The background features a faded image of several hands holding a globe. Overlaid on this are several large, semi-transparent geometric shapes: a yellow diamond in the top left, a teal diamond in the middle left, a large yellow and olive green downward-pointing arrow shape in the center, and a large red downward-pointing arrow shape in the bottom right.

In this *Spotlight*, we highlight the many ways ASSAR strengthened internal and external capacities at multiple levels across seven countries, as a lasting impact of the project.

the **ASSAR**


















SP  **TLIGHT**

on

Capacity Building

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September 2018

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Some Recent Project Highlights

Meetings and Stakeholder events

- National VRA training in Gaborone, Botswana (August 2018)
- Stakeholder mapping workshop in Mahalapye, Botswana (August 2018)
- Women's capacity building workshop in Koutiala, Mali (August 2018)
- Climate change radio show, Namibia (July-September 2018)
- Conference on Geography & Geoinformatics for Sustainable Development (July 2018)
- ASSAR annual meeting in Cape Town, South Africa (June 2018)
- ASSAR at Adaptation Futures (June 2018)
- UNFCCC Thematic Expert Meeting on Adaptation (May 2018)
- Climate change adaptation through youth innovation workshop, Ghana (May 2018)
- 10th Climate Change: Impact & Responses conference (April 2018)
- Constituency Development Committee training in Onesi, Namibia (Feb-April 2018)

Reflections

- From climate science to climate action (July 2018)
- A visit of 'firsts': Cape Town and Adaptation Futures (July 2018)
- Adaptation Futures 2018: an enthralling journey to the Mother City (July 2018)

Upcoming Events

- Land Use Land Cover Change Training workshop (Sept 2018).....Addis Ababa, Ethiopia
- Ethiopia stakeholder feedback events (Sept 2018).....Ethiopia
- Namibia stakeholder feedback events (Sept/Oct 2018).....Namibia
- ASSAR at IPCC Special Report Global Warming of 1.5°C (Oct 2018).....Incheon, Korea
- WOTR: 'Adapting Agriculture to Global Temperature Rise of 1.5°C' (Oct 2018).....India
- Botswana stakeholder feedback events (Oct/Nov 2018).....Botswana
- Kenya stakeholder feedback events (Nov 2018).....Kenya
- IHS final research dissemination workshop (Jan 2019).....India

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Junior researchers, experts, vulnerable people, policy makers: Strengthening the capacities of all those touched by ASSAR

By Lucia Scodanibbio, ASSAR Project Coordinator, University of Cape Town

According to its logframe (yawn...) 20% of ASSAR's success rests on the capacities it has built. After interacting with a range of ASSAR team members about what they learned or taught through the project, I can assure you that this is one of the most exciting and impactful results arising from ASSAR! You will get a glimpse of that through the testimonies that follow, but let me also give an overview about the range of ways in which ASSAR has sought to strengthen capacities.

Capacity building through supporting students and early career researchers

A significant proportion of ASSAR's research has been undertaken by **Masters and PhD students**, particularly in southern and west Africa and with the involvement of research assistants and post-docs in all regions. As Mary Thompson, research lead from START, says: "The intention of bringing these early career researchers on board has been to harness and leverage the work of ASSAR to strengthen and expand the growing scientific leadership base in semi-arid regions of Africa and Asia".

Internal capacity building through training events, small grants, mentorship and collaborative research

Over its lifetime, ASSAR has funded and organised a range of formal workshops and writeshops on a range of topics (see box), which have benefitted early career and senior researchers alike. Aside from furthering knowledge on vulnerabilities, climate adaptation and responses, these activities have strengthened facilitation, curriculum development, workshop planning and scenario development skills of both researchers and practitioners.

In addition, given the wide-ranging expertise and experience represented across ASSAR, a specific fund was established to support professional development of early career researchers by strengthening individual research, science communication and networking capacities. Named the **Small Opportunities Grant**, this provided the chance for young scientists to tap into a broad spectrum of strengths, skills, perspectives, and ideas across different semi-arid hotspots. Focused on fostering knowledge and skills in relevant specialty areas, such opportunities often contributed toward joint outputs across the ASSAR regions. With the intention of furthering ASSAR's impact, some of these grants were specifically aimed at bolstering the influencing and communications capacity of the ASSAR researchers, building stronger ties with stakeholders in the regions and boosting the RiU work currently being done by the regional teams.

Strengthening external capacities at many different levels

Through the numerous participatory processes that ASSAR has facilitated (such as **Transformative Scenario Planning, Participatory Scenario Analysis, Vulnerability and Risk Assessments**) we have strengthened adaptive capacities, fostered dialogue between stakeholders who generally do not interact, and encouraged inclusive adaptation planning by enhancing stakeholders' understanding of the impact and consequences of climate change as well as potential responses. Some of our partners, like IHS, also engage in formal training courses aimed at government officials or young leaders, to ensure that the latest ASSAR thinking influences current and future decision makers.

In addition, in 2017-18, START provided ASSAR partners with funding through the Grants for Local Adaptation Support (GLAS) and Scenario-Based Capacity Building (SBCB) awards. These grants were developed in recognition of the need to go beyond academic capacity building within ASSAR to do more to **strengthen the capacities of those living and working in our study sites**. The GLAS are intended to draw from findings of ongoing ASSAR research to support the most vulnerable groups in each region on overcoming barriers to and supporting enablers of their adaptation. The SBCB grants were developed to build on the momentum, insights and connections made through the regional scenario processes and to align with ongoing ASSAR research findings to attain actionable results.

As the project begins to wind down and we are able to look back upon our achievements, we feel more confident to assert that the capacity building activities that ASSAR has enabled constitute one of the most valuable and rewarding components of our work. From less formal interactions to the range of training activities mentioned above, we have created opportunities for young scientists to engage with experts they may not have otherwise had the chance to, we have connected regional research teams with stakeholders around real adaptation needs and solutions, and have built relationships within and outside of the project that are anticipated to last beyond its lifetime.



ASSAR team members at the 2018 Annual Meeting

ASSAR capacity building in numbers

- Approximately 90 early career researchers trained through ASSAR
- Approximately 30 writeshops and training workshops on **gender, migration, governance, land use and land cover change, climate science, Research-into-Use** approaches and strategies (including **Transformative Scenario Planning** and **experiential learning**), influencing methods and tools, etc.
- 18 small opportunities grants for early career researchers to collaborate and learn from senior ASSAR members and each other
- Six grants to develop the capacities of vulnerable groups in the four ASSAR regions; multi-stakeholder processes on participatory, inclusive adaptation planning; targeted trainings to enhance stakeholders' understanding of the impact and consequences of climate change, and potential responses
- Four grants to extend the work begun during the multi-stakeholder processes (TSP, PSA)

Is accepting an ASSAR PhD scholarship the best decision I have taken for my career?

By **Alcade Segnon**, PhD Student, University of Ghana

I don't know! What I can say, however, is that having been a PhD student working in ASSAR has had a positive impact on me, how I think about research impact, and what I want to do in the future. Through ASSAR, I have had many valuable learning experiences and opportunities that have greatly improved and strengthened my capacity as a researcher.

Technical skill development

Thanks to **ASSAR's training course on understanding climate information**, I learnt the complexity of climate systems modelling, the skills and resources required to do this modelling, and how challenging it can be to communicate this information to decision makers. This training course greatly **contributed to shaping the path of my PhD research** and saved me a lot of time.

Although I considered myself fluent in **R** (software used for statistical computing and graphics) before joining ASSAR, the **Capacity Building and Data Analysis Workshop** organised by ATREE offered me the opportunity to learn how to manipulate, visualise and analyse earth observation data in R, greatly strengthening and extending my skills and expertise. Now, I can confidently handle spatial data in R.

Transformative Scenario Planning training

Given that the challenges of climate change are experienced differently by various social groups and at different scales, adaptation needs to take into consideration all these complex and sometimes conflicting contexts to be effective. This is where scenario building can be helpful in envisaging a range of possible futures which can assist in decision-making and strategic planning. Through ASSAR, I attended the **Transformative Scenario Planning training** and I was lucky to have the opportunity to apply the newly-acquired knowledge in one of the two **Transformative Scenario Planning workshops in Mali**. TSP provides a space for stakeholders from different perspectives to think critically about a set of problems and what could happen if different paths are taken for dealing with the issues.

Exposure to diverse colleagues

Addressing challenges of climate change requires thinking outside the box. Having people from different backgrounds and contexts, and with different experience, both in research and practice, in the same project, helps to have a holistic insight and perspective on the issue at stake, which I think is one of the strengths of the ASSAR consortium. Learning to always think about an issue from diverse perspectives and angles is something I value in ASSAR and will certainly apply in my future research and career.



Being a student in ASSAR has better equipped me to take adaptation research up and contribute to addressing the societal challenges posed by climate change.

Understanding research impact

Thanks to the **RiU thinking** I have been exposed to through ASSAR, I now have a different perspective on research impact. Citation count alone is not enough! Other equally important aspects may include the number of policy processes and practices influenced, the extent to which technology has been developed and actually adopted by users, the number of varieties released and adopted by farmers, etc. For this to happen, one must engage with the concerned stakeholders right at the beginning and throughout the research cycle, to get a better idea of what their priorities are!

Networking opportunities

What I value the most in ASSAR is the vast networking opportunity provided by the consortium, which has allowed me to meet, get to know, and learn from many people, from the busy PI or Co-PIs to early career researchers. ASSAR has helped to connect researchers within and among three regions in Africa, and between Africa and Asia, providing critical exposure and potential future openings for ECRs.

What I also learnt from being part of ASSAR is how to deal with the lack of timely feedback from other researchers, who may be working part-time in the project:

You just have to keep calm and survive your frustration!



Alcade at a Transformative Scenario Planning training workshop

ASSAR made my Master's dream a reality

By Janet Selato, Master's Student, University of Cape Town

I am a meteorologist by profession, currently working in the Botswana Department of Meteorological Services in the division concerned with climate change. I am grateful to have received a 2016 ASSAR scholarship to pursue a one-year Master's degree in Climate Change and Development at the University of Cape Town, South Africa. Through hard work, perseverance and support from ASSAR, I graduated in December 2017.

The scholarship made my almost elusive dream of obtaining a Master's degree a reality. Previously, I had not been able to get funding anywhere despite several attempts. The course itself was informative, intense and practical as it was loaded with real situations and examples. It developed my thinking and analytical capacity because I had to review a wide range of literature.

Through the Master's I got the opportunity to learn how to conduct field research, analyse data, and write research papers. It was exciting to conduct fieldwork in my own country, Botswana, in the Bobirwa sub-district. The area is an ASSAR site that is greatly impacted by climate change. My research looked at barriers to uptake and use of climate information by communities in the sub-district and culminated in a thesis as a requirement for my degree. Moreover, the topic was selected and funded for **presentation at Adaptation Futures 2018**, in Cape Town, South Africa. Some of the thesis findings have also been **published in newspaper articles** in Botswana and we are working to produce a journal article based on this work.

It has been a great and rewarding journey with ASSAR

The research has given me knowledge, in-depth understanding, and confidence in reviewing, writing and contributing to climate change reports and proposals for funding. These are skills that I did not possess initially. At present I am tasked with overseeing – as project manager – the development of Botswana's national climate change strategy and action plan, and am using the capacity obtained during my studies.

Additionally, ASSAR provided me with opportunities to participate in climate-related events organized in the region, such as the climate change Adaptation Retreat 2017 in South Africa's Northern Cape, and the **Transformative Scenario Planning training workshop** held in Botswana in 2016.



Janet and fellow Master's student Omagano Shooya with their supervisor Dian Spear, after handing in their theses in March 2017.

“Janet has undergone a transformation through her time with ASSAR. She worked very hard and has grown substantially in her ability as a researcher particularly in her scientific writing, critical thinking and assimilation of literature. She will be a great asset to adaptation in Botswana going forward.”

– Dian Spear (supervisor of Master's thesis)

These events reinforced what I learned in the formal classroom setup and allowed me to apply my newly acquired skills by conveying my thoughts in presentations and discussions with different stakeholders to find probable solutions to climate-related challenges under different scenarios. The ASSAR online platform gave me a chance to see what other project researchers based in different parts of the world were working on, which was a source of inspiration. My work was also guided by ASSAR supervisors who contributed to my growth in the research space.

Overall, being part of ASSAR and its associated events has enhanced my career and added value to my work nationally, and in regional and global fora. I believe the capacity I acquired over the last two years will bring greater opportunities and engagements where I can use my full potential. For all these reasons, I have found my journey with ASSAR to be a very rewarding one!



Janet's first day at University of Cape Town

Learning about ecosystem dynamics, and becoming friends in the process

By ASSAR Researchers from Botswana, Ethiopia, Ghana, India and Namibia

"ASSAR provided us a unique opportunity to conduct a truly cross-scale, interdisciplinary analysis that marries globally available data with local information gathered from the field, key stakeholders and communities. From the first workshop held in Bangalore, where participants from different regions and disciplines were trained on the datasets and tools that would be of use to them, I was struck by the commitment that teams showed. As one of the workshop organisers, I'd often have to resort to herding people *out* of the room so the teams would be forced to eat their meals or drink coffee! This enthusiasm has continued through our meetings in Ghana and in South Africa, and even though my 'day-job' tosses other balls my way, it continues to fuel my desire to see this work through to a robust research output that will be of use to the communities that we have been studying."

Milind Bunyan, ATREE, India

"The data analysis meetings provided us with important opportunities to develop our skills in software packages (R and GIS) and to explore earth observation datasets from global sources that are very important for LULC and ecosystem dynamics. We developed our knowledge on ecosystem changes, drivers of change and research methods for investigation and learned how to use MODIS NDVI, MODIS ET and CHIRPS rainfall datasets for LULC change induced ecosystem dynamics. These newly acquired skills will be very useful for us to conduct similar research in our respective areas. In addition, we are now also able to transfer our new knowledge about software packages, global datasets and research methods to others through training and education. In addition, I'd like to say that while my background is in the natural sciences, the ASSAR research project also created an excellent opportunity for me to acquire qualitative research skills and experiences."

Mekonnen Adnew Degefu, Addis Ababa University, Ethiopia

"The LULC training offered me new insights into conducting research using remote-sensed data as well as software tools such as GIS and R of which I only had rudimentary encounters previously. I had never imagined that one day I would be talking about CRU datasets, MODIS, LANDSAT images, CHIRPS, NDVI, greening, browning, and bluewater, which have now become part of my language. Although I am not yet an expert, I do now understand the links between remotely sensed data, data collected through questionnaire surveys, and observations made by researchers. I have also met and made friends through this group which I will cherish. I will forever be grateful to START and ATREE for affording me this opportunity. These are skills that I will apply in my work and also impart to others."

Cecil Togarepi, University of Namibia



Land use and land cover (LULC) is an important regional predictor of the availability of ecosystem services. LULC *change* (LULCC) combined with, or in response to climate change, is therefore likely to have major implications for the adaptive capacity of communities that access ecosystem services. Using remotely sensed data, LULCC can be mapped and quantified at various scales of time and space, which, in combination with globally available climate data and biophysical models, can be used to assess the response of LULC to climate, and its implications for the availability of ecosystem services.

Starting with a 10-day workshop in Bangalore, India, in March 2017, approximately 15 ASSAR researchers were brought together under the mentorship of colleagues from the Ashoka Trust for Research in Ecology and Environment (ATREE), and through funding provided by START. The training focused on the tools and techniques used to interpret changes in LULC, climate and the link between these two in determining the availability (and productivity) of vegetation and ecosystem services. Follow-up meetings were held in conjunction with the ASSAR annual meetings in Ghana and South Africa in 2017-18. The team is currently finalising a cross-regional synthesis paper on the linkage between LULC and climate at the basin scale for the semi-arid regions of Africa and India for publication in a peer-reviewed journal. In the process, capacities, professional networks and friendships have been forged.

"Through ASSAR's ATREE work I did not have anyone directly reporting to me and so I enjoyed being a mentor to everyone in the team. The LULC training activities provided me with the additional opportunity to mentor a young group of researchers that were motivated and eager to learn. It is one of the things I have valued the most about ASSAR. Also, it was the first time for me to work with a group of researchers coming from many countries in Africa, which allowed for very valuable exchanges."

Jagdish Krishnaswamy, ATREE, India

"The LULC workshop in Bangalore provided me an opportunity to learn new methods in remote sensing and data processing and enabled me to interact with members of ASSAR's cross-regional teams. This enhanced my understanding of the project's many themes and provided new opportunities for collaborative work. The "R" software training helped a lot with my regional research article and cross-regional study. In a short duration, everyone was able to complete the voluminous work for their specific regions. Thanks to the ATREE team for organising the training in a systematic manner."

Vijayasekaran Duraisamy, WOTR, India



"The ASSAR LULCC capacity building workshop has been instrumental in saving me crucial time in my research. Because of time and resource constraints, I was exploring the possibility of shifting my research questions and approaches. This training came at the right time and introduced to me a new way of approaching my research questions, that is "seeing or thinking about the issues from above". Although I am from a biological sciences background and quite familiar with R, the training greatly improved my skills in handling and analysing earth observation and remote sensing data. As a result, I was able to quickly make appropriate decisions to advance my research. The workshop also created a space for continuous learning and mentoring, helped develop a network of people from Africa and India—one which I hope will live on long after ASSAR."

Alcade C. Segnon, ICRISAT/University of Ghana

"Considering my background in social sciences and my current research focus on ecosystem services, I found the ASSAR LULC workshop to be critical. As a result, I can now easily use both remotely-sensed data analyses and participatory mapping, which is not usually the case among many researchers. Before the workshop, I never had any background in R, and didn't know how to run any analyses using the software. Fast forward to several months later, I find myself exploring more and undertaking advanced analyses which were never covered during the training as the foundation was laid for such further self teaching. Because of this, I was able to present a poster at **Adaptation Futures** and an oral presentation on vegetation dynamics, ecosystem services and human adaptations in semi-arid Botswana at a conference in Thailand. I created important professional networks at both of these events. Whilst the training was intensive and even stressful considering the amount of work we had to cover in such a short period of time, it was worth all the sweating and I will forever be grateful to both START and ATREE for all their financial and technical support. Even the relations and networks I created with other workshop participants will forever remain at the core of my heart."

Ephias Mugari, University of Botswana

"Prior to attending the LULC workshop I had never attempted to work with R as it seemed very complicated. But now I am confident with the software and realise that R is less tedious than I had previously assumed, and that it makes image analyses very exciting. The ATREE team was wonderfully patient and willing to impart knowledge. I am very grateful for this opportunity!"

Chandapiwa Molefe, University of Botswana

"Before this workshop, I had never carried out any biophysical research. During the LULC workshop I was introduced to programming using the R console and studio to analyse data. I also learnt how to visualise and analyse spatial data. This has given me new insights to address climate research with an interdisciplinary approach. With this new knowledge, I am better equipped to carry out research in our study areas on land system changes."

Rahinatu Sidiki Alare, University of Ghana

Growing as a researcher with ASSAR

By Ephias Mugari, PhD Student, University of Botswana

I joined ASSAR in 2015 as I was starting my PhD. At that time, I didn't know – but quickly came to realise – there would be many opportunities to grow as a researcher. In the past three years I have attended training workshops, taken part in local, regional and international conferences, and learned a lot from my peers and senior researchers.

The skills gained through ASSAR workshops have helped me analyse data and present my research in ways I couldn't before, with conferences giving me the chance to share my work with a broader audience. For example, I recently presented my work on vegetation responses to climate in Botswana at a **global conference on geography and geoinformatics in Thailand**. Similarly, last year I gave a presentation about societal perceptions of ecosystem service provision in the face of climate change at the International Conference on Energy, Environment and Climate Change in Mauritius. The presentation received so much feedback and has been accepted for publication in the *International Journal for Climate Change Management and Strategies*.

But conferences are about more than just presentations. For an early career researcher these are great platforms to learn more and set the foundation for potential collaborations with junior and senior researchers with similar interests to mine.



Presentation at the ICGGS 2018 conference, Bangkok, Thailand
(Photo credit: Sathaporn Monprapussorn)

I have come to realise that some of the challenges I face in my work can be easily overcome by learning from others who have been there before me. Likewise, I have found my experiences are useful to other early career researchers, with whom I can share knowledge gained through my involvement in capacity building initiatives.

My work has benefited from several training opportunities. The **ASSAR LULC workshop** in India gave me and at least 15 other junior and senior researchers from Africa and India the skills to use and analyze freely available remotely-sensed global datasets on climate and vegetation productivity. The **10-day Climate Science school at the University of Cape Town** introduced me to climate portals and allowed me to understand how researchers from different fields can collaborate with climate scientists.

The **UCT Climate Science training enhanced my capacity to integrate historical and future climate and non-climate information to guide decision-making**. The interactions with researchers, students and stakeholders facilitated the examination of the adaptation decision-making space under uncertainty and enabled me to appreciate various integrated approaches that can be used to develop adaptation strategies.

A course at the Stellenbosch Institute for Advanced Studies introduced me to ecosystem services tools and taught me how to select and run models, and interpret and communicate their results. The **Vulnerability and Risk Assessment workshop in Botswana** taught a methodology for developing consensus among a wide range of stakeholders about the main hazards and issues affecting various social groups and livelihood activities from the local, district and national level. More importantly, this methodology allows stakeholders to agree on actions that can be taken to enhance social and economic wellbeing, and promote resilient development. Through this training, I became one of the facilitators during a two-day VRA training session for District Officer Development (DODs) and Economic Planners from all the 16 districts in Botswana in August 2018.

Considering the multi-disciplinarity of ASSAR, I have become adaptable to natural and social scientists. I have a background in Agricultural Economics but have slowly moved towards Ecology. Although I wouldn't say the sailing was smooth, it has been worth the effort! I've now become a more well-rounded researcher who is comfortable using a combination of methods. For my **poster presentation at Adaptation Futures 2018** in South Africa, for example, I used participatory methods with local communities and remotely-sensed data to get a full handle on the dynamics at play.



Each day has been an opportunity for capacity building since joining ASSAR. Each experience has contributed to who I am now and will be critical for my future engagements, especially in such multi-disciplinary projects.

ASSAR's contribution to WOTR as a practitioner organisation

By Arjuna Srinidhi, Senior Researcher, Watershed Organisation Trust

The Watershed Organisation Trust (WOTR) was set up 25 years ago to address long-term development challenges tied to water management, sustainable agriculture, women's empowerment, health and nutrition in the semi-arid parts of central India. WOTR has always been a multi-sectoral organisation, committed to learning and improvising, so as to respond to local needs.

The key 'learning' for us, especially in the last decade, has been that climate change adaptation needs to be addressed at multiple levels, each requiring a different strategy depending on the stakeholder. Building capacities to do just this was the biggest contribution of the Adaptation at Scale in Semi-Arid Regions (ASSAR) project.

Applied, multi-disciplinary research

ASSAR demonstrated that grounded research and evidence-based recommendations are a prerequisite for effective policy formulation and efficient programme design together with the use of different tools. A study looking at **micro-irrigation at the margins**, for instance, allowed us to move beyond technological issues to understanding barriers and enablers in the promotion and uptake of drip irrigation. The **Agro-met services and farmer responsiveness** study was another example of cutting edge meteorological sciences engaging with last mile connectivity challenges in the field. The multi-scale, cross-cutting ASSAR work programme gave us the opportunity to explore and link a wide range of subjects which conventional projects with a narrower scope might not have allowed. From exploring the links between groundwater depletion and gender issues; or wellbeing and socio-economic vulnerability, with biophysical drivers of landuse-landcover changes, we have broadened our knowledge base.



Pedagogies for development action

While WOTR has always adopted a 'reflect-act-reflect' pedagogy towards developmental action, the peer review and transdisciplinary approach adopted by ASSAR helped us add a layer of rigour and depth to this. Powerful concepts tied to Research-into-Use and tools like **Transformative Scenario Planning** helped address challenging issues related to the **future of water for domestic and livelihood needs** in Maharashtra and reaffirmed our beliefs about people-led participatory change.

Transregional lessons

ASSAR opened us up to the international research community across several countries and institutions and enabled us to establish both professional and personal relationships, all of which helped broaden and enrich our perspectives, engagement and outreach. The application of **WOTR's tool for vulnerability assessment** (CoDrIVE-PD) in a workshop in Botswana in August 2018 or playing **games for water budgeting** at CARIAA's 2018 Annual Learning Review gave us the opportunity to discuss successful actions from South Asian semi-arid locations with our African partners and similarly learn from their experiences.



Building capacities

The ASSAR project gave us the opportunity to build capacities across different levels from research and policy advocacy to implementation and community engagement. The CARIIA Economics Winter School and the **Adaptation Futures 2018** conference and other annual learning meetings provided such opportunities. Consulting with officials from the Ministry of Earth Sciences, Indian Meteorological Department and Groundwater agency in Maharashtra, while also interacting with farmers about their expectations, taught us how to integrate science and social-science issues.

Our image and leverage potential

ASSAR also helped raise the profile of WOTR and the **WOTR Centre for Resilience Studies** as a knowledge institution not only for effective developmental action but also as a provider of ground-based evidence and learnings to inform policy and decision making in regard to its thematic areas of engagement. This image gives us the opportunity to leverage the identity for larger outreach, like participating in a **panel discussion on farm ponds on prime-time television**. This leverage will continue to be useful beyond the project period as we are finding for the organisation of an upcoming international consultation on Adapting Agriculture to a Global Temperature Rise of 1.5°C, in October, 2018.

From sceptic to ardent advocate

By **Hillary Masundire**, Senior Researcher, University of Botswana

As the Principal Investigator for the ASSAR project in Botswana it was my responsibility to see that all aspects of the work proceeded as planned and preceded well. As an ecologist, my interest in ASSAR was to look at ecosystems and ecosystem services and how these changed over time in response to climate change and other drivers such as human activities. This was to be carried out within a key focus area of ASSAR: barriers and enablers of adaptation at various scales in the semi-arid areas of Botswana. This could be done as a purely biophysical analysis but we chose to do this with a “human face” by considering ecosystem services and human livelihoods.

In July 2015, I met with Daniel Morchain of Oxfam GB in Windhoek, Namibia when he was running a **workshop on stakeholder mapping** as part of Research-into-Use. This was my first encounter with the **RiU concept**. Initially it didn't make much impact on me as I believed that my ecosystem work was already people-focused. I then worked closely with Daniel as we prepared for our first **Vulnerability & Risk Assessment workshop** in Botswana which we held in Bobonong – our ASSAR project area in October, 2015.

That VRA was the defining moment for me in regard to RiU. It exposed me to working directly with people who depend on ecosystem services to varying degrees: some very directly; others less so. It also proved to be an opportunity for me to learn from the people whose interests and aspirations I purported to serve, as well as to review the relevance of my research to the end-users.



Photo by Alistair Daynes, ReWild TV

The national training workshop was a transfer of skills from the ASSAR team to government planners who also promised to use the VRA approach in the planning, execution and review of developments within their respective districts. The Deputy Vice Chancellor of the University of Botswana and two Assistant Ministers: from Presidential Affairs and from Local Government and Rural Development officiated during the national VRA training workshops. The VRA will continue to be used well beyond the **life of ASSAR**.

I can confidently confirm that I have been transformed from a sceptic of the RiU concept to an ardent advocate. I do not see any other lens through which I will carry out my future research aside from the RiU approach. I am currently running an Environmental Flows (E-Flows) Project on rivers flowing from Zimbabwe, through Mozambique, to the Indian Ocean. I am now doing this with a conscious and deliberate incorporation of RiU.

Thanks to my colleagues: Daniel Morchain, Oxfam GB; Chandapiwa Molefe, Ephias Mugari, Bothepha Mosetlha and Mmakwena Moesi (University of Botswana); Kulthoum Motsomi (University of Cape Town) and Bhavana Rao (Watershed Organisation Trust, India)



From then on, I became more conscious of the importance and benefit of engaging with stakeholders in my research, if I wish to increase the chances of uptake of my research results.

In August 2018, working with Daniel of Oxfam GB, the University of Botswana (UB) ASSAR team successfully ran a four-day **national VRA training** for all district planners in Botswana as well as the directorate of National Disaster Management. All in all, 41 government officers took part in the training.

Part of the training was running a VRA for one of the sub-districts. The 'trainees' literally ran the VRA with about 40 stakeholders from the sub-district of Mahalapye. These guys were definitely adequately capacitated!

"Through the VRA approach, participants will jointly design strategies and measures to reduce or avoid risk, while enhancing wellbeing and promoting resilience in the community. It also offers an opportunity for the vulnerable and weaker members of the society to contribute to solutions aimed at solving their own problems as well as appreciating challenges faced by other members of their community."

– Mr Machana Shamukuni, Botswana's Acting Minister for Presidential Affairs, Governance and Public Administration

(Quote from Botswana Daily News: "Inclusive planning ideal", 15 August 2018)

Building interdisciplinary thinking through capacity building

By Lucia Scodanibbio, ASSAR Project Coordinator, University of Cape Town

As I interviewed Divya Solomon in the offices of Ashoka Trust for Research in Ecology and the Environment (ATREE), many thoughts crossed my mind: “her understanding of the content has shifted”, “the way she views and approaches research will never be the same”, “there’s a time dimension and thread joining her different experiences”, but ultimately, what reverberated more and more in my mind was that “this is why ASSAR has been worth it”...

Although Divya had an interest in gender, when the UEA (University of East Anglia) gender training was planned in June 2015, she was hesitant about joining, as she had no theoretical backing on the subject. Luckily, the course’s comprehensiveness started from exploring ground-level literature, discussing how a gender question is formulated from a development context, defining gender as going beyond the physical differentiation of the sexes to include other factors like caste or class, and looking at how these different groups experience environmental change differently. It then moved further to also cover issues of wellbeing, and gender within the broader context of vulnerability to climate change.

Not only was the opportunity to interact with experts like Laura Camfield and Nitya Rao invaluable for an understanding of the subject, but it also led to the formulation of the questions that were later explored in the **Wells and wellbeing paper**. Nitya’s experience in a wide range of topics, from labour issues to agriculture and nutrition in southern India, helped Divya to think about a novel angle and lens to frame issues of agriculture, irrigation and groundwater depletion in Tamil Nadu. It was also critical to understand the themes that were emerging during data analysis, which Divya explored through a **Small Opportunities Grant** at UEA in December 2016.

Addressing gender issues in a deeper way than through counts of female-headed households, Divya’s research unpacks what wellbeing within a household means, including through issues of cooperation between men and women. She also explores how different policies (such as electricity subsidies that promote the expansion of wells) are experienced in individuals’ everyday lives, and can enhance or undermine risk management and adaptation.

“It was nice to spend time with Nitya, as she helped to bring in aspects that I would have otherwise not thought of. In addition to helping in the framing of the paper, her suggestion to link the qualitative data to the quantitative results of our household survey, as well as to district- and state-level census data, has enabled stronger conclusions to be drawn”, explains Divya.



But this was just the beginning of Divya’s involvement in these issues. “Once you involve yourself in something that takes up so much of your mind (and time...), it ends up being a lens through which you see everything.”

Divya therefore became the perfect candidate to co-write the cross-regional changing households paper with Nitya and IHS colleague Chandni Singh. “The **January 2018 gender writeshop** was so much more than a writeshop: since everyone had already analysed their data, we could exchange ideas about causality and effects in the seven case study sites and check their validity across five countries in Africa and India. I have really valued this ability to compare beyond my micro-level work and go as far as learning about trends in Africa.”

‘My mind has been transformed’

The importance of looking at aspirations in the context of adaptation and the type of decisions people take (e.g. coping versus sustainable actions) also became increasingly clear and a focus of Divya’s follow-up research (including through her upcoming, fully-funded PhD in Michigan University), which has significant policy implications. And thinking about impact has now become nearly second nature.

“Willingly or unwillingly (i.e. through our Research-into-Use/RiU colleagues constantly pushing us), my mind has been transformed from three years ago in terms of how I think about research. I don’t want to just write articles and hope they will be picked up, I want to be part of the process. Even though RiU felt like a burden initially, the process brought home the importance of what development research really is – answering questions for a purpose and influencing the way we think about our future.”

But Divya’s practical skills have also increased: the experiential learning and RiU influencing workshops helped her to think about how to keep an audience engaged, how to facilitate a workshop and interact with different types of stakeholders, engaging differently depending on who they are.

“We have been pushed to think about solutions and even if we did not quite get there, to get a researcher to go beyond theorising a problem, is already a commendable effort.”

'Building capacity dissolves differences. It irons out inequalities'

– Abdul Kalam

By Aradhana Yaduvanshi, Researcher, Watershed Organisation Trust

My ASSAR journey began with the July 2017 **Winter School at CSAG** (Climate Systems Analysis Group) at the University of Cape Town. It was a great experience to get exposure on various aspects of climate information for adaptation and policy development. Being a hydrometeorologist, I was always inclined towards the technical side of the research, but at the Winter School I learnt to connect non-technical aspects (mapping of vulnerability, frameworks of adaptation, policy planning) with technical aspects (processing, downscaling and using projections data). Working on a case study was very helpful in putting theory to practice.

The work done by Modathir Zaroug and Mark New on studying the impacts of 1.5 and 2°C global warming on the African continent gave me the idea to undertake a similar study, identifying regional temperature and rainfall changes for India. The work was quite fascinating because it gave me a chance to expand my knowledge of programming and analysing large scale data, while the interactions and inputs from other researchers provided a good learning experience during the course of the study. This work in turn triggered a follow up research idea on regional impacts of extremes under 1.5 and 2 degree global temperature rise. This idea was converted into a proposal for a **Small Opportunity Grant** (SOG), which got accepted.



The SOG grant provided an opportunity to directly interact with Mark New about structuring the extreme work for India; his suggestions and comments were constructive and insightful. While the discussions with the ASSAR communications team to develop infographics and other Research into Use products were a bit new and informative – for a scientist like me – my learning sessions with Modathir helped a lot in understanding all about CMIP5 model data processing and analysis.



All these interactions helped in broadening my knowledge base and gave an opportunity to produce another publication, which will provide information on future extremes in different climatic zones under 1.5 and 2°C global temperature rise that could feed in the national and state action plan for climate change in India.

In ASSAR, I have really appreciated the exposure to the wide diversity of researchers working in multiple disciplines but all in the context of climate change and adaptation. But the best thing is that it provided me with a platform to work on my dream research, whereby I can seek to bridge the gap between the science of climate change and practice on the ground.

I used to be in a box of analysing and interpreting data in research, but never thought of converting it into useable information for people on the ground. ASSAR provided me, and WOTR, with a framework to do this differently. Identifying the linkages of regional level change with global datasets, understanding implications and finding solutions were the key steps in this direction.

ASSAR helped WOTR to facilitate the research work on the ground by providing funds and knowledge sharing. Apart from work, if I look back, this journey with ASSAR offered me many memorable moments. At a personal level, it has been an enriching experience by making new bonds and professional linkages.

ASSAR provided me with a platform to work on my dream research, whereby I can seek to bridge the gap between the science of climate change and practice on the ground.

“Not only has Aradhana’s capacity increased, but WOTR itself needed someone who could understand, communicate and link the climate science with our other work on the ground. Before, we thought of climate change as temperature and precipitation shifts; now we understand it more deeply, and can think about how extreme events or dry spells affect our implementation activities. This has important relevance to our work such as the agriculture team’s efforts in preparing advisories for farmers that need to take into account the increasing changes underway. We now have the ability to link large-scale trends with our fine resolution studies, and thus improve the design of adaptation projects that are contextual.”

– Marcella D’Souza, WOTR Executive Director



Strengthening capacities across scales in Namibia

By Bernadette Shalumbu, RiU Coordinator, Desert Research Foundation of Namibia/Oxfam GB

“The need for and importance of raising awareness, building capacity and empowering stakeholders at local, regional and national levels and at the individual, institutional and systemic levels to ensure a collective and timely response to climate change is emphasised.”

– Principle 4 of Namibia’s National Policy on Climate Change

The ASSAR project has successfully worked across various scales in Namibia. Given the differing capacity needs of stakeholders from the national to the local levels, ASSAR’s strategy of communication and capacity strengthening for impact has been adapted to suit these varying audiences. Through a range of activities, ASSAR has aimed to enhance the understanding of vulnerability and adaptation, and result in increased uptake of adaptation measures by stakeholders across these scales. Ultimately, the goal is also to reduce vulnerabilities, but for this to happen, people need to have the right information to make appropriate decisions. Principle 4 of Namibia’s National Policy on Climate Change – on awareness generation, education, training and capacity building – resonates with the work that ASSAR has been doing through its Research into Use (RiU) approach.

At the national level the project identified various windows of opportunity and formed strategic partnerships with key institutions and individuals who play a key role with regards to climate change. Working at this level was easy, as these stakeholders understand issues pertaining to climate change; they appreciated the contribution of the project to the National Climate Change Strategy and Action Plan; and lastly, there was a demand for evidence-based research and findings, which ASSAR was able to provide. The project was also represented on the National Climate Change Committee (NCCC) and as a result, we could report quarterly on project activities, share feedback on the research findings as well as solicit partnerships for project activities.



The ASSAR Namibia project also developed a series of newspaper articles with a science writer as another method of raising awareness among the general public on topics like the need for building capacity for local water governance, the culture of cattle and their vulnerability to drought, and the need for agency and alternative livelihoods. Writing pieces that were of interest to the papers and readers alike, as well as using terminology that was understandable, made these publications popular.

At the sub-national level, ASSAR achieved recognition by inviting regional stakeholders to activities such as the **Vulnerability and Risk Assessment** and the **Transformative Scenario Planning** workshops. The project also supported the Omusati Regional Council (ORC) to convene its **Climate change conference**, which provided a platform for various stakeholders to share evidence-based information and practices for accessing funding.

Locally, given community members’ need to better understand climate change and have the capacity to integrate adaptive responses into their changing lifestyles, the project **trained the Constituency Development Committees (CDC)** on **climate change adaptation** and disaster risk management, and **developed a radio series** in the indigenous language. Again, the networking platform provided through the NCCC allowed for some key institutions to be lead facilitators on these activities. These platforms allowed for the people on the ground to air opinions on their understanding of the issues being discussed, in addition to sharing their valuable knowledge on how they have already been adapting to the impacts of climate change. These stakeholders appreciated accessing such information in a language that they understood, and that helped to improve local level knowledge of climate change adaptation.

In the past, efforts to communicate climate change were typically focused on disseminating information rather than improving the understanding of adaptation challenges, raising awareness of adaptation pathways, encouraging dialogue or influencing behaviour change. Recently, however, there has been a shift towards a greater use of dialogue with stakeholders, and a stronger focus on knowledge co-generation. Through the **ASSAR theory of change** and the RiU approach, the project was able to bridge the gap that existed between research and uptake, for adaptation. Through these various activities, we hope to have cultivated a new culture in Namibia on how adaptation can be achieved.



Peer-to-peer learning equips pastoralists to cope better with climate change

By Alemayehu Zewdie, RiU Coordinator, Oxfam GB

Pastoralist communities in East Africa's drylands face the combined challenges of shrinking pasture and the impacts of climate change. In Kenya's Isiolo County, pastoralists have to deal with droughts, which decimate their cattle, and floods, making the need to adapt critical.

Through Participatory Scenario Analysis (PSA) workshops with local communities, ASSAR learned that people in Isiolo view pasture scarcity as a major constraint to their livelihoods. To equip pastoralists with skills to better deal with pasture scarcity, ASSAR facilitated a **peer-to-peer learning (P2P) exchange**. Pastoralists learned from others in the area about the traditional land management system, known as Dedha, and camel-rearing.

"We have learned a lot during the four days of tour. From what I have seen, we can also grow grass and store hay to save our livestock during droughts," said one of the participants, Abdul Karim, from the Kulamawe community. "I plan to propose that the Dedha council of elders set aside some areas for fodder production and bulking to complement the drought pasture reserves that the community already has." Karim was one of 21 people who took part in the learning exchange. There were seven people from each community where the PSA had been done (Kinna, Kulamawe and Kachiuru).

Learning new skills

The exchange promoted sharing of knowledge, skills, experiences and best practices among communities. It exposed participants to three core issues.



Day 1: Customary natural resource management

Participants learned about the customary institutions of natural resource management, known as Dedha in Borana. The Borana community in Isiolo county's Kinna ward has revitalised this practice, which promotes zonation of grazing land into wet season, dry season and drought grazing areas. A council of elders (jars dedha) regulates use of these areas to ensure sustainable resource management. The council of elders shared their experiences, lessons learned, challenges and opportunities with participants from Kulamawe and Kachuru (themselves Boranas).



Day 2: Camel value chain

Participants learned about camel husbandry. An expert with the Kenya Camel Milk Association (KCA) gave a presentation on the increasing adoption of camels by communities that are not traditional camel keepers in the drylands. Participants also shared their experiences since some had already embraced camel rearing. A national representative for the KCA shared a camel husbandry manual with the participants.

"Most of us never knew that there are different breeds of camel, and that there are those that are specifically for milk and those kept for meat ... to us a camel was a camel," said Hassan from Kinna. "I have just talked to Khalif (the national representative of KCA) to help me identify a camel heifer because I believe we are also capable of doing what others have succeeded at."

Day 3: Fodder Production and Preservation

The field visit to the fodder farm Bisil, in Kajiado County, was preceded by a presentation from Kenya Agricultural and Livestock Research Organisation (KARLO) on common grass species, their production and agronomic practices, as well as harvesting and marketing aspects. The participants had a chance to learn first-hand from a commercial fodder farmer about fodder production and preservation practices. The main learning was that individuals and groups who practice fodder production in the drylands not only do it to reserve pasture to sustain their herds during dry periods but also as a way of diversifying their sources of income by selling surplus hay and seeds.

Way forward

The P2P learning was a great experience for all, including the organisers. Participants learned a lot through sharing knowledge, skills and experiences among themselves and experts. There are already some indications of attitude change and possible actions that may follow the P2P. As one participant, Nasibo, from Kinna put it: "Now we know a lot about camels, for those of us who have been meaning to start camel production, we now know where to go for advice. Growing fodder would be easy for those of us who are already involved in crop production. We can then comfortably feed the young and sick animals which cannot walk to distant pastures during droughts. I will start by trying these grass seeds I have obtained from Kajiado on my farm."



Enhancing the capacity of local stakeholders to promote agriculture and food security in semi-arid Ghana

By **Rahinatu Sidiki Alare** and **Prosper Adiku**, Technical Officers, University of Ghana

In Upper West Region of Ghana, frequent climate-induced dry spells have affected farming activities, the predominant livelihood in the area. Here, the ASSAR project focused on building resilience for food security through knowledge creation and capacity support for relevant stakeholders in the Lawra and Nandom districts.

Through research and stakeholder engagements, we identified the key issues that could hinder or enable the future of agriculture in the region; and through the Transformative Scenario Planning (TSP) process, five action areas were identified to improve agriculture in the Upper West Region by 2035. These included disaster risk management, sustainable food and livelihood empowerment, improved marketing systems, ecosystem management and climate-smart water management. In line with these actions aimed at improving food security in the area, we developed and implemented a range of capacity building activities. Here we focus on two specific examples:

Grant for Local Adaptation Support (GLAS)

According to **our research**, climatic and non-climatic stressors affect the most vulnerable in society, due to structural inequalities perpetuated by traditional norms and customs. While women self-help groups (SHGs) are an important social safety net that helps overcome many of these barriers by increasing the resilience of women and their households, they are often limited in number and lack the needed capacity, skills and opportunities to be effective and sustainable.



The **GLAS** project aimed to enhance the adaptive capacity of the vulnerable through the training of women SHG leaders and the establishment of community-based advocacy and livelihood platforms, achieving the following: i) groups that previously acted in isolation in the two districts have been brought together at the leadership levels; ii) the groups have been registered as apex bodies at the respective district assemblies; iii) these groups have been linked up with the Business Advisory Centre (BAC) to facilitate their activities, access to credit and other future training programmes; iv) the groups have gained skills and processes to advocate on issues that negatively impact women livelihoods and wellbeing, holding regular meetings in this regard; and v) the women groups are now acting as trainers to empower other groups in the districts.

“Previously, we found it difficult as women to go to some offices like the district assemblies and financial institutions to ask for certain services, but with the help of ASSAR’s participatory method of engaging with us and other stakeholders, we feel confident to go to these offices. We were not united as well and were working in isolation, but through the GLAS project we now have women platforms that have been formally registered with the district assemblies working together to improve the wellbeing of women.”

– Madam Mercy Jane Sanuoo, chairperson of the Lawra women platform

Climate Adaptation Through Youth Innovation (CATYI) Competition

Implemented as part of an ASSAR Small Opportunities Grant (SOG), the **CATYI** competition was developed on the conviction that the sustainability of climate change adaptation lies in the hands of the youth, hence the need to increase their awareness and involve them in the climate change discourse. Targeting students in second cycle institutions in Lawra and Nandom districts, the competition focused on generating community-level practical solutions based on the **TSP action areas**, through encouraging students to take action in their own capacities towards the environment.

“I will encourage people and let them know that we don’t have to wait for someone to motivate us or give us something to protect our environment. We have to work hard ourselves to promote the quality of nature.”

– Maaku Samson of Lawra Senior High School



Both students and their supervisors commended ASSAR’s efforts to involve the youth. Mr Jacob Dumba, a tutor of the Lawra Senior High School asserted that the students “learnt so much about the environment and climate change through the competition”. He is of the firm view that establishing more environmental clubs in the schools will enhance students’ knowledge on environmental issues. Mohammed Ibrahim of the Nandom Senior High School, on the other hand, was grateful for being inspired and having his confidence built: “I learnt that you can’t be a good innovator if you don’t want to try.”

The competition achieved the following: i) identification of innovative solutions for community-specific climate and environmentally-induced challenges, with high potential for implementation; ii) students exposed to and able to contact existing youth-based environmental NGOs which have opportunities for youth involvement in environment and climate change action; iii) students more appreciative of the expansive nature of climate change impacts and more aware of the differences between northern and southern (coastal) Ghana through the recent visit to Accra; iv) enhanced capacity and skills of participants in identifying innovative solutions and communicating environmental issues. The students’ presentation skills also improved as some used PowerPoint for the first time.

The marriage between ASSAR’s research findings and the TSP workshops resulted in a clear understanding of the barriers and key areas that needed targeting to achieve more effective, widespread and sustained adaptation responses. The capacity building activities that followed sought to strengthen the ability of strategic stakeholders to act and remove such barriers, and to enhance vulnerable populations’ adaptive capacity and wellbeing.

Capacity development around soil and water management in the district of Koutiala, Mali: from need to deed

By Amadou Sidibé, Researcher, International Crops Research Institute for the Semi-Arid Tropics

Capacity development, one of ASSAR's key components of research for impact, is needed to create the conditions for stakeholders to take action leading to improved wellbeing and adaptive outcomes.

The district of Koutiala is facing many pressing climatic and non-climatic challenges for agriculture, natural resources and food security. These include access to farm inputs, technology and equipment; security, regulatory and governance challenges; erratic rainfall; high population growth; and the subsequent high pressure on land and other natural resources.

To tackle these challenges, the ASSAR team in Mali used **Transformative Scenario Planning (TSP)** in 2016 with a diverse group of stakeholders to imagine what might happen to Koutiala's agriculture, natural resources and food security up to the year 2035. While the participants identified many climatic and non-climatic factors that could influence the development of agricultural activities, access to land and to water for irrigation emerged as the two key drivers. Following the development of the scenarios, the participants prioritised major shared themes to result in 'Vision 2035':

By 2035, strategic investments will target agriculture and natural resource conservation to ensure food security and improve household income in the Koutiala district.

This vision indicates that **new capacities are needed** to enable a better use of the scarce soil and water resources and variable rainfall in the district.



Cross-border exchange visit to Burkina Faso

In order to fill this gap, and as part of ASSAR's **Scenario Based Capacity Building (SBCB)** activities, a three-day cross-border exchange visit was organised for 11 TSP participants to neighbouring Burkina Faso, which has vast experience in water and soil fertility management practices. Hired to provide the technical expertise by Oxfam, Wetlands International Mali (WIM) facilitated the exchange visit, along with two team leaders from the partner NGO AMEDD.

The first two days of discussions with staff from the *Institut International d'Ingénierie de l'Eau et de l'Environnement (2iE)* focused on the history and pros and cons of constructing BCER (*Bassin de Collecte des Eaux de Ruissellement*) – basins for the collection of run-off water to be used for irrigation during dry spells. A field visit ensued to four sites where BCER have been constructed (mainly using local labour), as well as to combined water and soil fertility management sites under the Ministry of Agriculture, which have created the conditions for irrigated vegetables, cereal and honey production by farmers.

Following the exchange visit, WIM trained 14 TSP participants, including five women, around the practices of soil and water management. They watched a video explaining the history of the BCER and learned the steps involved in their construction, including the gendered division of tasks (men are responsible for the excavation, while women help with the removal of soil). They also learned that a collective effort was being initiated through an NGO to provide food-for-work to the local labour.



Participants shared their impressions and learnings from the visit: the arid conditions of the visited sites; how the size and type of basin is adapted to farmer needs; how the basin's position must consider the site's slope; and the way collected water is used for supplemental irrigation during dry spells – for vegetable production, as well as drinking water for animals.

To learn more about the criteria for the selection of suitable sites for the basins, another field visit was arranged to identify three sites collectively for the piloting of the BCER in Koutiala. These sites will be located on private fields but easily accessible for collective learning.

Capacities will continue to be strengthened through the construction of two pilot basins, their management over time and the creation of the enabling conditions needed for scaling out sustainable water and soil management practices, in collaboration with the platform members led by AMEDD, Oxfam, WIM and extension workers.

The process is likely to go beyond ASSAR's lifetime but is certainly an adaptive capacity development that the project is leaving behind for stakeholders across scale in Koutiala, who see the construction of these basins for collecting run-off water as an interesting perspective for agricultural intensification in the district.



TSP participants from Koutiala, Mali, on a field trip to Burkina Faso. (Photo by Siaka Coulibaly, AMEDD)

The stories we encounter in the field are the story of all of our lives

By Arjun Srinivas, Researcher, Indian Institute for Human Settlements

When I started working with the ASSAR project, I was driven by a desire to understand the issues surrounding agrarian distress and migration in my home state of Karnataka. Issues around how people who had lived off the land for centuries, now found their old ways of life untenable, causing them to change, to adapt and on most occasions, move.

I am told that my ancestors were compelled to migrate out of their home in hot and arid Rayalseema in Andhra Pradesh, in the face of a severe drought a hundred years ago. The stories we encountered in the field were, in effect, the story of all of our lives.

My role in the ASSAR project took me to places that I had never been to before, ranging from informal settlements in the heart of Bangalore city to the extreme fringes of arid Gulbarga district in the north of the state.



I spoke to community leaders who had forged a life for their community in the hostile city, as well as with farmers who had stayed on in their home villages in the face of desperate adversity. The range of problems, as well as the stories of adaptation and resilience that we encountered helped discern a nuanced understanding around the issues of vulnerability and adaptation to climate change.

It was a very enriching experience to see through the entire duration of the project, right from the conceptualisation of the research to the fieldwork as well as the writing.

The combination of methodological approaches that were adopted, including a large-scale household survey, qualitative interviews and geo-spatial analysis, meant there was a lot to learn throughout the course of the project.

In addition to academic writing, there was the space as well as encouragement to write popular articles to disseminate findings from the research. Therefore, along with my engagement with the research, I was able to pursue my interest in journalism as well.

The project offered ample opportunities to learn and travel by supporting collaborative work with the regional partners. The ASSAR SOG (Small Opportunities Grant) enabled me to travel to the University of Cape Town to work with Prof Martine Visser and her team in developing household survey instruments that were consistent across Southern Africa and India.

The multiple workshops conducted by a range of experts throughout the duration of the project also helped build capabilities in several spheres relating to research, writing and advocacy.



I was also given the opportunity to present my work at the Impacts World Conference, 2017, conducted by the Potsdam Institute for Climate Change Research in Potsdam, Germany.

All in all, my time in the ASSAR project was extremely fruitful and enriching, and helped build skills, competencies and sensibilities for my current role as a development journalist.

The intellectual rigour, along with the spirit of inquiry that was honed through extensive fieldwork, helped me secure an extremely competitive data journalism fellowship, that I'm currently pursuing with The Hindustan Times in India.

Therefore, I carry the lessons learned from ASSAR, even in my new role.

From individual to institutional to public – ASSAR’s capacity strengthening in India

By Lucia Scodanibbio, ASSAR Project Coordinator

“I also have a story to tell: ASSAR’s strongest impact has been the capacity it has built,” says Amir Bazaz from the Indian Institute for Human Settlements (IIHS), as I update him on the topic of our latest *Spotlight*, and he inevitably draws me into another irresistible interview rabbit hole.

“To start with, ASSAR has built social and human capital in IIHS and across the India team.”

At the beginning of the project, only a couple of members had disciplinary training to lead independent research on climate issues, with the rest hailing from subjects as disparate as economics, hydrology, land use, urbanism or science and technology.

The research work and interactions with the rest of the team built and strengthened knowledge on climate adaptation and provided opportunities to learn. But in addition, the fusion of these diverse disciplines and the co-learning between the different collaborators led to the emergence of new ideas and insights.

“The way people have been pushed to think beyond disciplinary boundaries (and their comfort zone) means that the way we approach a problem, opportunities and solutions has completely changed.” The proof of the individual capacities that have been built is the number of ASSAR early career researchers that are now fully-funded PhD students at prestigious universities in Europe and the US; post-docs that are now churning out publications elsewhere; or **job holders** that outcompeted even thousands of other applicants to get to their current positions.



But institutional capacity has also been strengthened.

“Before ASSAR, IIHS’s work on climate issues mainly revolved around the IPCC [Intergovernmental Panel on Climate Change] and a few ad hoc projects. We are now seen as the go-to partner in India, on par with TERI [The Energy and Resources Institute], for climate research linked with policy and implementation; and requests for our expertise keep coming in. ASSAR has strengthened the capacity of a cohort of researchers, and now IIHS has the credibility to convene and ask difficult questions,” says Aromar Revi, as I manage to steal an hour of his precious time.

“ASSAR’s major contribution to science and policy has been through the way it shaped the **IPCC special report on 1.5 degrees**. Chandni¹ and Amir kept challenging the writing team, such as by questioning whether rural vulnerabilities had been duly accounted for, or whether particular responses would have worked in Ethiopia or Mali. The common assessment framework for adaptation and mitigation that we are proposing would have not emerged if we were not used to doing complex interdisciplinary work, on multiple issues at once. ASSAR also provided us with the opportunity to learn from different geographical and developmental contexts in the global South, and with regions – such as West Africa – we had not interacted with before,” Aromar explains.

¹ Chandni Singh and Amir Bazaz are contributing authors, with Chandni also a chapter scientist for chapter 4 of the report.

The main thing to note, is how all the additional knowledge and skills keep flowing. “How do we make people like engineers, who take decisions on the ground, aware of climate change?”

IIHS’s multi-level trainings make heavy use of the learning that has emerged from ASSAR.

“I deliver 20 three-day courses per year for frontline public officers from up to 15 different Indian states,” says Amir. “We look at government’s national programmes and tailor the relevant ASSAR content accordingly, to make it as applicable and understandable as possible, using their language. We are a mediator between these different knowledge systems. In the process, the IIHS staff who normally deliver these courses also learn about our research.” Preparing new generations is as much a priority and through the **Urban Fellows Programme**, the link between development and climate dynamics along the rural-urban continuum is explored.

“Colleagues from ATREE [Ashoka Trust for Research in Ecology and the Environment] and WOTR [Watershed Organisation Trust] have also taught in this programme. We are providing critical knowledge that is missing and which will have lasting influence, as we are leading to mindset and attitudinal change among future leaders.

“The main thing to note is that these changes are sustainable,” ends Amir. The people that are being trained – whether ASSAR colleagues, IIHS staff, public officers or young future leaders – will bring this interdisciplinary, grounded knowledge in any activity or job to follow. The hope is that all of this will lead to better decisions being taken and more adaptive responses on the ground!



ABOUT ASSAR

WHY WE FOCUS ON SEMI-ARID REGIONS

As the global impacts of climate change become more clearly understood, so too does the need for people to effectively respond and adapt to these changes. Home to hundreds of millions of people, the semi-arid regions of Africa and Asia are particularly vulnerable to climate-related impacts and risks. These climate-change hot-spots are highly dynamic systems that already experience harsh climates, adverse environmental change, and a relative paucity of natural resources. People here may be further marginalised by high levels of poverty and rapidly changing socio-economic, governance and development contexts. Although many people in these regions already display remarkable resilience, these multiple and often interlocking pressures are expected to amplify in the coming decades. Therefore, it is essential to understand how to empower people, local organisations and governments to adapt to climate change in a way that minimises vulnerability and promotes long-term resilience.



To date, most adaptation efforts have focused on reactive, short-term and site-specific solutions to climate-related vulnerabilities. Although important, these responses often fail to address the root causes of vulnerability, nor shed light on how to proactively spur larger-scale and longer-term adaptation that has positive effects on socio-economic development. Using both research and practice to address this information shortfall, ASSAR (Adaptation in Semi-Arid Regions) seeks to produce future-focused and societally-relevant knowledge of potential pathways to wellbeing through adaptation.

Our research framework

ASSAR's overarching research objective is to use insights from multiple-scale, interdisciplinary work to improve the understanding of the barriers, enablers and limits to effective, sustained and widespread adaptation out to the 2030s. Working in a coordinated manner across seven countries in India, East Africa, West Africa and Southern Africa, ASSAR's research is case study based and strives to integrate climatic, environmental, social and economic change. The dynamics of gender roles and relations form a particularly strong theme throughout our approach.

Each of ASSAR's teams conducts regionally-relevant research focused on specific socio-ecological risks/dynamics that relate centrally to livelihood transitions, and access, use and management of land and water resources in water-stressed environments. Focal research themes in each region are: agro-intensification in West Africa; land and water access in East and Southern Africa; and land use, land cover and livelihood changes in India.

Over its five-year lifespan (2014-2018), the cross-regional comparison and integration of research findings will enable ASSAR to develop a unique and systemic understanding of the processes and factors that impede adaptation and cause vulnerability to persist.

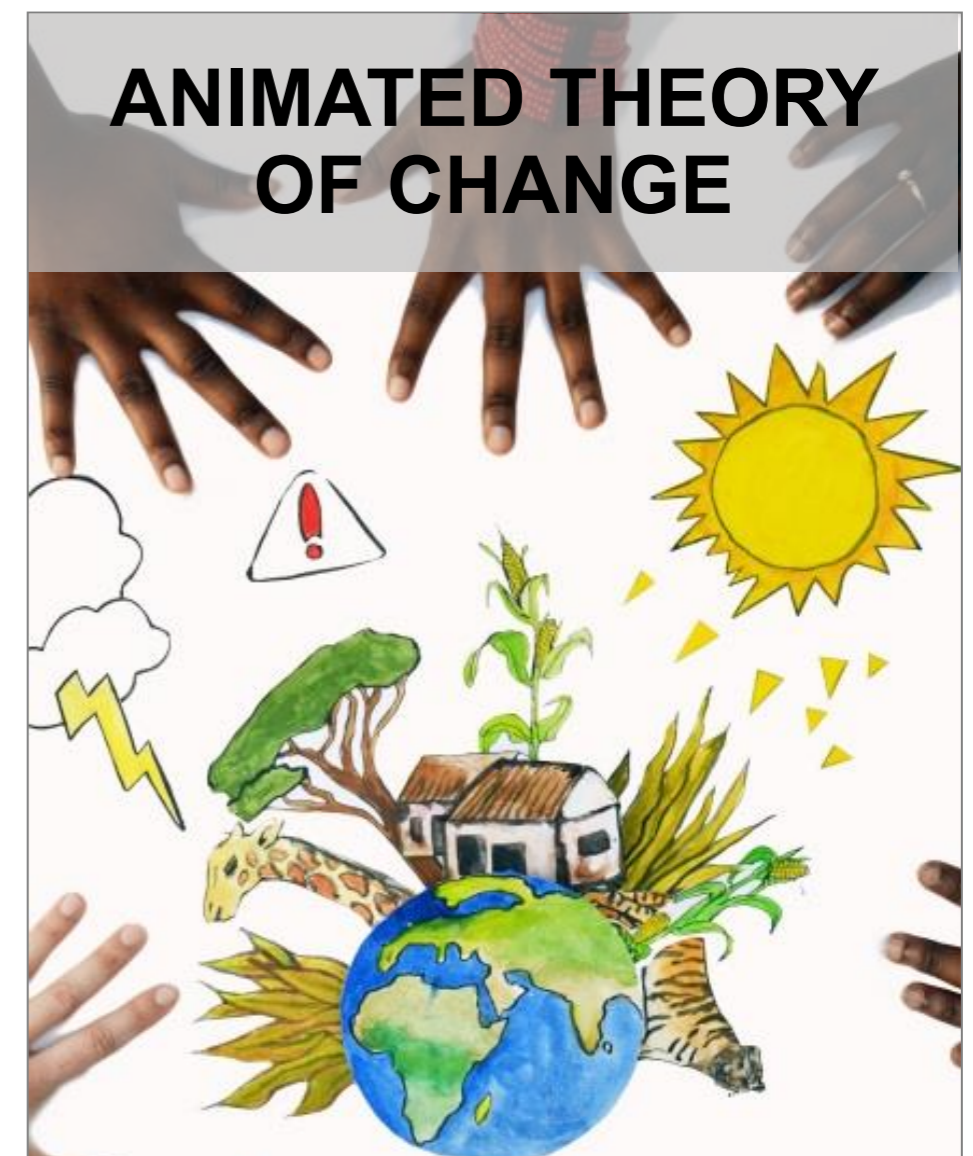
Putting our work in practice

To ensure that project case studies are aligned with the needs and realities of those living and working in semi-arid regions, and to increase the chances that findings and recommendations are taken up, ASSAR builds relationships with a wide spectrum of stakeholders from communities, civil society organisations, research institutions, governments and non-governmental organisations.

By guiding stakeholders through participatory scenario planning processes ASSAR aims to build a common understanding of current adaptation needs and past adaptation failings, while promoting the co-production of adaptation responses that can yield appropriate, tangible and lasting benefits. By using stakeholder mapping and analysis to better understand the power dynamics of different stakeholder groups, by working with and alongside boundary organisations and the private sector, and by engaging in effective communication, capacity building and advocacy campaigns, ASSAR seeks to inform and promote sustainable development pathways that have the best prospect for enhancing the wellbeing of the most vulnerable and/or marginalised in the coming decades.

Through these activities, ASSAR will better integrate the domains of adaptation research, policy and practice. By building the adaptive capacity of primary stakeholders, policy and decision makers, practitioners, boundary organisations, and academic researchers, this integration could bring about previously inconceivable strategies for change and transformation. In time these efforts could also contribute to a change in the attitudes and behaviours of key stakeholders, prompt easier and better access to resources by vulnerable groups, and enhance the power and agency of vulnerable groups to lessen or remove adaptation barriers, and exploit adaptation enablers.

ANIMATED THEORY OF CHANGE



Photos (L-R): Salma Hegga, Poshendra Satyal, Tali Hoffman

ASSAR OUTPUTS

A selection of our 2018 outputs. For more information see the [ASSAR website](#).

Journal article Large-Scale Transdisciplinary Collaboration for Adaptation Research: Challenges and Insights	Journal article Wells and well-being in South India: Gender dimensions of groundwater dependence	Journal article Climate change communication for adaptation: mapping communication pathways in semi-arid regions to identify research priorities	Journal article Climate Adaptation and Water Scarcity in Southern Africa	Journal article Observed aridity changes over the semiarid regions of India in a warming climate
Journal article Risks and responses in rural India: Implications for local climate change adaptation action	Journal article Temperature and precipitation extremes under current, 1.5 °C and 2.0 °C global warming above pre-industrial levels over Botswana, and implications for climate change vulnerability	Journal article Livelihoods on the edge without a safety net: The case of smallholder crop farming in North-Central Namibia	Journal article Recognising the dynamics that surround drought impacts	Journal article Institutional perspectives of climate-smart agriculture: a systematic literature review
Journal article Understanding the current state of collaboration in the production and dissemination of adaptation knowledge in Namibia	Journal article Identifying hotspots in land use land cover change and the drivers in a semi-arid region of India	Working paper Heat Stress – Vulnerability, health impacts, and coping strategies in rural communities in the semi-arid region of Maharashtra, India	Working paper Climate variability and impact in ASSAR's East Africa regions	Working paper Whose appropriate technology? Understanding the adoption of micro-irrigation in the face of climate and policy uncertainty
Working paper The development-adaptation spectrum in dryland East Africa: Mapping risks, responses and critical questions for social research	Working paper Vulnerability and responses to climate change in drylands: The case of Namibia	How-to Guide Conducting life history interviews	Policy brief Health vulnerability to heat stress in rural communities of the semi-arid regions of Maharashtra, India	Information brief When participation is not enough. Lessons from decentralised water governance in Namibia
Background paper Botswana's Draft Drought Management Strategy	Information brief Identifying stakeholders and vulnerabilities in Botswana's Mahalapye sub-district	Information brief Using Transformative Scenario Planning to think critically about the future of water in rural Jalna, India	Video From cows to camels: How pastoralists are adapting to climate change in Kenya's drylands	Video Under the blazing sun. A video about heat stress in India's rural areas

ASSAR PARTNERS

The international and interdisciplinary ASSAR team comprises a mix of research and practitioner organisations, and includes groups with global reach as well as those deeply embedded in their communities.

LEAD ORGANISATIONS



PARTNER ORGANISATIONS



CARIAA PROGRAMME

ASSAR is one of four hot-spot research projects in the Collaborative Adaptation Research Initiative in Africa and Asia (CARIAA) programme, funded by Canada's International Development Research Centre (IDRC) and the United Kingdom's Department for International Development (DFID).

