangladesh, India and Nepal. Large-scale impact of these pilots depends mostly on the consistency in Government and others responses for scaling-up.

In the ToC, the CARIAA program identified impact with the following statement: *"Key stakeholders, including the most vulnerable communities have the capacities (institutions, systems, practices and skills) to enable them to make evidence-based choices for coping with current variability and potential future impacts of climate on development."*

The program's impact level goals were quite ambitious given the duration of its implementation and the consortia's ToC indicate that the program was not set up to deliver impact during the time of the program³⁷. For CARIAA as a whole, the focus of the program is not on delivering direct benefits to communities and enhancing their resilience, but rather on building evidence and capacities for stakeholders at all levels to make adaptation decisions based on this evidence. The evaluation found limited examples in which vulnerable communities are already making these decisions and choices or directly using the evidence. For the most part, this is an issue of timing ("distance and path" between

³⁷ Except for PRISE, whose logframe goes even beyond CARIAA's and aims for impacts on economic growth and population's resilience.



outcomes and impacts) between the research being conducted, produced, and taken up by policy makers, practitioners or through capacity building and the impact on communities. The ToC of the program did not consider the time that it takes from outcomes to impacts, particularly at scale, within the implementation time of the program.

The evaluation found that many of the outcomes, particularly those related to influencing policies, strategies and plans at all levels and the investment in capacity building have a good likelihood of achieving impact, with time. Therefore, the analysis of the likelihood of impacts relates to discussing the value of stakeholders that are targeted for the uptake of research, the capacity that was built and the type of evidence that was generated.

Stakeholders targeted: good choices but some missed opportunities

Across all four consortia, there is a clear tendency to target policy makers (politicians and government officials) as main potential users of research. This is explained by the need for consortia to use their limited resources to target stakeholders that have the most potential to bring widespread, lasting policy changes in an efficient way. The examples of research uptake by policy makers discussed in the previous section on outcomes are a favorable sign that targeting this type of stakeholders was a good decision likely to contribute to the achievement of desired impacts.

Another group that was targeted successfully was the research community, both at the country and at the international level. They may prove useful to bridge the gap between research and use particularly to increase the validation and reputation of the research generated. According to one external respondent, it might have been useful to reach out to more national research institutes from the Global South (e.g., Indian national research institutes), which have a capacity to influence political decisions and to increase visibility of research findings.

As mentioned in previous sections, other stakeholders were targeted but in a more limited way and some opportunities may have been missed for long lasting impact, for example, civil society organizations, NGOs, private sector and other practitioners remained limited. In particular, the idea that evidence from research could become bankable investment projects was not fully explored as an important approach to achieve impacts. The skill set to transform or translate these ideas into investments were not present in the consortia membership. Those that have these skills, development practitioners or even venture capital experts should have been more explicitly targeted. Another group that could support the achievement of impacts that had limited presence in CARIAA was the media sector.³⁸ Journalists could support the dissemination and translation of research to the general public and even influence policy makers' uptake of information. Other forms of communication tools discussed during the ALR in Cape Town include: participatory theater, popular education, visual arts, interactive media and film. Several young researchers involved in CARIAA expressed a keen interest in these, and a few did explore the use

³⁸ HI-AWARE for example, supported the training of journalists from each of the countries.



of these alternative media forms under CARIAA³⁹. This may be an area of relevance for future work. Finally, as pointed out earlier, economic valuation of the implementation of solutions coming from the evidence or of the potential impacts of climate change given the new research was often lacking, indicating that economics skill was often not adequately included in the program.

Some specific activities targeted communities. Tools like the TSP and the PSA (developed by ASSAR) proved useful for building awareness and capacity at community level. HI-AWARE's pilots are generating evidence, mostly at individual or community levels, about effective adaptation options. One example, is the case of district development plans in Kenya that have changed the district level infrastructure development based on evidence of climate change impacts. Likewise, the adoption of the Vulnerability Risk Assessment as a key planning tool by the District Development Office in Botswana sends a positive signal that local-level planning will now better integrate context-specific vulnerabilities. These examples were brought up during the field visits, which provided an opportunity for the evaluation team to discuss impact at local level, but were limited to only three countries (Botswana, Kenya, Bangladesh). Beyond this, the evaluation found only limited evidence that CARIAA contributed to enhance communities' decision-making capacities with regards to adaptation.

Capacities built: long term investment

As presented in the outcomes achieved section, CARIAA members were successful in bringing new knowledge to the main institutions responsible for adaptation-related topics in most countries in which they worked. Furthermore, it was also discussed that the type of research (and the hotspot approach) was very relevant to the climate change issues under discussion in each of the countries. In this sense, CARIAA's contribution to institutional capacities was strong although as pointed out, the presentation of this evidence in ways that is appropriate and useful to the policy makers still have weaknesses that could be fixed before the end of the program.

Capacity building and awareness-raising events targeting individuals are complementary to institutional capacity building. While it was more sporadic – often focused on a specific issue - this contributes to the overall enabling environment. They are less effective from the point of view that these individuals may move positions and thus losing the capacity within the institution.

As mentioned in the outcomes section, capacity building of the institutions and of the researchers involved in CARIAA, as well as the program that provided capacity to new researchers is a good long term investment and will contribute to overall decision-making capacities, as these new researchers become policy makers and as institutions continue to feed evidence to stakeholders. In this perspective, the use of the RiU approach contributed to build a skill set and an awareness among researchers about use-oriented research that may contribute to long-term impacts.

Evidence provided: moving the research forward

³⁹ In fact, one of the ASSAR teams facilitated a session on Participatory Theater in the context of Adaptation Research at Adaptation Futures, and according to CARIAA management, this session received much interest from AF participants, showing perhaps a growing awareness on the need for innovative methods to bridge the gap between scientists and community actors.

The evidence base generated by CARIAA members was assessed as high-quality and relevant by the evaluation team and discussed earlier. The research brought new information, new approaches, and innovative views of the topic of climate change adaptation to the countries involved and also has advanced the field globally. For instance, DECCMA's inventory and prioritisation of adaptation options offers opportunities for better targeting of vulnerable groups and more attention to context-specific responses. PRISE's knowledge coming from research has increased awareness about potential climate change impacts (and what they mean at the community levels) and has developed inventories of adaptation options. The work on modeling of the hydrological cycles against different climate scenarios in the Himalayas by HI-AWARE has raised the attention to the devastating effects of even a 1.5°C increase in temperature on potentially two billion people.

While research is being communicated through multiple channels to stakeholders, evidence indicate that a gap remains in understanding the best way to ensure that evidence can be readily used by the stakeholders that most need it. Furthermore, the program itself is still trying to come up with clear and synthetic messages (adapted to different audiences) on what the sum (aggregated) of all the evidence generated actually means at the country, regional and sub or continent levels.

Globally, CARIAA has been active in 14 countries, across two continents, and 10 regions. The achievements varied highly from country to country and from hotspot to hotspot. While relevant knowledge was successfully generated in all regions, the potential for achieving capacity changes at the institutional, systemic, and individual levels varied across countries and regions. Engagement with policy makers have brought issues like migration to the table for discussion, and demands for evidence and for policy inputs demonstrate a strong likelihood that these issues will be tackled in the long term. Communities have been involved in varying ways, either through active participation in local-level consultations and planning (in PRISE especially) or through direct engagement in participatory processes (in ASSAR especially). Moreover, much of the research involved in-depth interviews with local informants (e.g. with migrant and non-migrant households in DECCMA and in PRISE). What has remained more limited, perhaps with the exception of PRISE in Kenya in the pilot districts targeted when work on local development plans and budgets is on-going, is the involvement of communities in the design (or co-design) of adaptation options based on research findings. Also found lacking is the medium-term engagement with implementing partners (local or international NGOs or other organizations) to turn research into context-specific adaptation projects which would reinforce and build sustainability of achievements.

Interestingly, one external respondent noted that CARIAA researchers have learned that "extractive research is neither ethical nor sustainable", meaning that in a sense, CARIAA has contributed to redefining research agendas through more inclusive approaches, including in disciplines that do not traditionally build on local knowledge or seek to bring in the perspectives of marginalised groups.



6. Investing in research

Highlights

The investment in funding was relatively small when considering that most members of the program (not lead institutions) received on average about CAD2 million over 4-5 years and produced 10-20 research papers, began the process of influencing policy, conducted extensive capacity building and actively participated in the program.

The evaluation concludes that the program was a positive and worthwhile investment given it produced high quality and innovative research (given the geography and the topic of climate change adaptation), that was very relevant to advance any current or future adaptation measures and/or feed into decision making based on credible evidence in the geographies they were conducted. This research is considered foundational work in many topics.

Research topics were diverse and relevant to the needs of the geographies where they were conducted and targeted key policies, strategies and plans on climate change developed or under developed in each of the participating countries. The program also included a complex set up with almost 20 major research institutions providing financing for research to all of them.

The evaluation found that the investment in research supported by CARIAA was worthwhile given the large volume of research generated, the diversity of tangible and intangible benefits generated to its members and to the global, regional and national discussion on climate change impacts and adaptation, and the large mobilization and capacitation of a diversity of actors. This research is considered foundational work in many topics (e.g., climate science, migration, gender, adaptation effectiveness) in its target hotspots.

The majority of the funding and budget was dedicated to support grants to the 19 members of the consortia. The lead institutions in each of the consortium received more funding than the other members of the program given their coordinating role. The funding for lead institutions ranged between CAD 3.3 to CAD 6.9 million, and averaged CAD 5.3 million. As of September 30, 2017, each consortium member received on average about CAD2 million spread over 4-5 years.⁴⁰ As discussed earlier, for many of these institutions, the participation in CARIAA not only provided additional funding to work on one or two research issues that may not previously have received funding (e.g., climate change modeling, adaptation, links to migration and gender, implementing a research for use approach) but also it provided:

- exposure to the international, regional and national discussion on climate;
- an opportunity to increase their capacity on specific topics (for example, on migration and gender in the context of climate change);

⁴⁰ CARIAA, Financial and Technical Update to Progress Report: 14th meeting of the Executive Committee (January 2018).

- funding to participate in a network of researchers; and
- opportunities for new and upcoming researchers to conduct and get exposed to research.

Therefore, the value of the investment in these institutions should be considered beyond the number of research products delivered since there were other intangible benefits. These intangible benefits were in part supported by the approximately CAD 5.8 million dedicated to research integration, out of which CAD 1.6 million were for knowledge management and RiU, 1.7 million for cross-cutting research work and 1.1 million for the OSF, which was established after the beginning of the program to promote cross-consortium research on specific topics⁴¹.

Participating institutions, through several interviews, indicated that they were satisfied with what they considered they were getting out of their participation in the program, including when compared to their own investment in the program (which was considerable as counterpart).

In terms of use of the funds, the drop in the value of the Canadian Dollar posed financial challenges to most consortia who had to adapt to these changing conditions⁴². CARIAA's flexible management structure allowed to address such unexpected occurrences while maintaining the focus on quality research and RiU.

The program has contributed to close the knowledge gap on climate change science and adaptation measures/options in the selected hotspots. The contribution was particularly noticeable during the Adaptation Futures 2018 conference which included more than 30 presentations and panels where CARIAA research was featured. Discussions with climate change experts external to CARIAA at that event also revealed that although not initially recognized as CARIAA research, the experts recognized the contribution and work of the consortia and member institutions.

The program's research has been influential in several very relevant policies and plans in most of the participating countries as presented in Annex V and discussed in Section 4.3. In addition, consortia seized opportunities to provide capacity at all levels, from formal academic training to skills training, to making decision-makers aware of climate change impacts as well as opportunities for adaptation. In comparison with the CCAA program, CARIAA had a much stronger and sustainable influence on organizational capacities and achieved more demand for and use of its research in multiple policies and plans⁴³.

The evaluation concludes that the program was a positive and worthwhile investment given that it produced high quality and innovative research (for its the geography or topic), that was very relevant to advance any current or future adaptation measures and/or feed into evidence-based decision-making in the geographies they were conducted. The research topics were diverse and relevant to the needs of the geographies where they were conducted and the integration of the RiU approach added to the value of this research.

⁴¹ *Ibid*

⁴² *Ibid*). Most institutions were working with underspending that helped the process of readjusting budgets to cover the losses from the exchange rates.

⁴³ Le Groupe-conseil baastel. Final Evaluation of the IDRC/DFID Climate Change Adaptation in Africa Programme, 2012.

7. Conclusions

The previous sections provide the evidence coming from the extensive data collection and analysis on how the program has progressed and what it has delivered in terms of outcomes and impacts. The evidence was presented according to the main questions from the evaluation matrix, basically according to outputs, outcomes and impacts. The current section presents the conclusions according to the three key questions of the evaluation.

7.1 Was CARIAA-funded research high quality?

The program has generated a large volume of research and its quality received an overall rating of “very good” according to the RQ+. CARIAA is considered one of the largest (if not the largest) research program on climate change adaptation in terms of funding, network of active researchers and products. In connection to the context of research, most of the research areas in which CARIAA invested are mature fields but in most cases, they are new to the geography of the program or to climate change adaptation or are using new data sets. Research has contributed extensively to the science of climate change, in particular with regards to understanding its impacts and magnitude for new environments (e.g., deltas, semi-arid and Himalayas) or in connection with socio-economic issues (e.g., links between migration, gender and climate change adaptation). The partner institutions forming consortia – universities and other research organizations, think tanks, NGOs - brought their respective academic and non-academic research track record, policy understanding, knowledge brokering expertise and knowledge of the field and of stakeholders. One shortcoming of the program that may have affected positioning the research into use was that none of the member institutions represented directly the decision-making sphere⁴⁴. For example, the program could have included as members, relevant lobbyist organizations, strong professional associations or policy think-tanks with direct links to decision and policy makers. Positioning for use was assessed as good, with a very good approach by PRISE that started the program by consulting with decision makers about their needs on research. A large proportion of research is still very recent or unpublished as many key papers are still being written and this is affecting the uptake of findings. Communication of findings and translation of research into “user-friendly” formats has taken place only in the final phase of CARIAA and still needs to be further developed.

7.2 To what extent did CARIAA meet its objectives and intended program outcomes?

The overall conclusion is that CARIAA achieved its three objectives and has started to demonstrate achievement of outcomes, particularly the short term outcomes. The ToC planned for research uptake to flow from demand for research which was to take place in years 4 to 7 (2015-2019). At the time the

⁴⁴ Decision makers’ representatives could have been an association of mayor, governors or members of parliaments or the professional associations of policy makers (e.g., associations of government strategies or planners or economists).

evaluation was conducted, the consortia still had six months of implementation ahead. Additional time is necessary for impacts to be achieved at scale, but an analysis of the outcomes demonstrates that some valuable foundations have been established in terms of capacity, research, as well as climate sensitive policies and plans. The following section provides the assessment for two of the three objectives, engagement and capacity development. The assessment of the third objective, knowledge generation was discussed above.

7.2.1 Engagement: promotion of research uptake

CARIAA mostly focused on trying to influence policy makers with varying levels of success. There are many examples of research and tested adaptation options being used, adapted or incorporated into policies, strategies or plans as presented in earlier sections of the evaluation. CARIAA also demonstrated successful examples of capacity building as another means to ensure that research is put into use at the institutional level by incorporating the research into curriculum or training materials, by supporting individuals in pursuing formal degrees and by supporting local governments and stakeholders on learning to think about climate change and incorporating this thinking into their decision making.

There were few examples on influencing practitioners, such as on the ground development NGOs, international development institutions or industry-wide or professional associations. ASSAR's use of participatory methods (e.g. the TSP), created space for influencing practitioners and designing adaptation solutions at the micro-level, or through PRISE's work on the livestock value chain which identified concrete opportunities for investment by local authorities in the district authorities.

CARIAA is not systematically reaching out to the large think tanks and NGOs involved on the ground on climate change adaptation. Most of the researchers participating in CARIAA are not well acquainted with the sphere of "implementers", International NGOs, NGOs, civil society organizations or professional organizations that can actually conduct programmes on the ground and make changes: this lack of communication between these two spheres – research and development actors – was not adequately bridged in CARIAA. Examples such as the case of ASSAR's collaboration with a range of development partners and HI-AWARE's collaboration with institutions like PARC and ICIMOD that have extension programs were the exception rather than the norm, leaving a gap in terms of potential use of research.

CARIAA delivered or communicated research through different methods. It seems that the practice of looking for dissemination opportunities (e.g., presentations or producing policy briefs) was an interpretation of RiU, which is short of the actual influencing of policy, creating capacity or influencing development practitioners. Whenever research was completed, researchers looked for ways to communicate it to decision making audiences. For many of the research institutions and researchers this was a departure from their normal practice of presenting research to the research community. Some of the most fruitful approaches to this dissemination has been when a consortium teamed up with an organisation with already deep links into the policy sphere and a clear mandate to lobby policy change in a particular area, such as ICIMOD for the South Asia region or KMT for PRISE in Kenya.



Translating complex research findings in messages that can be understood by those that are expected to use them, most of whom are not scientists or researchers remains a challenge for CARIAA. This challenge was still evident in trying to communicate CARIAA's key messages in its final stages: gender, migration, impacts of 1.5°C temperature increase or effective adaptation. As an example, many policy makers need a message that is presented in terms of people affected and economic valuation of potential damages, and CARIAA research left mainly untouched with a few exceptions, the economic evaluation of the climate change impacts and of the adaptation options. Messages and communication approaches have to be tailored in order to speak to different stakeholders. Ensuring that research is presented according to the needs of users and in a way that is accessible to them requires a specific skill set and the allocation of resources that CARIAA teams did not systematically make available.

Throughout the achievement of CARIAA's outcomes, and the process from producing evidence, communicating it, building knowledge and stimulating use, having the flexibility to adjust to changing conditions or to respond to unexpected demands was a key feature without which many of the outcomes would not have been achieved.

7.2.2 Lessons from implementing RiU

As explained above, each of the consortia took a different approach on how to implement RiU, in particular after the mid-term evaluations, which recognized that the program was not advancing enough on that front. The last two years of the program have seen an important improvement on the implementation of RiU and have generated lessons:

- Timing is important, having and offering the research at the right time when the user needs it can make the difference.
- There is a need to have internal expertise on how to do it, in particular for some of the institutions participating in the program, for which RiU was relatively new. The fact that each consortium appointed a RiU coordinator was a positive step in this direction.
- The reputation of the participating institutions matters. Members of the program have excellent reputation as research or extension institutions. The program increased the credibility and reputation of the national institutions by exposing them to international organizations.
- Developing policy briefs that try to translate the research into advice or actionable evidence for the policy maker does require training. This was a new approach for some of the members of the consortia, and being exposed to this new concept will allow them to keep "use of research" in mind in their future projects
- There is a need to have an entry point (e.g., particular person or a particular draft of a policy or strategy in need of being revised or implemented) into the policy development process. RiU is still very much based on personal relationships and right timing. Having the leadership of the consortium institution with direct access to the policy maker or politicians is a great advantage.
- Conducting and updating on a regular basis a stakeholders mapping to understand what these stakeholders need and want from an evidence point of view. This is particularly important when considering government policy and decision makers that may change with elections or



representatives of the private sector which needs may change due to changes in markets for commodities or consumer demand.

Limitations and challenges

- Local communities, the vulnerable stakeholders that the program tried to affect by improving their resilience, have their own culture, traditions, and ways of envisioning change. Introducing new technology is not a straight-forward process, and it requires a good understanding of local context and socio-cultural dimensions. The uptake of research findings by these groups therefore takes time, and requires engagement – and trust-building – at the local level, which not all researchers have the time, skills or resources for. As already stated, CARIAA was not designed to deliver changes at community level within the lifetime of the program, and when it was achieved, it was the result of collaboration between researchers, NGOs and development practitioners or agencies.
- The government officials with the power to incorporate new approaches or evidence into the policy or plan may not readily accept new evidence or have the means to change their practices based on these new findings. Government structures can be quite hierarchical and slow moving, with a strong legacy of “working in silos”, not fully conducive to working on integrated topics such as climate change adaptation.
- On the other hand, some of the institutions participating in CARIAA considered themselves as independent and critical of programs or policies supported by the government, particularly those coming from universities and research centers. Becoming too close to the development or design of these policies would compromise their independence. This is a limit to the RiU process that cannot be ignored, as the integrity of the research process should remain a priority for institutions and researchers involved.

7.2.3 Capacity development

Capacity was one of the objectives of CARIAA and in many ways, the foundation for the achievement of outcomes and impacts: without providing capacity to the “actors” that are supposed to uptake the evidence, outcomes and impacts cannot be achieved. CARIAA has been successful in providing and supporting capacity building but in most cases it is too early to tell if the targeted audiences have incorporated that capacity, if they have changed their behavior or way of working. Below are some areas that can be considered successful.

Successful partnerships: CARIAA promoted, from the start and through their implementation approach, partnerships. Some of the striking features of CARIAA that encouraged the partnership approach included: lightness of management, open dialogue and engagement, creating spaces for doing things differently and being self-critical, and a flexible approach. Partnerships were particularly successful within each consortium and to a lesser degree at the program level (most researchers identified themselves with their consortium rather than with CARIAA). Each consortium should be considered a successful community of practice, whose partnerships will probably last beyond CARIAA. The ALRs and the program’s executive committee meetings were the main occasions when all members built a collective and a program identity.



Doing research differently: Many researchers reported that they are now doing research differently. The consortium approach brought to the table an interdisciplinary team that was not used to working together. New topics/approaches were also brought onto the table for some of them, and many researchers acknowledged having learnt from working with researchers from disciplines they never engaged with before: physical science and engineering with social researchers and migration and gender with engineering and natural sciences.

Mainstreaming new topics into institutions: Migration and gender were two topics that have been mainstreamed into many of the member institutions, as part of their core programs. Many more researchers – including from natural sciences – are more aware of the need to use a gender lens in their research.

Regional expertise present in global discussions: Members of many of CARIAA institutions are now part of the IPCC network as lead authors or coordinators of chapters that can communicate findings directly to the international networks;

New climate change adaptation researchers: CARIAA has invested in providing many new opportunities for students and early-career researchers to conduct research, improve their confidence on their research, publishing having their names as lead authors, and improve their comparative advantage when presenting themselves for further studies or for jobs.

8. Key Recommendations

The following recommendations are directed particularly to CARIAA management as well as the two donors, IDRC and DFID, rather than any particular consortium. They are intended to ensure that the program achieves its intended outcomes and sets the stage to improving the likelihood of achieving its impacts in the longer term. They are also intended to the donor, investment and research communities interested in building on the successes and opportunities set forth by CARIAA. Finally, the recommendations overlap to a certain degree with the ideas identified as promising outcomes that would benefit with a short extension of CARIAA but the evaluation considered needed CARIAA management attention.

Research into Use

1. In the short term, the program should strengthen its focus on translating the research that has been completed and validated into communication pieces that are useful for policy makers, capacity building and for practitioners. The program should select a few key papers that could be really impactful in the next few months because they are direct inputs to the needs from practitioners or policy makers. To select these topics, the program should conduct a quick assessment around the membership to identify actual needs from users. One option could be for each of the CARIAA members to conduct a brainstorming workshop with key development practitioners working on climate change adaptation (e.g., development NGOs, think tanks, politicians, government officials and private sector) in each of the countries/regions to identify the intersection between needs and research already completed by CARIAA.
2. Bring into the program for the last few months expertise from large research institutions/think tanks and networks of local NGOs in the CARIAA participating countries (public and private) that are already connected to the national policy processes and active on implementation and on the ground in climate change related work. Their technical support to CARIAA should focus on identifying areas of need for the development community on which CARIAA could provide evidence, from the existing research. In some cases, the presentation of evidence may need to be modified to better support solutions.
3. IDRC and DFID should increase their efforts to communicate internally and to their development assistance programs the findings, results, evidence and opportunities coming from CARIAA. It will help identifying areas of evidence that are of interest for funding for these two important donors.

Capacity development for communication/dissemination and knowledge management

4. Much still needs to be done to communicate the impressive research and evidence coming from CARIAA. In the last stretch of the program, CARIAA should bring expertise on how to communicate and disseminate scientific information to different audiences and provide training to the researchers. CARIAA should also provide experts to directly support, via technical assistance, the communication and dissemination initiatives of particular consortia. Furthermore, the program should conduct training on climate change adaptation to members of the media in each of the

countries so to create a network of allied journalists that can support the dissemination and communication of the research.

5. Before the program closes, there should be an overarching outward-oriented knowledge management strategy, building on the existing knowledge management platform to deal with extensive knowledge generated (e.g., products) from CARIAA. The strategy should focus on organizing and making information available, beyond just storing the knowledge in the individual consortium IDRC's databases.

Converting research and evidence into pilots to be tested

6. The program should select a few research outputs and transform them into pilots or demonstration solutions that can be tested and documented in the short term. There are only a few research ideas and evidence that have been piloted. Some examples of potential areas that could benefit from pilot testing are: (i) the research on participatory processes which have led to the emergence of adaptation solutions at local level; (ii) the research on linkages between migration, gender and vulnerability to climate change should produce ideas for testing on the ground; (iii) actions to guide and build policy makers' and implementers' capacities towards a better integration of gender-inclusive measures into adaptation strategies.

Converting research and evidence into packages for development investment

7. In the next few months, CARIAA should provide support to consortia to bring on board the skills that will help them translate research, evidence and even tested pilots into business models that can be presented to investors, financiers and venture capitals. This would support the scale up and replication of these ideas accelerating the likelihood of achieving outcomes and impacts.

Gender

8. Given that "gender, migration and climate change" is still an emerging field of research, CARIAA should actively participate in the international debate about this topic, bringing their research and evidence. It should also reach out to the donor, bilateral and multilateral communities interested in this topic for further support on research, for actual investments in piloting or implementing the innovative research, findings and evidence.

Future programs

9. *How can we learn faster than climate changes?* Any future program on climate change adaptation research should focus on ensuring that learning, at all levels, is ahead of the changes in climate that are already taking place. CARIAA's experience should be an inspiration in responding to that question and should be further recorded and analyzed for future learning. Since CARIAA is still working on completing analysis and synthesis of major research and evidence, the program should consider conducting a new learning review focusing on: areas of research into use, incentives for learning from community and vulnerable groups, how to achieve change in behavior of decision-makers; how to build (gender-sensitive) leadership for adaptation at institutional, local, and community-level.



9. Which results offer particular promising opportunities to secure or realize further outcomes and impacts?

Throughout the evaluation, the team consulted with members of the consortia as well as with climate change experts about results from CARIAA, particularly at the outcome and impact levels, that could offer promising opportunities to realize or secure further outcomes and impacts with more time, resources, scaling up or replication. These ideas were also triangulated with the findings, conclusions and lessons extracted throughout the evaluation by the team, including findings from the survey conducted in June 2018 to gather ideas from consortia members. In addition, the evaluation team was asked to identify new research questions emerging from the CARIAA research. The team focused on three areas to answer to the third question of the evaluation: (1) in the short-term horizon outcomes that could benefit from an extension of CARIAA relying on the existing relationships and structure of the program (6 months to 2 years); (2) in the medium term horizon, those outcomes that given the experience of CARIAA warrant a broader conversion beyond CARIAA and (3) new research questions identified in CARIAA's research that could be addressed in future programs or a new call for reconfigured consortia.

Some specific ideas are included in this analysis as examples coming from the survey conducted with CARIAA members and in particular from the visits to three participating countries. By no means, mentioning these ideas in the document implies they are the only ones nor is it an endorsement as further analysis would be required. The team would like to invite the management of the program and each of the consortium to develop a transparent process (as proposed in one of the recommendations before) to identify, particularly, those areas that would benefit from a short-term extension of CARIAA.

9.1 Outcomes that would benefit from a short-term extension of CARIAA

The analysis brought out several ideas and concepts that the evaluation team considers as potential areas that could benefit from a short-term extension of CARIAA (6 months to two years). Most of these areas revolve around optimizing the use of the research and evidence as well as bringing to the consortia special expertise that may have been lacking. Some of these areas are also considered in the recommendation section since they would benefit from a rapid action from CARIAA management. Since these ideas in the short term are linked to the shortcomings or opportunities found by the evaluation team they are organized according to the discussion areas presented in the previous sections. For these short-term ideas and specific suggestions to be realized they need to have the current set up of network and consortium structure.

Completing research through a prioritization process

It was mentioned above that the program is still producing research results, with an impressive pipeline of draft research. It would be good to support their full **publication** process, in particular as consortium working papers. This includes, for instance:

- The work being conducted by PhD students in Botswana, Namibia and South Africa, on ecosystem services, community agency and local planning processes on the one hand and on governance systems in the context of adaptation policy and practice on the other (ASSAR)
- Completing the analysis of data collected under the Critical Moments research stream in the Himalayan region, covering 4 rivers basins (Gandaki in Nepal, Indus in Pakistan, Testa in India and Nepal) and 12 study sites (HI-AWARE)
- Further analysis of the gender dimension of the extensive research conducted on migration patterns in the 4 deltas and lessons for policy-makers based on key findings (DECCMA)
- Completing the work in progress on governance and water (project 7) and concluding the synthesis work on the main areas of research conducted (PRISE)

Pushing these new publications through processes of inclusion into peer review journals, conferences and training material for different capacity building activities should also be a short-term priority of CARIAA. This is important also to continue the update of CARIAA research in international discussions on climate change, such as in the upcoming IPCC processes.

Research into Use

The program should prioritize a few activities for additional funding and time that could maximize the implementation of the Research into Use approach, taking into account lessons that have been identified in the last 2-3 years of the program and striking a balance between uptake and influence at different levels.

1) **Key messages for communication.** The program as a whole has not produced (although working on it) a synthesis of their key messages that can bring together findings from across all hotspots. The program has identified five areas: migration, gender/social equity, effective adaptation, 1.5C degree impacts and Research into Use. The key messages for these areas should be fully developed and prepared since they will provide the high-level synthesis of all of the research and they will provide a key communication package on the achievements of the program. The documents produced should clearly identify the audience they are targeting (no one single document will be able to target all of the potential audiences so there is a need to tailor these documents to specific audiences, using common messages across).

2) **Translating research.** Some of the consortia are still trying to “**translate**” their research into clear briefs targeting policy makers, private sector, development actors and local communities. CARIAA should develop a transparent process to select which topics should be further supported to do this and, as indicated in the recommendations, identify the necessary expertise to support the researchers in preparing these documents and build their capacity for further policy influence for the long term in the



process. Some examples identified by the evaluation team that should not be considered as exhaustive include:

- Support the IFWM team to improve the messages provided in their policy briefs and to expand those messages to other audiences beyond the Delta Plan 2100 and the Bangladesh Climate Change Adaptation Strategy. (DECCMA)
- Further engage with communities to further testing alternative livelihoods, for example, for pastoralists in Kenyan drylands based on research undertaken in Northern Kenya by the University of Nairobi and Oxfam and on supporting more resilient ecosystem-based adaptation in Bobirwa drylands based on the research led by the University of Botswana.. (ASSAR)
- The work related to groundwater vulnerability and management in India (namely in the Maharashtra and in the Mula-Pravara river basin) needs to be further synthesized and communicated (ASSAR).
- Research findings on migration – in the coastal deltas and semi-arid regions especially requires more efforts in communication and use, so as to bring a change in perception among stakeholders and in particular policy-makers about migration as an adaptation strategy. This could not only mean the development of more “user-friendly” outputs, but also research to identify the best strategies to convey the message (DECCMA, PRISE)
- All consortia have had some experience with engaging and influencing local-level planning and decision-making processes on adaptation. It may be worthwhile to bring these experiences together into a specific research paper, drawing on the insights of researchers on “how change happens” at national or local level in a range of different contexts (with a focus on lessons learned and levers of change).

3) **Further influencing policy.** There are new topics of discussion in CARIAA that should be now fully pushed into **influencing** the decision-making processes and climate change negotiations at all levels, from international to national and regional. CARIAA could provide additional support to ensure that the research is completed, that the work at the national level is compared across similar environments (even across continents) and transformed into information that will be useful for decision makers. Some specific topics where the research is almost done and the potential for influencing is greatest include:

- Migration. As indicated before, the topic of migration, as a cross-consortium topic, was analyzed towards the later part of the program. There are several papers that are waiting to be published and they also would need to be translated into information for decision makers. One specific topic that should further explore through analysis that could potentially have a great impact relates to the role of women in migration in the HKH region from a point of view of the demographic changes (and consequences on the socio-economic and cultural domains) since most of the migrants are men, leaving behind women as heads of households (HI-AWARE). In a similar fashion, DECCMA has produced work on female-headed households in the context of coastal migration, that needs to be brought to the attention of policy-makers in India, Ghana and Bangladesh.
- Research on the role of private sector in climate change and in particular on value chain and also on the role of women entrepreneur, conducted by PRISE, are additional topics that could receive additional support. It could also be one of the basis to support further policy development, including for instance the development of a national strategy for livestock for Kenya. In particular, research of



this caliber should be provided to international forum such as the World Business Council for Sustainable Development or the Canadian Global Affairs Commission. Both are interested in opportunities for the private sector to engage in the climate change discussion, not only as an affected party but also as an investor.

- Further support the development of policies, such as the process of fully developing and seeking approval for the County Integrated Development Plans currently supported by PRISE in Kenya.
- Another topic that should be further developed before the closure of CARIAA relates to gender. CARIAA has produced significant new primary data on gender that can contribute to the global discussion. However, a significant proportion of the research findings coming from the data have emerged during the last year of the program and many of them are still in the pipeline. Consortia have little room for maneuver since they are running now out of time to influence policy uptake based on these results. It would be useful to communicate these findings not only in policy fora on gender and adaptation at national level, but also to ensure they reach organizations like the Asian Development Bank, the African Development Bank, UNDP and others involved in funding large-scale, multi-country adaptation projects. These organizations show an increasing interest in financing gender-sensitive adaptation programs, and could benefit from accessing research evidence on why gender and intersectionality matter in adaptation initiatives.

Capacity development

One topic that was identified as needing immediate attention relates to capacity on how to identify financial resources to support further research or to implement/finance pilots. As explained above, CARIAA has focused on providing capacity and trying to reach the international/multilateral climate financing institutions, examples are provided of cases in which DECCMA or PRISE have invested or have interacted with the World Bank and/or the GCF. These are very good activities but CARIAA should support an exploration of other climate change financing sources. This would imply bringing to CARIAA expertise on this topic. Sometimes funding is available within the national budgets as was the case explained earlier for Pakistan's funding of the scaling up of solar pumping for water extraction. Other times, potential organizations, public and private, may be looking for investment opportunities in climate change, particularly those that are backed up by credible research or that have been tested through pilots and are ready for commercial funding or scaling up.⁴⁵

Improving and sustaining the achievement of expected outcomes

Several activities under CARIAA were affected by the changes in budget allocations due to the exchange rate fluctuations. They should be reconsidered. One example is the pilot on climate and flooding resilient housing in northern Bangladesh. The initial plan was to pilot this model in 12 regions but given the shortage of funding they were reduced to 6. An extension of the pilot should not only include the testing

⁴⁵ Baastel recently conducted a study for Global Affairs Canada to identify possible European investors on climate change based in Europe. Many of these institutions provide a diversity of products, procedures and levels of funding that could be matched in interesting ways with the evidence and approaches emerging from the CARIAA program.



of the architecture for different environments but also testing different business models for providing financing for the local communities to afford this construction. The scaling-up of solar panels in Pakistan requires sustained engagement of the HI-AWARE team who has the technical expertise and needs to work closely with the Government of Pakistan for another 4 to 6 months for the scale up to take place. Continued support to this team is therefore essential to realize impact at scale (the Government of Pakistan is committed to installing 30,000 solar panels, according to HI-AWARE researchers).

Another example of support by providing capacity (e.g., monitoring tools, technical information, etc.) that could help the sustainability of the outcomes is to select a few of the policies or strategies that have been influenced and translate them into concrete actions in different sectors or levels (e.g. districts). For instance, in Kenya, there is now a wildlife strategy that would need to be implemented and ensure that climate change aspects are taken into consideration. Similarly, in Bangladesh the Delta Plan 2100 will be under implementation and CARIAA could provide capacity to different stakeholders on how to monitor that the actions are planned and implemented taking into account climate change impacts and adaptation options.

The evaluation team would find value in consortia selecting two or three research outputs and transforming them into **pilots or projects** at local level involving different partners, including local government, NGOs, community-based organizations to be demonstrated/ground validated or implemented. One key partner for doing this could be development NGOs that are already working on the ground in developing climate change adaptation ideas, especially in the areas of alternative livelihoods, community and ecosystem based adaptation.

Some examples of possible pilots or projects worth pursuing include:

- Testing of alternative livelihoods for pastoralists in Kenyan drylands, in particular related to pasture management, feeding lots and camel raising. Several responded to the need to build on the established peer-to-peer learning activities that included demonstration models, by producing learning and knowledge sharing materials that would consolidate their results, and further engage with communities to generate acceptance.
- Counties in Kenya are now looking at developing investment on beef fattening working with SMEs, and on local slaughterhouses, building on the findings of PRISE on livestock value chain and on land tenure. CARIAA could support the further piloting and upscaling of these efforts, with appropriate research and monitoring resources associated to further document this process and the lessons learned from this piloting.
- Drawing on research on critical moments to fine-tune the design of adaptation projects in the Himalayan river basins, based on a more nuanced understanding of the needs of communities in critical moments of stress associated with climatic events (HI-AWARE)
- Designing a pilot project aimed at reinforcing local management of ecosystem services in the drylands of Botswana, based on ASSAR research findings on the decline of these services and existing capacity at local level to manage grasslands, pastures and waterways more sustainably
- The work done by ASSAR teams in Ethiopia on the *Proposis juliflora* invasive species could also be turned into a program testing diverse options to deal with the problem at local level, with different



types of support (private investments and/or public support), based on the scenarios prepared by researchers and development specialists, with inputs from communities.

- Piloting a project in Senegal to implement PRISE findings about the linkages between remittances from migrants and household-level and community resilience (the aim might be to support a community in using the remittances effectively to improve their farming practices, to invest in alternative livelihoods for women or to invest in solar panels).
- Supporting a small number of SME's involved in the cotton sector in Pakistan and/or Burkina Faso to implement concrete steps for climate-proofing their activities, based on PRISE's Value Chain Analysis in the context of climate change.

9.2 What CARIAA research would warrant a broader discussion beyond CARIAA?

The extensive research conducted by CARIAA as well as its experience with RiU and managing a research program using a consortia approach has generated several experiences that should continue in particular beyond the CARIAA program and participants. These research topics are more universal than the hotspots and countries in which CARIAA worked.

Results that would require continuity in order to realize their potential

The topic of **effective adaptation** continues to be discussed among climate change adaptation experts and has become one of the central topics within CARIAA. There is a need to continue the research where CARIAA's contribution to the discussion would be around its research on: (i) understanding how adaptation works within cultural norms in enabling and putting barriers to community-based adaptation; (ii) the most vulnerable and marginalized hotspots; (iii) adaptation across different landscapes and within the rural-urban continuum that tests inclusiveness and sustainability; and (iv) how effective adaptation should be measured (e.g., what does it look like?). Ideas for further research emerging from the discussion on effective adaptation at the ALR in Cape Town include:

- The importance of scale: distinguishing short-term benefits of responses (e.g. digging tube wells as a response to drought) from long-term consequences (e.g. intensifying the problem of groundwater depletion), and the need for scenario planning informed by reliable data on ecosystem dynamics and limited availability of water resources (e.g. river-basin-level planning);
- How to develop adaptive capacities in a context of uncertainty and changing baselines, with new ways of thinking and doing, and flexibility and dynamism as core dimensions?
- Developing tools for measuring change, including behavioural change, which is key in adaptation and which, according to several external respondents, was not a priority in the CARIAA program yet deserves greater attention;
- How to avoid maladaptation? For instance, migration can be an adaptation option for vulnerable groups, but it may also further disrupt fragile ecosystems (e.g. coastal zones as migration



destinations) by putting additional pressure, or lead to new forms of vulnerability for the migrant group (as shown by CARIAA research on migration);

- In Pakistan further work on the cotton value chain, incorporating the informal sector, where women have a key role to play and in Kenya, doing similar analysis of impact of climate change on crops more broadly and their value chain from a point of view of food security.

Research into Use: there is valuable experience in CARIAA now on RiU, acquired in particular in the last two years. One key element for further research is the design and use of development tools, participatory research methods and creative or art-based approaches (e.g., including plays, visual arts, participatory theater) that support and facilitate the dissemination, appropriation and mainstreaming of research findings.

Also worth examining is the integration of RiU with Participatory Action-Research (PAR). The RiU approach in CARIAA was deployed in different ways across the different consortia, but for the most part, policy-makers were seen as a key group to influence and therefore as a key target for RiU activities, which reflects a particular view point on “How change happens”⁴⁶. The earlier program funded by IDRC and DFID, CCAA, heavily relied on Participatory Action-Research, which places more emphasis on communities as agents of change, thus reflecting a different viewpoint on “how change happens”⁴⁷. Several external respondents interviewed during the CARIAA evaluation emphasized the need for both policy-level change and localised, context-specific adaptation. Some integration of the RiU and PAR approaches may be a useful way of thinking about adaptation research, as the two approaches are complementary and their combined use may deliver outcomes and impacts that neither one nor the other can deliver on its own.

Transversal or related topics such as the intersection of gender, food security and climate change, or issues of empowerment and leadership, even if identified as essential, have not been sufficiently explored to produce outcomes in the framework of CARIAA. The intersectional approach (taking into consideration the complex interactions of gender with other social categories) remains sporadic. The study of power relationships between women and men, and between different interest groups, require more attention, as they shape inequalities. Amplifying the voices of marginalised groups, especially rural women who bear the brunt of climate change impacts, is critical, and researchers have a responsibility in creating spaces in which these groups can voice their concerns and aspirations, and be heard. Getting the views and needs of marginalised groups onto the political agenda for adaptation is something researchers need to be concerned about. Gender equity in the allocation of adaptation funds is also essential for adaptation to deliver gender-sensitive outcomes, and further research on gender and international and national climate finance would be a useful contribution in that direction.

⁴⁶ Duncan, G., 2016, *How change happens*, Oxford University Press, Oxford.

⁴⁷ In the Final Evaluation of the CCAA program, it is argued that the Participatory Action-Research approach « enhanced the involvement of local communities in adaptation research by providing the opportunity to link them with researchers and decision makers and bringing research closer to adaptation needs, priorities and local realities”. See Lafontaine, A., Oladipo Adejuwon, J., Dearden, P., Quesne, G., Final evaluation of the IDRC/DFID Climate Change Adaptation in Africa Programme : Final report, 2012, Baastel, p.V.



Opportunities for upscaling or replication identified by research and other CARIAA products

There are few cases that were identified as having potential, at this point, for upscaling and replication. One example could be to upscale the experience of implementing the TSP approach with community groups at the regional level through more formalized platforms. Another example, is to be able to upscale and replicate the pilots implemented in CARIAA, for examples those in HI-AWARE in Pakistan, India and Bangladesh. A last example could be the research conducted by PRISE in Kenya to update climate data and scenario for arid and semi-arid counties (21 so far), which could be expanded to the growing number of countries now considered in this expanding zone (46 in total)

Research that has concluded but needs more time to fully realize outcomes or impacts

To further realize outcomes or impacts, some of the research needs to make links to new stakeholders different from the ones presently included in the consortium (or the program) particularly to help package the evidence into business ventures.

Some of the more complex, integrated research between culture and adaptation, ecosystems and natural resources management and adaptation, value chain, governance and adaptation, or gender and adaptation would benefit for further research and application through pilots or demonstrations before they fully realize outcomes. Some concrete examples:

- adaptation policy and practice that take into account EBA and CBA,
- adaptation policy implementation in the Indian Bengal and Mahanadi deltas.
- Adaptation in the Volta Delta: Conducting a GIS mapping of adaptation infrastructure in the Volta Delta and correlating it with migration data to get a fuller understanding of how infrastructure impacts individual adaptation choices. A focus on improving the irrigation system in the Volta Delta was also suggested as well as exploring infrastructure options in the region.

One specific area that would bring about outcomes and impacts through further engagement is where the policy context for adaptation is “mature” and now needs to be translated or “operationalized” into concrete measures. This refers, for example, to national strategies that CARIAA research contributed to and closely followed (through research and stakeholder engagement), like the Wildlife Strategy and the National Climate Change Action Plan in Kenya, the Drought Management Strategy in Botswana or the Groundwater management policy in Maharashtra (India). The point here would be to translate these new or revised policies and plans into concrete actions in different sectors and at different levels. CARIAA researchers who have been involved in these policy changes in Kenya and Botswana appear to be in a good position to offer support and guidance to selected district-level administration for the operationalisation of the Wildlife Strategy and National Climate Change Action Plan in Kenya, and the Drought Management Strategy in Botswana. The question of how to move from policy to implementation, through what processes and organisational changes, is a central one in adaptation research, and would be worth investing in in the short and medium term. Capacity-building of officials and technicians involved in local planning processes is critical, and can go a long way in creating a positive environment for thinking about adaptation as was evidenced by the work of PRISE in Narok district in Kenya for instance. The interest generated at district and national level in the Vulnerability and Risk



Assessment (VRA) as a methodology for rethinking local development and adaptation plans in Botswana (as part of ASSAR research) shows that there is great scope for CARIAA researchers to contribute to changing the policy environment at different levels.

9.3 New research questions/areas emerging from CARIAA

Throughout the evaluation, researchers participating in CARIAA pointed to the evaluation team new areas of research that have emerged and would benefit from research and support from similar programs to CARIAA. The following bullets are some examples of these.

New areas of analysis:

- The experience of CARIAA regarding the use of the hotspots, managing research and researchers in a partnership/consortia platform and the application of the RiU approach should be used to identify other hotspots around the world and expanding research in these regions.
- Analyze the impact of the investment made on capacity development at the individual and institutional levels within each of the consortium but also through academic programs. Researchers have expressed an interest in knowing what kinds of career pathways the PhDs and MSc holders trained by CARIAA follow and will be following. Some form of research or monitoring method could be designed to track progress and assess CARIAA's medium and long-term contribution to a cadre of trained professionals in adaptation. Another area of interest is the extent to which participating institutions have changed their behaviour and ways of working in relation to climate change as a result of being part of the CARIAA program.
- Bring in economic analysis to provide Governments with economic evidence on the current and future costs associated with climate variability, predicted climate change, and different adaptation pathways as policy-makers respond to economic signals. Assessing the cost of non-action and the incremental increase in adaptation costs over the years has proved to be a useful strategy to steer action on the part of Governments⁴⁸. It can also support decision-forming process around budgetary allocations to help direct resources to sectors and districts most at risk to climate change.
- Develop tools for measuring behavioural change, and design research aimed at better understanding how to promote change in institutions, communities, private sector. Research questions include: what arguments/approaches do institutions, communities, and enterprises respond to positively by changing their behaviour? What factors inhibit or promote attitudinal changes? What are the conditions under which institutions adopt more flexible approaches, embrace failure as part of a learning process and uncertainty, invest in transparent management and less vertical, top-down and more horizontal, bottom-up decision-making processes? What

⁴⁸ See for instance: Baastel Consortium, 2015, *Economic assessment of the impacts of climate change in Uganda*. https://cdkn.org/wp-content/uploads/2015/12/Uganda_CC-economics_Final-Report2.pdf



strategic partnerships are needed to create a favourable environment for community-led adaptation? For equity and sustainability?

- CARIAA has demonstrated the importance of communicating knowledge tailored to different audiences. Efforts are still needed to translate the concepts in climate change science, to fill knowledge gaps, bridge the divide between scientific knowledge and local knowledge, and link impacts to adaptation options in context-relevant ways. There is an important function that was partly missing in CARIAA that should be considered in the future and that should be seriously brought into the climate change discussion in research: more effective brokering, knowledge management and learning to support an acceleration of change towards climate change.⁴⁹

Adaptation measures

- The use of adaptation measures for delivering better services calls for further research. The idea that what is “good for adaptation could also improve the delivery of services” is a change from the idea of adaptation measures as a separate and distinct activity that communities, private sector and governments need to do. Research needs to highlight the potential for win-win situations, even if they are few and far between. For example, CARIAA has conducted research on how remittances from migrants are used in the “sending” communities. The discussion should move to facilitate the use of these remittances as part of the local development plans. This type of initiative will improve and shape the developmental narrative internationally about climate change, highlighting also the opportunities.
- CARIAA has conducted research on the impact and opportunities of climate change in mostly in the private sector formal value chain. This is innovative research but more research should be conducted to understand the impacts within the informal economy, which represents a significant part of the economy in many countries, and one in which women are disproportionately represented (e.g., the care economy of household helpers in South Asia countries, or the informal food sector in many African countries). Research questions here include: How are informal economies – especially those in which women are over-represented – likely to be impacted by climatic and environmental change, directly or indirectly (e.g. through changing migration patterns)? What measures have been successfully put in place to make informal sectors resilient to climate change in regions where they are particularly exposed to risks? How can the role of women as change agents be strengthened in the informal sector?
- The interplay between adaptation and conflict is another area of research interest that could be developed. Conflicts in natural resource management are very common, and are likely to increase as resources become scarcer and environments more strained (e.g., one key resource under constant conflict is water and CARIAA has provided some new research on the impacts of climate change on hydro cycles, for example). The role of conflicts in hindering or enabling the

⁴⁹ For a detailed and valuable discussion of the importance of knowledge brokering in the context of adaptation to climate change, see Lindsey J. et al. (2018) “Designing the next generation of climate adaptation research for development” *Regional Environmental Change* 18: 297-304.



emergence of adaptation options, the need for new skills and approaches in conflict resolution and cooperation mechanisms, and the readiness of different actors – public, private and civil society – to manage conflict-prone situations, to minimize risk and to engage in constructive dialogue are all areas that warrant research attention. Participatory approaches designed and implemented by development actors – such as the Transformative Scenario Planning – could have a useful role to play here, as on-going CARIAA work on the use of the TSP and VRA in different contexts has shown that such processes help in creating spaces for open and transparent dialogue, which is an important step towards building trust and identifying solutions to problems through collective action.

- Collective action is another area of research that connects to adaptation, governance and equity. Adaptation options most often happen through collective efforts, and through multi-stakeholder processes. Gaining a better understanding of the conditions under which collective action can flourish, barriers to collaboration, and incentive structures that can trigger collective action would constitute a valuable contribution to the climate change adaptation discussion.

Ways of working in climate change adaptation

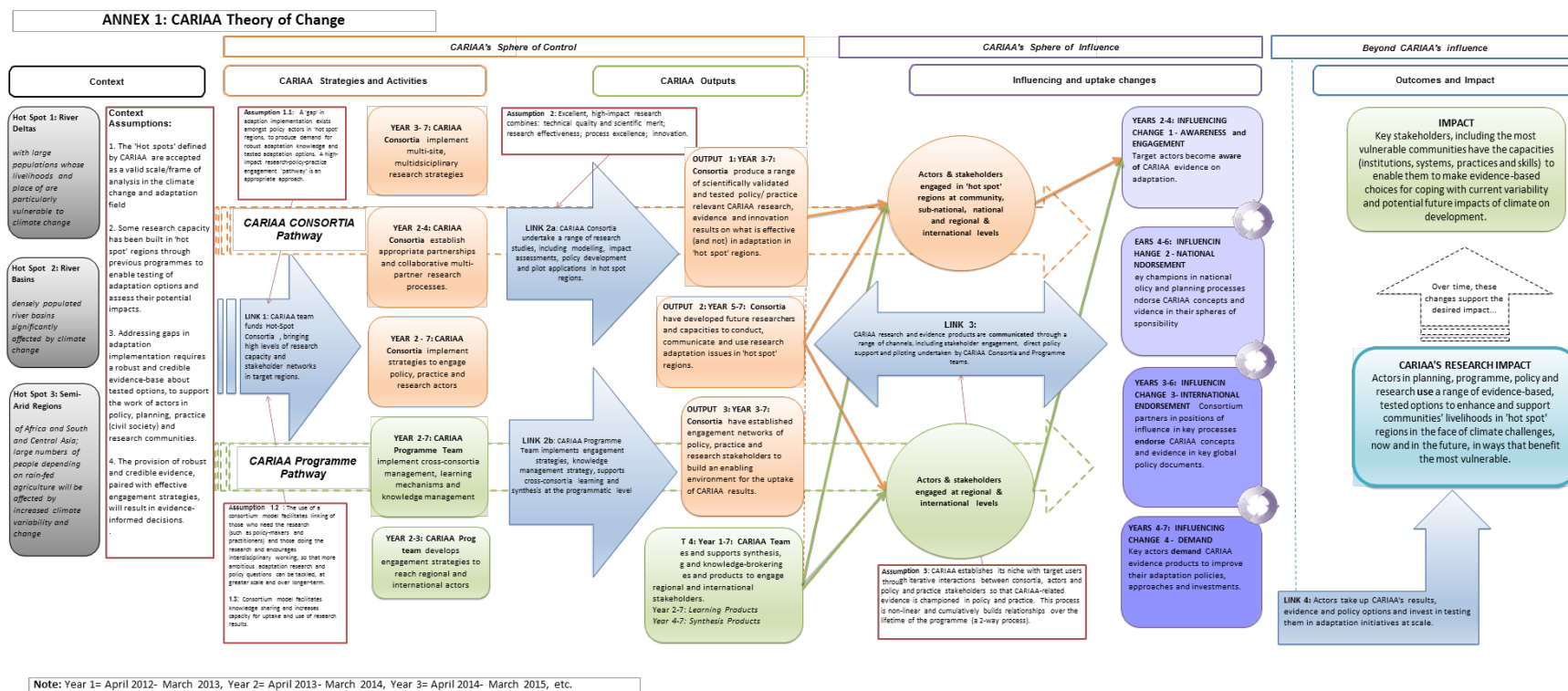
- CARIAA promoted new partnerships between research institutions and decision makers, particular through interacting with government agencies preparing development, natural resources management or climate change adaptation policies, plans and strategies. The discussion globally should move to how to further promote additional strategic partnerships between research and non-research organizations working on the ground on climate change adaptation and with policy makers. As mentioned before, there is an urgency to connect the research and knowledge gaps with the implementation on the ground.
- Research institutions could more pro-actively engage with development actors, and offer support to analyze successful adaptation programs, identify key success factors in these programs, in terms of approaches, community and policy engagement, resource allocation, management and leadership styles, etc. This may increase the replicability of successful adaptations options and help development actors sharpen their rigour in analysis and capacity to assess the value of their work in terms of adaptation benefits. There are a few instances in CARIAA where NGOs and INGOs worked closely with research teams from universities, and acknowledged positive benefits from this collaboration. More interactions between these different players is therefore needed.
- CARIAA has shown that “operationalizing transdisciplinary research” is not an easy task, but it is an essential dimension of adaptation research. CARIAA researchers have learned through working together across disciplines, institutions and contexts, and this learning could form the basis for an area of work on how best to operationalize transdisciplinary research in the context of adaptation, what works and what does not work, what creates a supportive environment for transdisciplinary work at institutional level, what rules governing research and research institutes need to change for transdisciplinary research to become more attractive and more rewarding.



10. Annexes

Annex I - CARIAA Theory of Change

Figure 5. CARIAA Theory of Change



Annex II - Evaluation matrix

Table 11. Evaluation Matrix

Key questions/Sub-questions	Indicators	Data Sources	Data collection and analysis methods
Question 1. Was CARIAA-funded <u>research</u> high quality?			
1.1. What is the quality of the research funded by CARIAA (using an adaptation of RQ+ approach)? Research includes the following types of outputs (1) publications (scientifically validated, policies and practices), (2) methods or approaches that make accessible evidence to stakeholders and (3) programs that provide capacity development	Scores ⁵⁰ for the two RQ+ assessment components: (i) areas of influence (i.e., field of research, research capacity, and research, political and data environments) and (ii) quality assessment (integrity, legitimacy, importance, positioning for use)	<ul style="list-style-type: none"> Selected themes (one per consortium) according to criteria plus one special topic selected by evaluation team from the outcome assessment in questions 2 and 3 Research outputs products for selected themes using CARIAA database, including those in the pipeline for delivery up to December 2018 Consultation Forum analysis 	Phase 1: <ul style="list-style-type: none"> Quality research using RQ+ adapted protocol Quantitative analysis of research outputs Interviews with PIs, POs and CARIAA management Interviews with established adaptation scientists (non-CARIAA members) Phase 2: <ul style="list-style-type: none"> Quality research using RQ+ adapted protocol on one special topic Consultation forum with the entire CARIAA membership
Question 2. To what extent did CARIAA meet its objectives and intended <u>program outcomes</u>?			
2.1. Is there evidence of impact? Has CARIAA already contributed to adaptation impacts? The ToC defines impact as: "key stakeholders, including the most vulnerable communities	<ul style="list-style-type: none"> Capacities, practices and skills of individuals, institutions, systems, have been created/enhanced to deal with current climate variability or potential future climate impacts Existence of examples of cases in which individuals, communities and institutions are less vulnerable or more resilient according to perception or recent climate events (compared with before) 	<ul style="list-style-type: none"> Reporting documents from institutions involved in the program Evaluation reports from capacity building activities Products from consortia and CARIAA Interviews reports 	Phase 1: <ul style="list-style-type: none"> Interviews with Principal Investigators (PIs), Program Officers (POs) and institutions (key stakeholders) Desk review Phase 2:

⁵⁰ Scores are based on evaluative rubrics developed for each component of the framework.

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have the capacities to make evidence-based choices for coping with current variability and potential future impacts of climate on development”		<ul style="list-style-type: none"> • Stories of impact • Annual Learning Review • Field visits reports • Consultation Forum analysis 	<ul style="list-style-type: none"> • Interviews with beneficiaries during field visits (tbc) • Consultation forum with the entire CARIAA membership
2.2. To what extent is CARIAA meeting its outcomes? Outcomes are defined in the ToC as “actors in planning, program, policy and research use a range of evidence-based, tested options to enhance and support communities’ livelihoods in ‘hot spot’ regions in the face of climate challenges, now and in the future, in ways that benefit the most vulnerable women and men.”	<ul style="list-style-type: none"> • Research into use actually taking place and disaggregated by gender if available • High marks in the research quality assessment, particularly around positioning for use category, contextual and importance/relevance • Examples of cases in which targeted actors take up CARIAA’s results, evidence and policy options and invest in testing them in adaption initiatives at scale. • Examples of cases in which targeted actors become aware of CARIAA’s research; key champions at the national level are endorsing CARIAA’s concepts and evidence; consortium partners are in position to influence key global policy documents; there is an increase demand for CARIAA’s evidence products. • Examples of cases in which CARIAA’s research and evidence are communicated through a range of channels • CARIAA’s/consortia’s implementation progress is according to its work plan and logframe 	<ul style="list-style-type: none"> • Log frame for CARIAA and HI-AWARE • Planning documents for PRISE, DECCMA and ASSAR • Quality of research assessment under Q1 • Products from consortia and CARIAA • Interviews reports • Stories of impact • Annual Learning Review • Field visits reports • Consultation Forum analysis 	Phase 1: <ul style="list-style-type: none"> • Interviews with Pls, POs and institutions (key stakeholders) • Quality assessment of research under Q1 • Documentation review Phase 2: tbc <ul style="list-style-type: none"> • Field visits • Consultation forum with the entire CARIAA membership
2.3. How well do the objectives and outcomes connect to its ToC?	Results are within the sphere of control (i.e., funding for research, research within hotspots, sharing of knowledge across consortia) and within the sphere of influence (i.e., research is communicated)	<ul style="list-style-type: none"> • Results from quantitative analysis of outputs and outcomes • ToCs and log frames of all consortia plus CARIAA • M&E and Learning Strategy 	Phase 1: <ul style="list-style-type: none"> • Desk review • Interview with Pls, POs and CARIAA management
2.4. How relevant and significant are those outcomes to priorities	<ul style="list-style-type: none"> • Relevance of outcomes and impacts to CCA • Correspondence with national and regional priorities and scientific evidences in CCA 	IPCC studies and national/regional adaptation	Phase 2:tbc <ul style="list-style-type: none"> • Interviews with stakeholders during field visits

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for CCA in the hotspots it targeted?		policies and plans (where priorities are defined) Consultation Forum analysis	<ul style="list-style-type: none"> • Review of country CCA programs and IPCC reports • Consultation forum with the entire CARIAA membership
2.5. Were there any significant unexpected outcomes, whether positive or negative?	<ul style="list-style-type: none"> • Convening power of the consortia • Benefits and shortcomings of working in collaborative research • Work conducted by the Working Groups • Products from the Special Fund 	<ul style="list-style-type: none"> • Interviews reports • Stories of impact • Annual Learning Reports (ALRs) • Field Visits reports • Consultation Forum analysis 	Phase 1: <ul style="list-style-type: none"> • Interviews with PIs, POs and institutions (key stakeholders) • Quality assessment of research under Q1 • Consultation forum with the entire CARIAA membership Phase 2: tbc <ul style="list-style-type: none"> • field visits
2.6. Have gender and social inclusion been reflected in the research, outcomes and impacts?	Degree to which gender and social inclusion have been incorporated, how actors are using the evidence and how the capacity was created to cope with climate change <ul style="list-style-type: none"> • Quality knowledge on gender drivers and conditions leading to vulnerability in the context of climate change are being generated and disseminated • gender/social disaggregated data is generated, taken into account and use in the research and uptake of evidence • Strengthened capacities disaggregated by gender / social group of the research community • Specific gender and social inclusive adaptation pathways 	<ul style="list-style-type: none"> • Interviews • Field Visits reports • Stories of impact • ALRs • Consultation forum analysis 	Phase 1: <ul style="list-style-type: none"> • Interviews with PIs, POs and institutions (key stakeholders) Phase 2: tbc <ul style="list-style-type: none"> • Field visits • Consultation forum with the entire CARIAA membership
Q3. Which results (i.e., outcomes and impacts) offer particular promising opportunities to realize further outcomes and impacts, whether because they need more time, scaling or replication?			
3.1. What are the most promising outcomes that could be deepened by an extension to CARIAA?	<ul style="list-style-type: none"> • Results that are closed to be realized in the short term but would need further support to fully achieve outcomes (i.e., stakeholders fully aware and endorsing the evidence but testing is eminently soon to come) • Evidence that is in the process of been transformed into products to improve their applicability to policies, approaches and investments 	<ul style="list-style-type: none"> • Outcomes and impacts identified in Q2 • Quality of research assessment under Q1 • ALR • Stories of change • Interviews with authors and PIs 	Phase 1: <ul style="list-style-type: none"> • Desk review based on Q2 data collection • Research quality assessment • Interviews with key authors of research outputs generating the outcome

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	<ul style="list-style-type: none"> • Evidence that is putting CARIAA members in a position to influence or receiving international endorsement • Research that has identified the need for additional research that is essential to fully achieve the outcomes and impacts of CARIAA • Research with high marks in the “positioning for use” dimension in the RQ+ 	<ul style="list-style-type: none"> • Research outputs • Consultation forum analysis 	<ul style="list-style-type: none"> • Interviews with CARIAA management, IDRC and DFID Phase 2 • Interviews with beneficiaries of the outcome during field visits • Field visits • Consultation forum with the entire CARIAA membership
3.2. Which results might warrant a continuity of current activities, participants, or relationships in order to realize their potential? (funding and arrangements beyond CARIAA)	<ul style="list-style-type: none"> • Opportunities for scaling up or replication identified by research and other CARIAA products • Research has concluded the need for further time to realize outcomes or impacts • Evidence that has been endorsed internationally but needs testing at scale • Research with high marks in the “positioning for use” dimension of the RQ+ 	<ul style="list-style-type: none"> • Outcomes and impacts identified in Q2 • Quality assessment of research under Q1 • Research outputs • ALR • Stories of change • Interviews with authors, PIs, donors, private sector, governments, beneficiaries • Consultation forum analysis 	<ul style="list-style-type: none"> • Desk review of research products • Interviews and focus groups • Assessment of quality of research <p>Phase 2:</p> <ul style="list-style-type: none"> • Field visits • Consultation forum with the entire CARIAA membership
3.3. What new research questions emerge from CARIAA results that could be addressed in future programs or a new call for reconfigured consortia?	<ul style="list-style-type: none"> • Research identified areas that would need more and better information, modelling, methods/approaches, baselines • New climate hotspots identified through the research done, beyond the 3 dealt with under CARIAA 	<p>Data and analysis prepared for all the other questions</p> <p>Consultation forum analysis</p>	<ul style="list-style-type: none"> • Desk review of research products • Interviews and focus groups • Assessment of quality of research <p>Phase 2: tbc</p> <ul style="list-style-type: none"> • Field visits • Consultation forum with the entire CARIAA membership

Annex III – RQ+ Framework

Table 12. Definitions used for RQ+

Characterizing the research			
Maturity of the research field	(i) established field (i.e. theoretical and conceptual frameworks, substantial body of work and vibrant corps of experienced researchers)	(ii) emerging field (i.e. discernible body of work, theory and practices and modest body of active researchers)	(iii) new field (i.e. limited theoretical or empirical knowledge, no dedicated journals, only a few active researchers)
Research capacity strengthening	Capacity strengthening has a (i) low focus of the research output	Capacity strengthening has a (ii) medium focus of the research output	Capacity strengthening has a (iii) strong focus of the research output
Research environment	The host institutions of the CARIAA's funded research is (i) supportive of the research	The host institutions of the CARIAA's funded research is (ii) moderately supportive of the research	The host institutions of the CARIAA's funded research is not supportive of the research
Political environment	The political environment has had a (i) low influence in the research quality and agenda	The political environment has had a (ii) moderate influence in the research quality and agenda	The political environment has had a (iii) high influence in the research quality and agenda
Data environment	Instrumentation and measures for data collection and analysis are (i) developed	Instrumentation and measures for data collection and analysis are (ii) emerging	Instrumentation and measures for data collection and analysis are (iii) under-developed.



Table 13. Rating description

Rating research quality	Unacceptable	Less than acceptable	Good	Very good
What is the integrity of the research outputs?	Research has little to no scientific merit: design, methodology, data collection and analysis have severe lapses	Shortcomings in design, methodology, data collection and analysis, some efforts to meet standards are present but not succeed	Design, methodology, data collection and analysis are acceptable. Peer reviewed but no published	Scientific merit without question. Product is an example of integrity in research. Peer reviewed and published in an academic journal
What is the legitimacy of the research outputs?				
(i) addressing potential negative consequences and outcomes	There is no apparent effort to address negative consequences of the research.	Some efforts were taken to take into account negative consequences.	Appropriate and timely measures have been taken to mitigate foreseeable negative consequences in most cases.	Appropriate and timely measures have been taken in all cases.
(ii) inclusiveness of vulnerable populations	Safeguards, processes and prioritization of vulnerable and marginalized communities have not received sufficient attention	Inclusiveness has been partially addressed	Inclusiveness has been appropriately addressed	Inclusiveness has been intentionally and systematically addressed
(iii) gender responsiveness	The research is gender-blind. There is no evidence that gender was considered when designing and/or implementing the research	Gender was considered in a limited way: insufficient integration of the intersectional perspective, limited reliance on gender-disaggregated data and on	Gender was adequately considered across almost all aspects: the intersectional perspective is present, the research builds on latest	Gender was considered with great care and detail: the intersectional perspective adopted allows for highlighting complex interactions and power



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		recent understanding of vulnerability, gender discussion do not cover gender issues at all scales, research methods are insufficiently gender-sensitive	developments on vulnerability and resilience, the findings rely on gender-disaggregated data, men's issues are discussed, gender discussions across different scales are present, and there is evidence of use of gender-sensitive research methods	relations in the context of climate change, the findings rely on gender-disaggregated data and contextual analysis, the analysis bridges scales (from household to global spheres) and the research offers evidence of use of gender-sensitive methodologies
(iv) engagement with local knowledge	Engagement with local context has been neglected	Context and engagement have been considered during the research process but some weakness remain	Context and engagement have been considered in the research process	Context and engagement have been carefully and systematically considered
How important is the research output?	Research is not built on existing knowledge, does not break new knowledge or not contribute to a key development priority	There is marginally addition to what is already known, not innovative, or little contribution to a key development priority	Fresh areas are presented, an innovative approach, dealing with new issue or contributes to a key development priority	Research is innovative and ground breaking, builds on existing knowledge or contributes majorly to a key development priority
How is the research output positioned for use/Research in use?	Research was not designed with use in mind and not including an analysis of user environment.	Insufficient effort to consider the use and users' environment.	Research took stakeholders and potential user groups into account and user environment was examined and reflected.	Research was designed and conducted with use in mind and users' environment was thoroughly conducted and articulated in the research.

Annex IV - CARIAA's revised Gender Assessment Framework

The mid-term evaluation of gender and social inclusion in the CARIAA consortia introduced a gender assessment scale (from gender-blind to gender transformative), providing a more developed framework for assessing research outputs. Thus, each research output can be categorised in terms of whether and how it:

- i. Adopts an intersectional perspective;
- ii. Builds on the most recent (gender-sensitive) literature on vulnerability, resilience and adaptation;
- iii. Addresses masculinities;
- iv. Generates gender disaggregated data;
- v. Provides discussions across scale, and;
- vi. Mobilizes gender and socially sensitive research methods.

As a reference, in the gender assessment scale, a piece of research that is Very good (gender transformative) is defined as follows: "Gender was considered with great sensitivity across all aspects of the research design, selection and implementation of data collection methods, analysis and interpretation of findings. It has brought significant new, highly credible insights as well as potential to use these insights to address gender differences. The research shows potential to challenge existing gender and social power relations, hierarchy or norms and to have significant policy implications".

This revised gender assessment scale and its rating levels is summarized in the table below.

Table 14. Gender Assessment Scale

	Unacceptable (gender blind)	Needs improvement	Average	Good	Very good (gender transformative)
Intersectional perspective	There is no evidence that gender was considered when designing and/or	Insufficient integration of the intersectional perspective: discussions on the factors that are potentially producing vulnerabilities or creating resilience or growth are	The intersectional perspective is present but not fully explored, therefore the paper risks reproducing gendered stereotypes such as women being the most	The intersectional perspective is present but the complex interactions between potentially oppressive and privileging factors in the context of climate change could have	The paper adopts an intersectional perspective that allows for highlighting in a nuanced way the complex interactions between potentially oppressive and privileging



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	implementing the research	limited to binary mentions of male/female, rich/poor, urban/ rural.	vulnerable and the poorest of the poor, etc.	been highlighted in a more nuanced way.	factors in the context of climate change.
Conceptual approach to vulnerability resilience, migration and/or adaptation		Insufficient reliance on the most recent understanding of vulnerability, resilience and/or climate change related migrations, which makes it difficult to integrate concerns for gender and equity.	Insufficient reliance on the most recent understanding of vulnerability, resilience and/or climate change related migrations, which makes it difficult to integrate concerns for gender and equity.	The paper builds on the latest scholarly developments on (climate) vulnerability, resilience and/or adaptation.	The paper builds on the latest scholarly developments on (climate) vulnerability, resilience and/or adaptation.
Masculinities		Men's issues and /or masculinities are not integrated in discussions on gender.	Men's issues and /or masculinities are not integrated in discussions on gender.	Men's issues and /or masculinities are insufficiently integrated in discussions on gender.	Men's issues and /or masculinities are integrated in discussions on gender.
Data		Insufficient reliance on gender-disaggregated data.	Insufficient reliance on gender-disaggregated data.	The findings rely on gender-disaggregated data and gender differentiated contextual analysis of vulnerability, adaptation or resilience.	The findings rely on gender - disaggregated data and gender differentiated contextual analysis of vulnerability, adaptation or resilience.
Scale		Gendered discussions are weak – they do not cover gender issues at all scale.	Gendered discussions are present but the analysis does not cover gender issues at all scale.	Gendered discussions are present but the analysis does not cover gender issues at all scale.	The analysis bridges scales (from the household level to the international spheres).
Research Methods		Research methods are insufficiently gender and socially sensitive.	Research methods are insufficiently gender and socially sensitive.	Evidence for gender and socially sensitive research methods are insufficiently highlighted.	The research adopts gender and socially sensitive research methodologies that are sufficiently highlighted.



Annex V – List of outcomes

The list below is a compilation of outcomes achieved by CARIAA and that can be largely attributed to the program. It is based on consortium reports, interviews and field visits and it provides a good overview of the achievements, but is not fully exhaustive.

Importantly, were considered as “Outcomes” only examples of actual **use** of research findings by an external stakeholder (mostly policy makers). Examples involving capacity building or preliminary discussions were not included. Nonetheless, many of the contributions reported on may not yet have been fully realized if policies to which they contributed have not been approved and implemented.

- Global:
 - The Himalaya research on the impact of different climate scenarios in the hydrology of the region is now making its way through IPCC, particularly in the discussion of 1.5°C. This is especially valuable as the Himalayan region did not previously receive sufficient attention in IPCC reports, despite its high population and environmental significance.
 - Several researchers from all consortia have been asked to be part of the IPCC process as coordinators or lead authors of different areas of the future IPCC reports, such as the 6th assessment. To date 4 CARIAA researchers have contributed to IPCC and attributed officially their work to CARIAA.
 - Contribution to World Bank’s report: “Groundswell: Preparing for Internal Climate Migration”(DECCMA)
 - Contribution to the 2017 Atlas of Environmental Migration published by the International Organization for Migration (DECCMA)
 - BRACED program has requested to be involved in the development of a RiU Handbook currently being prepared by CARIAA
 - A MOOC on RiU is currently under development
 - Contribution to drafting “The Windhoek Declaration for Enhancing Resilience to Drought in Africa” (ASSAR)
- Bangladesh:
 - Inputs into Bangladesh Delta Plan 2100, bringing migration, gender, and economic dimensions (DECCMA)
 - Inputs into the revision of Bangladesh Climate Change Adaptation Plan (DECCMA)
- Botswana
 - Introduction of Vulnerability and Risk Assessments (VRA) methodology into urban planning for four districts and at the national level (ASSAR)
 - Contribution to a new National Drought Management Strategy through collaboration with the Botswana Institute for Technology Research and Innovation (BITRI)(ASSAR)
 - Contribution to the District Development Plan for Botswana’s Central District (Bobirwa Sub-district) (ASSAR)



- Adoption of VRA methodology (buy-in from the Office of the President) for future capacity building of the institutional capacity of District Officer Development personnel and District Economic Planners responsible for the District Development Plans (ASSAR)
- Ghana:
 - Working with the Ministries of Interior and Ministries of Local Development to ensure that the Policy on Migration addresses the challenge of internal migration (DECCMA)
 - Contributions to the Coastal Development Authority Bill (DECCMA)
 - Contributions to the Science, Technology and Innovation Policy (to include language on RiU) (ASSAR)
- India:
 - Integration of DECCMA research in climate change Adaptation Plans or Coastal Zone Development plans (“soft knowledge” topics such as gendered vulnerabilities and current migration patterns).
 - Engagement with the World Bank project “Integrated coastal zone management plan” developed by the Chilika Lagoon Development Authority (DECCMA)
 - State of Odisha started tracking migration inside the state and with other states (DECCMA)
 - Contribution to the elaboration of the new Water Policy in the state of Karnataka (ASSAR)
 - Significant contributions to the operationalization of the Water Act regarding ground water management and governance (ASSAR)
 - Co-development of a National Science Plan for India (ASSAR)
 - Contribution to the Draft National Policy for Women (DECCMA)
 - *Has been approached by the Indian Meteorological Department (IMD) to plan for preparing a risk atlas for the country (ASSAR)*⁵¹
- Kenya:
 - Work with female entrepreneurs in Narok district to advocate for government investment in women (PRISE)
 - Contribution to the development of the new National Wildlife Conservation and Management Strategy for Kenya with evidence about climate change and economic benefits of wildlife (PRISE)
 - Mainstreaming of climate change adaptation into the revised Integrated Development Plans of four counties (PRISE)
 - Provide inputs into the revised National Climate Change Action Plan (PRISE)
- Namibia:
 - Inputs to the National Climate Change Committee (ASSAR)
 - Advice on proposals to the Green Climate Fund (ASSAR)
 - Inputs into a regional drought response planning (ASSAR)
 - Inputs on the 4th National Communication (ASSAR)

⁵¹ This outcome is not yet realized

- Nepal:
 - HI-AWARE contributed to the preparation of Nepal's National Adaptation Plan (2015-2016). It tailored climate data for Nepal to be used in their climate trend scenarios and was part of several working groups. The research on migration was also used.
 - Use of the hydrological modeling data by of Nepal government (HI-AWARE)
- Pakistan:
 - Member of the Climate change commission to implement the National Climate Change Policy (PRISE)
 - Provision of inputs into the final Intended Nationally Determined Contributions (PRISE)
 - Nestle Pakistan requested work on water stewardship initiatives (PRISE)
 - Collaboration with the Green Parliamentary Caucus and with the Better Cotton Initiative on private sector adaptation to climate risks (PRISE)
 - Use of research evidence by a member of Parliament for a submission to the World Commission on Forced Displacement (PRISE)
 - Workshop to help Parliament members prepare climate change adaptation plans in their constituencies (PRISE)
 - Contribution to the National Water Policy and to related speeches (PRISE)
 - Gilgit-Baltistan, a northern Pakistan provincial government, has requested advice on their adaptation plan. (HI-AWARE)
 - Use of the hydrological modeling by Gilgit-Baltistan government (HI-AWARE)
 - Use of evidence if manifestos of various political parties in the run up to this year's national elections (PRISE)
- Senegal:
 - Member of the National Committee on Climate Change (PRISE)
 - Contribution to updating the Guide to Local Planning developed by the National Local Development Program (PNDL), creating links with the Sustainable Development Goals, the Senegal Emergent Plan and integrating cross-cutting issues such as climate change, gender, nutrition and migration.
- Tajikistan:
 - PRISE was invited to apply the adapted tool to the dairy sector
 - Contribution to the National Adaptation Plan, the National Development Strategy, the National Strategy on Climate Change Adaptation until 2030 and resulting Local Adaptation Plans of Actions (LAPAs) (PRISE)
- Tanzania:
 - Partnership with the Tanzanian Ministry of Agriculture to develop the National Agricultural Climate-Resilient Plan
 - Contribution to the final Intended Nationally Determined Contributions (PRISE)
 - Participation to the development of the SADC Regional Strategic Action Plan (RSAP IV) for the Water Sector (PRISE)



Annex VI - List of people/organizations interviewed

Name	Position	Organization	Role in CARIAA
Bruce Currie-Alder	Program Leader	IDRC	CARIAA Program Leader
Evans Kituyi	Program Officer	IDRC	PRISE Program Officer
Georgina Cundill-Kemp	Program Officer	IDRC	ASSAR Program Officer
Kallur Murali	Program Officer	IDRC	HI-AWARE Program Officer
Ken de Souza	Research Manager Research and Evidence Division	DFID	CARIAA Donor representative
Logan Cochrane	Researcher	IDRC	CARIAA Student beneficiary/ consultant
Michele Leone	Program Officer	IDRC	DECCMA Program Officer
Robert Hofstede	Associate Director Climate change, Agriculture and Environment	IDRC	CARIAA Donor representative
Sarah Czunyi	Program Management Officer	IDRC	CARIAA Program Management Officer
Blane Harvey	Former Program Officer	McGill University / ODI	Former PO, now consulting
Mark New	Director and Pro-VC for Climate Change	UCT	ASSAR Principal Investigator (Southern African Lead)
Lucia Scodanibbio	Researcher	UCT	ASSAR Consortium Coordinator
Robert Nicholls	Researcher	University of Southampton	DECCMA Principal Investigator
Jon Lawn	BRECcIA Project Manager	University of Southampton	DECCMA Consortium Coordinator
Philippus (Flip) Wester	Regional Program Manager	ICIMOD	HI-AWARE Principal Investigator
Arun B. Shrestha	Regional Program Manager	ICIMOD	HI-AWARE Program Manager
Anjal Prakash	Program Coordinator	ICIMOD	HI-AWARE Consortium Coordinator
Eva Ludi	Head of Program Water Policy	ODI	PRISE Principal Investigator
Nathalie Nathe	Researcher	ODI	PRISE Consortium Coordinator
Mohammed Said	Researcher	KMT	PRISE Researcher
Samavia Batool	Researcher	SDPI	PRISE Researcher
Ayesha Qaisrani	Researcher	SDPI	PRISE Researcher
Dian Spear	Researcher	University of Cape Town (UCT)	ASSAR Co-PI (Regional Research Lead – South Africa)
Mary Thomson-Hall	Researcher	START (USA)	ASSAR Co-PI (Western Africa)
John Padgham	Researcher	START (USA)	ASSAR Co-PI (Western African Lead)

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Aromar Revi	Researcher	IIHS (India)	ASSAR Co-PI (South Asian Lead)
Amir Bazaz	Researcher	IIHS (India)	ASSAR Co-PI (South Asia)
Roger Few	Researcher	University of East-Anglia (UEA, UK)	ASSAR Co-PI (East African Lead)
Mark Tebboth	Researcher	University of East-Anglia (UEA, UK)	ASSAR Co-PI (East Africa)
Margaret Angula	Researcher	University of Namibia	Namibia focal point
Nitya Rao	Researcher	UEA (UK)	ASSAR Researcher
Chandni Singh	Researcher	IIHS (India)	ASSAR Researcher
Kavya Michael	Researcher	IIHS (India)	ASSAR Researcher
Prathigna Poonacha	Researcher	IIHS (India)	ASSAR Researcher Stakeholder engagement
Prince Ansah	Researcher	University of Ghana	ASSAR Technical officer
Adelina Mensah	Researcher	University of Ghana	ASSAR Senior Research Fellow
Teresa Perez	PhD Student	ASSAR	ASSAR Researcher
Daniel Morchain	Climate Change Adaptation Specialist	Oxfam GB	ASSAR Co-PI Research-into-Use Lead
Jesse DeMaria-Kinney	ASSAR RiU Coordinator	Oxfam GB	ASSAR RiU Coordinator
Sugata Hazra	Researcher	Jadavpur University (India)	DECCMA Co-PI (India)
Samuel Codjoe	Researcher	University of Ghana	DECCMA Co-PI (Ghana)
Mumuni Abu	Researcher	University of Ghana	DECCMA Researcher
Katharine Vincent	Research and Knowledge manager	Kulima Integrated Solutions	DECCMA RiU Lead and Gender Focal Point
Neil Adger	Researcher	University of Exeter	DECCMA Researcher
Ricardo Safra de Campos	Researcher	University of Exeter	DECCMA Researcher
Arthur Lutz	Researcher	FutureWater	HI-AWARE Co-lead on Research Component 1
Farid Ahmad	Researcher	PARC	HI-AWARE M&E Lead
Abid Hussain	Researcher	ICIMOD	HI-AWARE Pilot in Pakistan
Bashir Ahmad	Researcher	PARC	HI-AWARE Co-PI Pakistan
Saleemul Huq	Head	International Centre for Climate Change and Development (ICCCD), Bangladesh	Adaptation Futures 2018 participant
Lindsay Jones	Researcher	London School of Economics	Adaptation Futures 2018 participant
Bettina Koelle	Senior Learning Specialist	Red Cross Red Crescent Climate Centre	Adaptation Futures 2018 participant
Musonda Mumba	Ecosystems Division	UN Environment Kenya	Adaptation Futures 2018 participant
Shu Liang	Thematic Group Facilitator	Global Centre of Excellence on Climate Adaptation, The Hague	Adaptation Futures 2018 participant
Sam Bickersteth	CDKN Strategic Advisor	University of Oxford, UK	Adaptation Futures 2018 participant
Kim van Nieuwaal	Coordinator	Delta Alliance	Adaptation Futures 2018 participant



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Lancelot Ehode	Communication and KM officer in Senegal	IED	PRISE Researcher
Lassane Yameogo	Researcher	University of Ouagadougou	PRISE Researcher
Declan Conway	Research Fellow	London School of Economics	PRISE Researcher
Field visit to Bangladesh (HI-AWARE)			
Abu Syed	Researcher	BCAS	HI-AWARE Co-PI
Atiq Rahman	Executive Director	BCAS	HI-AWARE partner
Tanvir Hassan	Research Fellow	BCAS	HI-AWARE Researcher
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Shushanto Gupta	Research fellows and support	BCAS	HI-AWARE Researcher
Fahim Hoque	Research fellows and support	BCAS	HI-AWARE Researcher
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Mohammed Alam		n/a	Beneficiary (HI-AWARE)
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Mashfiquis Salehin	Professor	IWFM/BUET	DECCMA Co-PI
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Saiful Alam	Senior Water Resources Specialist	Institute of Water Modeling	DECCMA Consultant
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Murtuza Zulkar Naim Norman	Senior Assistant Chief & Assistant Project Director	General Economics Division, Planning Commission	DECCMA National stakeholder
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Mumuni Abu	Professor	Regional Institute for Population Studies, University of Ghana	DECCMA WP3 Lead
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Michele Leone	Program Officer	IDRC	DECCMA Program Officer
Field mission to Botswana (ASSAR)			
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Julius Althopeng	Dean, Faculty of Science	University of Botswana	ASSAR Stakeholder Botswana
Nnyaladzi Batisani	Researcher	BITRI	ASSAR Researcher Botswana
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Ms. Masisi	Department of Meteorology	Ministry of Environment, Wildlife and Tourism	ASSAR National stakeholder Botswana
Neil Fitt	CEO	Kalahari Conservation Society	ASSAR National stakeholder Botswana
Jeffer Maphorisa	Senior Wildlife Warden	District Wildlife Department	ASSAR District stakeholder Botswana
Chief (Kgosi) Ezekiel Joel	Tribal Chief	Bobonong, District Council	ASSAR District stakeholder Botswana
Oarabile Motseme	Assistant District Officer	District Commissioner	ASSAR District stakeholder Botswana
Mafoko Motseothata	Secretary	Village Development Committee (VDC), Bobirwa Sub-District	ASSAR District stakeholder Botswana
M. Savona	Farmer in Bobonong	Farmers' Committee	ASSAR District stakeholder Botswana
Constance Konyana	Secretary	Village Church group	ASSAR District stakeholder Botswana
Field mission to Kenya (PRISE)			
Kamau Kuria	CEO	KMT	PRISE Partner Head
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Charles Warria	Head of Monitoring, research and evaluation	KMT	PRISE Partner Head of Research Division
Eric Oyare	KMT Head of Fundraising and communication	KMT	PRISE Partner staff
Simon Wagura Ndiritu	Senior Lecturer, Economics and Agribusiness	Strathmore Business School	PRISE Researcher
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