



International Resilience Lab

FY2024 Report



THE UNIVERSITY OF ARIZONA
ARIZONA INSTITUTE FOR RESILIENCE

International
Resilience Lab

Message from the International Resilience Lab

The University of Arizona (U of A) is well positioned to be a leader in resilience research in and around Arizona and abroad. With food insecurity rising around the globe, climate changes driving recurrent humanitarian crises, and data access widening the information resource divide, both new insights and a new generation of creative and collaborative researchers are needed.

In 2021, The Arizona Institute for Resilience (AIR) made a strategic investment to develop a program that would harness the talent of U of A faculty, students, and researchers to form partnerships to address some of the world's most pressing social and environmental challenges. We present the first Annual Report of this initiative, representing the International Resilience Lab (IRL) during fiscal year 2024 (FY24), from July 1, 2023–June 30, 2024.



IRL Mission and Vision

IRL is a group of researchers with diverse disciplinary expertise and affiliations at the U of A who have a common commitment to advancing resilience, climate adaptation, and disaster risk reduction in international contexts. IRL envisions a reality where solutions to global social and environmental challenges are developed through collaborative, socially engaged, and culturally appropriate scientific research. IRL believes that this type of research contributes to making the world more resilient and sustainable and requires transformative change. The mission of IRL is to collaboratively lead and facilitate socially engaged research and collaboration between the U of A and local and global partners.

IRL Goals

1. Produce cutting-edge research and scholarship on resilience, climate adaptation, and disaster risk reduction in international contexts.

IRL accomplishes this goal by collaboratively leading socially engaged research projects; promoting inter- and transdisciplinary collaboration, knowledge exchange, and educational opportunities for faculty, staff, and students at the U of A; and partnering with higher education institutions in the Global South.

2. Catalyze and support a community of U of A faculty, students, and researchers to advance academic and educational opportunities related to resilience, climate adaptation, and disaster risk reduction in international contexts.

IRL accomplishes this goal by developing community events and platforms where individuals can connect and collaborate on relevant academic and educational initiatives; connecting faculty, students, and researchers at the U of A to opportunities to obtain funding for socially engaged research; and managing information and knowledge exchange among network members and academic units.

“Blending development experience with [an] academic lens, takes the work to another level.”

—Nayeem Kazan on the value of a collaborative research partnership between his organization, CARE Bangladesh, and IRL.





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IRL Team

IRL Core Researchers and Staff



Zack Guido

Director, International Resilience Lab
Associate Research Professor, Arizona Institute for Resilience
Assistant Research Professor, School of Natural Resources and Environment



Corrie Hannah

Assistant Research Professor, Arizona Institute for Resilience
Principal Investigator, Climate Adaptation Research Program (CARP),
Humanitarian Assistance Technical Support (HATS)



Julia Davies

Research Scientist, Climate Adaptation Research Program (CARP)
Africa and Pacific Islands



Erica Goto

Research Scientist, International Resilience Lab,
Arizona Institute for Resilience



Sarah Clark

Program Manager, International Resilience Lab



Sonia Delphin-Perez

Research Scientist, Climate Adaptation Research Program (CARP)
Latin America and the Caribbean

U of A Graduate and Undergraduate Staff and Researchers

Diana Githu – School of Natural Resources and the Environment
Prashanti Sharma – School of Geography, Development, and Environment

HATS¹ & CARP Students

Laura McCann – PhD, School of Government and Public Policy
Kendra Martinez – Master’s in Public Health
Zayyan Essani – Bachelor’s of Science in Computer Science
Tamutswa Mahari – PhD, Department of Communication
Rediet Tadele – PhD, School of Government and Public Policy
Elham Chelabi – RISE Intern, PhD, College of Education
Connor McKay – RISE Intern, Master’s in Public Administration
Anita Lum Amaanwi Wanki – RISE Intern, Master’s in Public Administration
Sonia Elsa Rocio Delphin-Perez – RISE Intern, PhD, School of Natural Resources and the Environment

U of A Research Collaborators

Alex Braithwaite – School of Government and Public Policy
Anna Josephson – Agricultural & Resource Economics
Ben McMahon – Climate Assessment for the Southwest
Beth Tellman – School of Geography, Development, and Environment
Greg Collins – Arizona Institute for Resilience
Jeff Michler – Agricultural & Resource Economics
Rohit Mukherjee – School of Geography, Development, and Environment
Tim Finan – Bureau for Applied Research in Anthropology

¹ Humanitarian Assistance Technical Support (HATS) is a program housed in the University of Arizona’s Bureau for Applied Research in Anthropology, not IRL. It is included in this report because it is managed by Corrie Hannah.

Organizational Affiliations of External Collaborators

Auckland University of Technology, New Zealand

CARE Bangladesh

Consejo Superior Universitario Centroamericano, Guatemala

Consult Plus, Bangladesh

Cornell University, United States

Independent Researcher, India

Independent Researcher, Kenya

Ministry of Agriculture, National Agricultural Information Services (NAIS), Zambia

Ministry of Agriculture, Zambia Agriculture Research Institute, Zambia

PERIPERI U and Stellenbosch University, South Africa

TANGO International, United States

University of Cape Town, South Africa

University of Puerto Rico, Medical Sciences Campus, United States

University of Victoria, Geography, Canada

University of Victoria, Pacific and Asian Studies, Canada

University of Zimbabwe, Zimbabwe



IRL Achievements by the Numbers

IRL's activities and impact between July 1st 2023 and June 30th 2024

Produce cutting-edge research and scholarship on resilience, climate adaptation, and disaster risk reduction in international contexts.

Collaboratively lead socially engaged research projects and programs

Number of research projects
7

Average number of non-IRL partners per research project
4.6

Number of research papers published and/or submitted
7

Number of reports
16

New research funding awarded
\$10,460,833

Promote inter- and transdisciplinary collaboration, knowledge exchange, and educational opportunities for faculty, staff, and students at the University of Arizona.

Number of non-academic collaborators²
13

Number of U of A research collaborators
12

Number of non-U of A academic collaborators
11

U of A graduate student collaborators³
15

Number of knowledge exchange events hosted/cosponsored
19

Partner with higher education institutions in the Global South

Number of Global South higher education institutions collaborated with
6

Events⁴ in Global South with local higher education partners in attendance
5

Global Regions we've worked with in FY24:
7 (The Caribbean, Central America, South America, Africa, South Asia, and the Pacific)

² Non-academic collaborators are research partners from organizations whose primary focus is not research, such as partners from NGOs, community groups, government organizations, etc.

³ IRL team members supported these graduate students with mentorship and research opportunities. Financial support for 7 of the students was from BARA, the home of HATS funding, or CARP funding. Financial support for 2 students was from the RISE Internship program.

⁴ Events organized or attended.

Catalyze and support a community of University of Arizona faculty, students, and researchers to advance academic and educational opportunities related to resilience, climate adaptation, and disaster risk reduction in international contexts.

Developing community events and platforms where individuals can connect and collaborate on relevant academic and educational initiatives.

Number of U of A community events hosted
9

Number of U of A community events co-sponsored
2

Number of attendees at all events: **over 300**

Connecting faculty, students, and researchers at the University of Arizona to opportunities to obtain funding for participation in socially engaged research consultation initiatives sponsored by IRL's university and industry partners.

Number of faculty, staff, and students at U of A connected to funding (including all 6 IRL core researchers and staff)
22

Funding sources:
7 (NOAA, WMO, USAID, CIMH, SSHRC, GRP, and NSF)⁵

Managing information and knowledge exchange among network members and academic units.

U of A faculty, staff, and researchers with **at least 91** different affiliations across campus have attended at least one IRL event in FY24.



⁵ National Oceanic and Atmospheric Administration, World Meteorological Organization, United States Agency for International Development, Caribbean Institute for Meteorology and Hydrology, Social Sciences & Humanities Research Council, Global Resilience Partnership, National Science Foundation

IRL Research Areas and Societal Impact

Arizona Institute for Resilience (AIR) Themes

IRL's projects and programs advance the areas of emphasis for IRL's parent institute, AIR, by working on projects and programs that:

- 1 Develop strategies for people living in **arid lands** to adapt to a hotter, drier world
- 2 Enhance mitigation and adaptation to **climate**
- 3 Promote collective Well-being across cultures in diverse **communities**
- 4 Design efficient and equitable solutions for **energy**
- 5 Foster **environmental** resilience
- 6 Advance sustainable **water** management

| AIR Theme | Number of Projects/Programs |
|-------------|-----------------------------|
| Arid Lands | 6 |
| Climate | 8 |
| Communities | 9 |
| Energy | 3 |
| Environment | 6 |
| Water | 4 |

Societal Impacts Framework⁶

IRL seeks to connect empirically generated evidence to decision-making. Thus, impact is broadly construed and produces traditional academic outputs, like peer review articles and academic presentations, but is fundamentally oriented toward decision-making. We strive for our impact in a multifaceted way, focusing on 6 measures of societal impact:

- 1 **Instrumental Applications:** the research led to tangible changes to plans, decisions, practices, or policies.
- 2 **Conceptual Impacts:** the research contributed to changes in people's knowledge about or awareness of an issue.
- 3 **Capacity-building impacts:** This research contributed to enhancing the skills, expertise, or resources of an organization or group of people.
- 4 **Connectivity Impacts:** the research led to new or strengthened relationships, partnerships, or networks that endure after the project ends.
- 5 **Social Impacts:** the research has resulted in beneficial impacts to society
- 6 **Higher Education Impacts:** This research contributed to improvements to the structure, function, or attitudes within higher education (including improvements focused on cultural changes in higher education, making spaces more welcoming of diverse faculty, students, and knowledge.)

| Type of Impact | Number of Projects/Programs |
|---------------------------|-----------------------------|
| Instrumental Applications | 3 |
| Conceptual Impacts | 6 |
| Capacity Building Impacts | 4 |
| Connectivity Impacts | 6 |
| Social Impacts | 2 |
| Higher Education Impacts | 3 |

⁶ The Societal Impacts Framework was developed by [Alison Meadow](#) and [Gigi Owen](#) at the U of A.



Research Programs

Climate Adaptation Research Program (CARP)

Years of implementation

CARP Pilot: 2022–2024

Extended CARP: 2023–2028

Duration and Funding

10/2023–09/2028 | \$10,338,213.00

The Program

The [Climate Adaptation Research Program](#) (CARP) aims to improve disaster preparedness and planning through applied and localized research on climate adaptation and Disaster Risk Reduction (DRR) in the Global South. CARP promotes a new generation of early career researchers who focus on applied climate adaptation research on the impacts and implications for disaster risk reduction (DRR) policies and strategies. The University of Arizona co-implements the program with strategic regional partners in Africa, Latin America and the Caribbean (LAC), and the Pacific Islands. This program is made possible by the generous support of the American people through the US Agency for International Development (USAID), more specifically the [Bureau for Humanitarian Assistance](#) (BHA). The USAID administers the U.S. foreign assistance program providing economic and humanitarian assistance in more than 80 countries worldwide.

CARP has the following objectives:



Establish a cross-regional program: CARP will engage scholars from several Higher Education Institutions in Africa, Latin America and the Caribbean, and the Pacific Islands.



Provide funding and technical support: Scholars receive research funding and technical guidance on applied research methods and stakeholder engagement to inform localized climate adaptation and DRR solutions, strategies, and policies.



Create knowledge exchange opportunities: CARP fosters peer learning and knowledge sharing by hosting an interactive online webinar series and collaborative in-person workshops.



Build a community: CARP aims to create an active global community of scholars, practitioners, and decision-makers engaged in the effort to meet the challenges of climate change adaptation and DRR.



CARP initiated its activities in Africa as a two-year program (2022–2024), and in 2023 was expanded to the LAC and Pacific Islands regions for an additional five years. The University of Arizona implements CARP in partnership with Stellenbosch University (Africa), the Consejo Superior Universitario Centroamericano (CSUCA, LAC), and Auckland University of Technology (AUT, Pacific).



Countries in which the CARP is hosting research projects (2023–present)



Locations of CARP scholars' research project field sites (2023–present)

Key FY2024 Achievements

Funding Support

- 33 projects received funding from CARP in the Africa region benefiting more than 125 scholars working on climate adaptation and disaster risk reduction (DRR).
- Requests for new proposals were launched in Africa and LAC in May 2024.

In-person Workshops

- Two in-person workshops were organized, in collaboration with our regional partners, in [Tanzania](#) and [Ethiopia](#). These workshops brought together the CARP African scholars, as well as practitioners and decision makers from the region.
- The CARP team at the University of Arizona hosted an in-person workshop in [Tucson](#) with the participation of the CARP Global Regional Partners.
- CARP kicked off its activities in the Latin America and Caribbean region with a workshop attended by 43 university rectors and other authorities. This workshop was hosted in [Guatemala](#).

Webinars

CARP holds a monthly webinar series to cover different topics related to research and DRR. More than 10 webinars were hosted during this reporting period, and the recordings can be found in the following [link](#).

The CARP Community

In Africa, CARP has successfully built a community of scholars, practitioners, and decision makers who come together to discuss pressing issues related to DRR. This community is a great platform for exchanging ideas and supporting one another in conducting research in this field.



More information about CARP can be found in the following [link](#).

CARP Management Team

Corrie Hannah, IRL
Tim Finan, Professor Emeritus, Anthropology
Julia Davies, IRL
Sonia Delphin, IRL

Other collaborators

Erica Goto, IRL
Connie MacManus, São Paulo Research Foundation (FAPESP)

Regional Partners





"What sets our program apart from other initiatives is that we are mobilizing and empowering a new generation of young scholars who will advance climate adaptation and mitigate risks to climate-related hazards in their countries. Our goal is to see a stronger network of researchers across the Global South who are actively leading impact-oriented research with their local communities and sharing these research results at local, regional, and global levels.

Providing support for research and education will enhance the capacity of local communities to study climate impacts, prepare for disasters, and adapt to our changing world. At the end of the day, we won't adapt to climate change through solely writing papers in our offices. We must work directly with people in affected communities.



- Corrie Hannah, CARP Principal Investigator, University of Arizona

"This expanded CARP is a unique and exciting opportunity for the University (of Arizona). It creates critical partnerships around the globe that will allow the university to join forces with dozens of universities in the collaborative effort to solve pressing climate adaptation at the local level."



Tim Finan, Professor Emeritus of Anthropology, and Co-Principal Investigator of CARP, University of Arizona




"We value this opportunity as our countries are very vulnerable to climate disasters. This program enables collaborative and integrated work, which is necessary to overcome global challenges."



Carlos Guillermo Alvarado Corzo, General Secretary of the Consejo Superior Universitario Centroamericano

CARP Regional Coordination Unit for Latin America and the Caribbean



"African scholars will embrace the opportunity to take ownership of the research agenda to address Africa-specific challenges related to climate change."



Nico Elena, Director of the Centre for Collaboration in Africa and the PERIPERI-U network at Stellenbosch University in South Africa
CARP Regional Coordination Unit for Africa



"When we look towards solving ongoing problems, we need to look to the use of knowledge from all stakeholders and how we can work together more effectively. The CARP is an important advancement in coordinating an international effort."

Connie McManus, International manager for the Sao Paulo Research Foundation in Brazil



"CARP provides needed scope to grow disaster risk scholarship in regions at the forefront of climate change"



Alicia Holloway, CARP co-investigator and associate professor of Disaster Risk Management and Development at the Auckland University of Technology.



Humanitarian Assistance Technical Support (HATS)

Situated in the Bureau for Applied Research in Anthropology (BARA) in the School of Anthropology, [HATS](#) is a global initiative at the University of Arizona that is designed to support the U.S. Government's commitment to prepare for and respond to international humanitarian disasters.

University of Arizona technical staff supports the USAID's Bureau for Humanitarian Assistance in the areas of Hydrometeorological Hazards, Economic Recovery & Market Systems, and Humanitarian Coordination & Information Management. At the same time, HATS engages with a diverse and interdisciplinary pool of University of Arizona faculty, students, and staff in finding innovative strategies and solutions to reduce global disasters' causes and impacts through research and learning opportunities.

HATS regularly hosts in-person and virtual seminars and also maintains a HATS graduate team that has engaged in research on topics relevant to disaster risk management and humanitarian assistance. HATS has also engaged with the Educational Initiatives team at the Arizona Institute for Resilience to host four RISE interns and contribute content to the design of the International Development and Humanitarian Assistance course for the International Development emphasis of the Master's in Resilience Practice program to be launched in AIR in 2025.

The pilot of the Climate Adaptation Research Program (CARP) from 2022–2024 was also established through HATS as a funded modification to the grant.

Duration and Funding

2019–2025 | \$7,891,289 | USAID Bureau for Humanitarian Assistance

Key FY2024 Achievements

- Research
- Training the Next Generation

IRL Researchers and Research Collaborators

Corrie Hannah, IRL
Julia Davies, IRL
Tim Finan, Professor Emeritus, Anthropology

University of Arizona BHA Faculty

Ayse Sezin Tokar – USAID Focus Area, Hydrometeorological Hazards
Laura Meissner – USAID Focus Area, Economic Recovery & Market Systems
Rhonda Stewart – USAID Focus Area, Humanitarian Coordination & Information Management

HATS & CARP Student Team (2023–2024)

Laura McCann – PhD, School of Government and Public Policy
Kendra Martinez – Master's in Public Health
Zayyan Essani – Bachelor's of Science in Computer Science
Tamutswa Mahari – PhD, Department of Communication
Rediet Tadele – PhD, School of Government and Public Policy
Elham Chelabi – RISE Intern, PhD, College of Education
Connor McKay – RISE Intern, Master's in Public Administration
Anita Lum Amaanwi Wanki – RISE Intern, Master's in Public Administration
Sonia Elsa Rocio Delphin-Perez – RISE Intern, PhD, School of Natural Resources and the Environment

ADDRESSING REFUGEE HEALTH DISPARITIES: EXPLORING REFUGEE HEALTH PROGRAMS AT THE UNIVERSITY OF ARIZONA

January 31, 2024 · 1-4 pm · ENR2 S215

The event will serve as a platform to explore diverse research on refugee health in Tucson, Arizona, and share information about resources and programs offered by refugee-serving organizations. Attendees will be able to network and make connections.

To reserve your spot, please register online: tinyurl.com/refugeeforum2024



Juliana Davis
Refugee Health Manager,
Arizona Refugee
Resettlement Program, DES

Dr. Sommer Aldulaimi
Associate Professor,
College of Medicine

Dr. Julie Armin
Assistant Professor,
College of Medicine

Dr. Sarah Yeo
Postdoctoral Fellow,
UA Cancer Center



Jacy Farkas, MA, ABD
Sonoran Center for
Excellence in Disabilities



Diba Fallah, MS
PhD Student
College of Education



Jerome Koleski, MD
Assistant Professor,
College of Medicine

PROGRAM AGENDA

- 1:00-1:10 pm **Welcoming Remarks**, Dr. Aldulaimi
- 1:10-1:40 pm **Keynote**, Juliana Davis
- 1:40-2:00 pm **Presentation 1:** Findings from a study of refugee access to disability services in Arizona
Presenters: Julie Armin, PhD; Jacy Farkas, MA, ABD; Diba Fallah, MS
- 2:00-2:10 pm **Break**
- 2:10-2:30 pm **Presentation 2:** Developing a health care Care navigation competency scale for refugees in the United States
Presenter: Sarah Yeo, PhD
- 2:30-2:50 pm **Presentation 3:** Caring for medically complex refugees
Presenters: Sommer Aldulaimi, MD, FAAP; Jerome Koleski, MD
- 2:50-3:00 pm **Break**
- 3:00-3:20 pm **Community Panel Discussion**
- 3:20-3:40 pm **Closing and Networking**



HATS- SPEAKER SERIES LAURA MEISSNER

FEBRUARY 29, 2024
ENR2 N595/ZOOM
3:00-4:30 PM



Laura Meissner is a Senior Economic Recovery and Market Systems Advisor with USAID's Bureau for Humanitarian Assistance through an agreement with the University of Arizona's Bureau for Applied Research and Anthropology. She has supported emergency response and recovery across various contexts, including the Horn of Africa, the Sahel, the Venezuela regional response, Iraq, Syria, Ukraine, and the West Bank and Gaza. Prior to joining UA and USAID in 2010, Laura managed the Minimum Economic Recovery Standards initiative and led practitioner learning initiatives for microenterprise development and financial services at the SEEP Network. She holds a B.S. in foreign service from Georgetown University and an M.A. in international development from American University.

For more information or to schedule an additional time to meet with Laura on March 1, please contact:
Corrie Hannah: corrieh@arizona.edu



Water Justice Knowledge Exchange Launch



Wed, September 6th
9 AM - 1 PM
ENR2 S225
Learn more and register at <https://bit.ly/WJKX>

Interested in community-based research and how water relates to social justice? Attend the Water Justice Knowledge Exchange Launch to learn from both researchers, community-based partners and share your own experiences. Open to all UA students, faculty, and staff.

Agenda

- 9:00 - 9:30 AM: Breakfast + Welcome
- 9:30 - 10:20 AM: Presentation and Q+A with Dr. Adriana Zuniga-Teran and Flor Sandoval
- 10:20 - 11:10 AM: Presentation and Q+A with Dr. Neha Gupta and Blue Baldwin
- 11:10 - 11:20 AM: Break
- 11:20 - 12:30 PM: Workshop led by Dr. Mónica Ramírez-Andreotta
- 12:30 - 1 PM: Closing + Lunch

Sponsored by:



Dr. Adriana Zuniga-Teran
Assistant Professor
School of Geography,
Development and Environment



Flor Sandoval
Program Director
Sonora Environmental
Research Institute, Inc.



Dr. Neha Gupta
Assistant Research Professor
Arizona Institute
for Resilience



Blue Baldwin
Program Manager
Storm to Shade
City of Tucson



Dr. Mónica Ramírez-Andreotta
Associate Professor
Environmental Science



Enhancing Evidence for Humanitarian Action in the Face of Climate Change (EEHA)

The Bureau for Humanitarian Assistance (BHA) within USAID addresses disasters and humanitarian crises around the world through its emergency programming. Typically, emergency funding is channeled through projects that have a short life span—usually one to two years in duration. Many emergency interventions, however, are designed and intended to produce changes that extend far beyond the life of the project. For this reason, the impacts of the interventions, such as organizational changes that enhance disaster risk reduction, are not documented, limiting both the communication of benefits and the programmatic learning that would inform future endeavors

EEHA is a USAID-funded project aiming to improve humanitarian investments in early warning, disaster risk reduction, and climate adaptation. EEHA has the goal of capturing evidence of longer-term benefits from short-term interventions by developing new indicators and methods to better assess the effectiveness of humanitarian programs. Core components of the project involve a systematic review of USAID emergency program documents, assessments of recent programs in Kenya and Bangladesh, and 3 pilot projects to test indicators and methods.

Duration and Funding

2022–2025 | \$999,997 | USAID Bureau for Humanitarian Assistance

Key FY2024 Achievements

- Creation of an humanitarian intervention typology and analytical framework for evaluating the longer-term impacts on short-term emergency programming activities.
- Design of three research pilots: one that uses participatory methods to develop indicators to measure the capacity for collective action in the context of Bangladesh, one that uses a recurrent survey in Kenya to explain behaviors related to household asset protection and livelihood diversification, and a third that uses remote sensing to assess changes in agriculture area and intensity.

IRL Researchers and Research Collaborators

| | |
|--------------------------|---|
| Zack Guido, IRL | Beth Tellman, SGDE |
| Erica Goto, IRL | Tim Finan, Anthropology |
| Corrie Hannah, IRL | Greg Collins, AIR |
| Jeff Michler, AREC | Diana Githu, ARLS |
| Anna Josephson, AREC | Prashanti Sharma, SGDE |
| Osaretin Olurotimi, AREC | Rohit Mukherjee, SGDE |
| Alex Braithwaite, SGPP | Tim Frankenberger, TANGO International (Tucson) |





Southern African Resilience Academy (SARA)— Building Equitable Resilience in Southern Africa

IRL Researchers and Research Collaborators

Corrie Hannah, IRL

Julia Davies, IRL

Urban food systems (UFS) in southern Africa rely on diverse food sources, including formal and informal retailers, as well as household strategies like urban agriculture. However, many low- to middle-income households, especially female-headed households, experience persistent food insecurity, driven by unstable incomes and exacerbated by the COVID-19 pandemic, food price shocks, and climate impacts.

To assess the resilience and equity of UFS in Zambian cities, IRL researchers created a scholar-practitioner working group that collaborated online and met in person in Stellenbosch, South Africa for the third of three workshops in August 2023. Key partners included the University of Cape Town, University of Zimbabwe, Indiana University, and Zambia Ministry of Agriculture, with support from the Global Resilience Partnership and Stellenbosch University.

Resilient UFS incorporate diverse food sources and strengthen the entire food value chain to withstand shocks. UFS are equitable when they ensure that all urban residents are food secure. The working group analyzed data from a household survey conducted in 14 Zambian cities to analyze food sourcing patterns among different types of households and identify the unique strengths and vulnerabilities of each city. This analysis also revealed how decision-makers are supporting UFS in responding to shocks and building long-term resilience and equity.

Key FY2024 Achievements

- **Working group** members developed a policy brief ([SARA Policy Note, July 2023](#)) which highlights key types of policies that can affect UFS in the Southern Africa region and explores the pivotal role of urban planners in shaping these UFS, emphasizing the importance of inclusive representation and stakeholder engagement in decision-making processes.
- To accompany the policy brief, the working group created a [Toolkit](#), specifically aimed at Zambian policymakers and urban planners, to help build more resilient and equitable UFS in Zambian cities, as well as a [poster](#) to share this information more widely with UFS stakeholders.
- In addition, they designed a [cartoon about a fictional character](#) named Mutinta, which illustrates the challenges she faces and the coping strategies she employs to maintain food security in a Zambian city.
- The findings from the household survey are being prepared for publication in a special issue of Ecology and Society showcasing SARA research. The article has been submitted and is currently under review.



“Resilient and equitable urban food systems are diverse and have the capacity to withstand and recover from shocks and stresses throughout the entire value chain, from production to consumption and waste management, while ensuring fair and sustainable access to safe, nutritious, affordable, and culturally appropriate food for all residents within an urban area, regardless of their socioeconomic status, race, ethnicity, gender, or geographic location.” —SARA Policy Note (July 2023)



Healing Forests: Mapping Biodiversity and Multispecies Relations in Northeast India

Amid COVID-19, Khasi healers drew on ancestral knowledge from the 1918 flu pandemic to combat the virus but faced challenges due to habitat loss from deforestation and mining. This research explores the connection between traditional healthcare, wounded ecosystems, and forest-reliant Indigenous communities. It investigates how Khasi healers manage medicinal plants, nurture future knowledge keepers, and restore forest biodiversity. Through community-based participatory research, the study will conduct biodiversity audits, map forest degradation, and develop tools to address biodiversity loss. The goal is to create decolonial maps and strategies for holistic ecosystem management, involving Khasi trainees and students.

Duration and Funding

11/2023–11/2025 | \$54,620.97 (Grant received as \$74,984.00 Canadian Dollars)

IRL Researchers and Research Collaborators

Erica Goto, IRL

ann-elise lewallen, University of Victoria

Jane Warjri, Independent researcher in India

Niiyokamigaabaw Deondre Smiles – University of Victoria, Geography





Gender, Power, and Resilience in the Char and Haor Regions of Bangladesh

IRL Researchers and Research Collaborators

Zack Guido, IRL
 Tim Finan, Anthropology
 people from CARE-Bangladesh

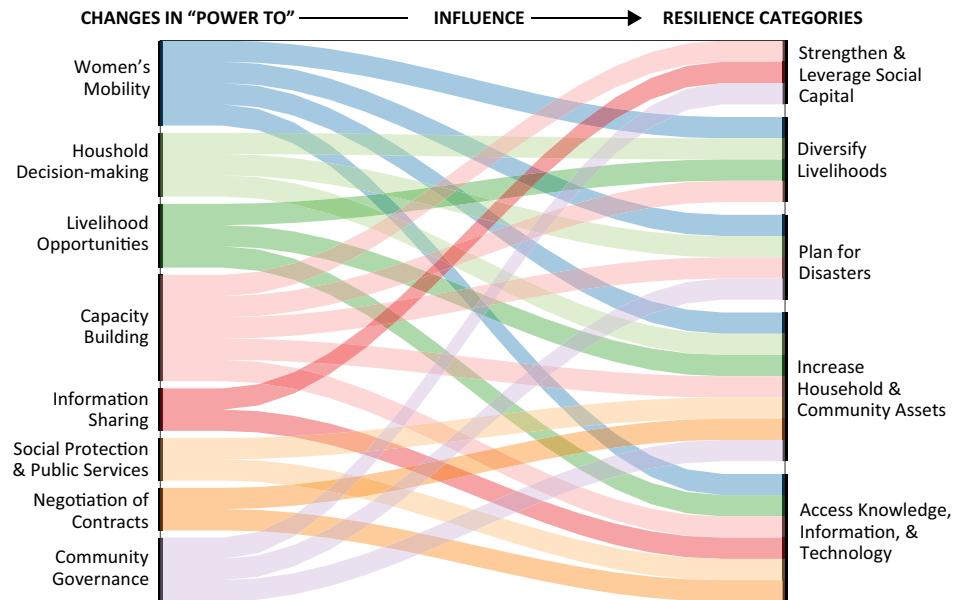
Many resilience programs use Sequencing, Layering, and Integration (SLI) strategies, often emphasizing women’s empowerment. However, a lack of evidence on effective SLI configurations limits program efficacy and long-term benefits. Additionally, while resilience focuses on external shocks and material well-being, recent research highlights the role of power dynamics, meaning, and access. This project, funded by USAID’s Implementer-Led Design, Evidence, Analysis, and Learning (IDEAL) activity and in partnership with CARE-Bangladesh, addresses these gaps by examining SLI and women’s empowerment in SHOUHARDO programming in Bangladesh’s Char and Haor regions to improve resilience outcomes.

Duration and Funding

01/2021–06/2023 | \$284,128.00

Key FY2024 Achievements

- Reports and Video



This research presented evidence of changes in “power to” act among people living in the Char and Haor regions of Bangladesh, showing them on the left side of the figure. The research also showed the activities people use to manage risk, collapsing them into five resilience categories presented on the right side of the image. The ways in which “power to” affects resilience is marked by the flow lines.

“The collaboration between my organization and the University of Arizona has been one of the most valuable and transformative experiences... I have gained a deeper understanding of social dynamics at both macro and micro levels, allowing me to appreciate and analyze changes in a more comprehensive and nuanced manner.” —Fatima Jahan Seema, CARE Bangladesh



A Resilience Learning Agenda for Community-Based Organizations at the Intersection of Climate Hazards, Energy Security, and Public Health in the U.S. Caribbean

This NOAA-funded research project was collaboratively designed and implemented by IRL, the University of Puerto Rico, and various Community-Based Organizations (CBOs) to examine how compound weather and climate events create cascading impacts across the public health and energy sectors in Puerto Rico. Using stakeholder interviews and a participatory workshop, it also sought to characterize the role that CBOs play in adapting to compound hazards and to seek their perspectives in determining a resilience learning agenda for the region. While the funding period for this project concluded in 2022, this collaboration has persisted since the funding ended, including co-authoring a paper that is currently under review.

Duration and Funding

2021–2022 | \$99,922.00 | National Oceanic and Atmospheric Organization

Key FY2024 Achievements

- Convened a workshop (maybe describe this in one sentence)
- Produced a report in English and Spanish
- Submitted paper, “Stakeholder Engagement Strategies to Build Resilience to Compound Hazards: Engaging Community-Based Organizations in Research,” to Climate Risk Management
- Developing partnerships with researchers and practitioners from the University of Puerto Rico, Sea Grant Puerto Rico, El Puente: Latino Climate Action Network, NOAA Regional Integrated Sciences and Assessments, VAMOS PR, and CARICOOS.

IRL Researchers and Research Collaborators

- Zack Guido, IRL
- Sarah Clark, IRL
- Ben McMahon, AIR
- Pablo Mendez-Lazaro, UPR
- Laura Cabrera-Rivera, UPR



A Arizona Institute for Resilient Environments & Societies





Enhancing Climate Resilience in the Caribbean through the Improvement of Caribbean Climate Outlook Forums (CariCOF)

The Caribbean Climate Outlook Forum (CariCOF) is a key platform for integrating climate forecasts into risk planning in the Caribbean. One of 21 regional climate outlook forums globally, CariCOF includes training on seasonal and sub-seasonal forecasting and a workshop connecting climate service providers with decision-makers. Held biannually since 2012, CariCOF has met 23 times, mostly in person. This research project investigates how CariCOF has influenced sectoral climate risk decision-making and evolved to meet the region’s growing demand for climate information.

Duration and Funding

2024 | \$67,990.00 | Caribbean Institute for Meteorology and Hydrology

Key FY2024 Achievements

- *Investigating Stakeholder Perspectives*
As part of this evaluation, the research team attended the May 2024 CariCOF in Georgetown Guyana to conduct stakeholder interviews and host a participatory workshop session. An online survey followed (in July and August) that was completed by 115 people. Full report to be completed in Fall 2024.

IRL Researchers and Research Collaborators

Erica Goto, IRL
Zack Guido, IRL
Sarah Clark, IRL

In partnership with researchers at the Caribbean Institute for Meteorology and Hydrology

1
Participatory
workshop

29
Interviews

115
Surveys
completed



**Community Building
Events and Activities**

Community-Building

A core goal of the International Resilience Lab is to catalyze and support a community of University of Arizona faculty, students, and researchers to advance academic and educational opportunities related to resilience, climate adaptation, and disaster risk reduction in international contexts. As mentioned previously in this report, one mechanism by which we accomplish this is by developing community events and platforms where individuals can connect and collaborate on relevant academic and educational initiatives.

Such events function to strengthen connections across the University, bring external speakers to the U of A, inspire novel research collaborations, and support information and knowledge exchange among network members and academic units. Below we share the community events that IRL has hosted or co-sponsored for the U of A community in FY2024.



U of A Symposium on Global Challenges

IRL hosted a symposium that featured speakers from across the University of Arizona, TANGO International, U.S. Agency of International Development, Global Resilience Partnership, the World Food Program, and NASA. The goals were to animate interest for collaborative research focused resilience and international development and to share ideas and experiences. More than 107 people attended in person and online.

Knowledge Exchange Events

| Date | Event Title and Description |
|--------------------------|--|
| April 4, 2024 | Lightning Talks on Climate Adaptation in the Global South |
| February 29, 2024 | HATS Seminar: Laura Meissner from USAID's Bureau for Humanitarian Assistance |
| February 2, 2024 | "From Data to Knowledge: The Rise of Climate Services" |
| January 31, 2024 | Addressing Refugee Health Disparities: Exploring Refugee Health Programs at the U of A |
| December 14, 2023 | Frontiers in Climate Services for Global Development Challenges Part 4: "Oft expectation fails"—Why Climate Services Should Rethink Forecasts" |
| November 30, 2023 | Frontiers in Climate Services for Global Development Challenges Part 3: "Producing Projects & Subjects: Intersections & Ideas from Climate Adaptation for Climate Information Services" |
| November 15, 2023 | Frontiers in Climate Services for Global Development Challenges Part 2: "Climate Information as MacGuffin: the Overlooked Value of Seasonal Forecasts for Adaptation" |
| November 9, 2023 | Symposium on Resilience and International Development |
| November 2, 2023 | Frontiers in Climate Services for Global Development Challenges Part 1: "Climate Services as Tools for Transformative Change" |
| September–November, 2023 | Water Justice Knowledge Exchange |

Lightning Talks on CLIMATE ADAPTATION IN THE GLOBAL SOUTH

April 5, 2024 · 1–3 PM · ENR2 S215

On April 5th from 1:00–3:00pm in ENR2 Room S215, the International Resilience Lab (a co-leading program of AIRID) will host “Lightning Talks on Climate Adaptation in the Global South.” This event will provide a space for researchers from across the University of Arizona to come together, share their work, and connect across disciplines.



SPEAKER REGISTRATION

Do you conduct research on Climate Adaptation in the Global South (or of relevance to the Global South)? [Register here](#) to give a 5–8 minute lightning talk on your work.



ATTENDEE REGISTRATION

Are you interested in learning more about this field? [Register here](#) to attend this event as an audience member.

Register by March 15th to attend or present.



FRONTIERS IN CLIMATE SERVICES FOR GLOBAL DEVELOPMENT CHALLENGES

Photo by Zack Gutts

This virtual series from the University of Arizona’s AIR International Programs, NOAA, and USAID will serve as a platform for highlighting new thinking and practices at the nexus of climate services and development. It supports the President’s Emergency Plan for Adaptation and Resilience (PREPARE), including the use of social, behavioral and economic sciences to shape climate services and adaptation solutions. This fall, we will begin the virtual series with four talks by expert scholars.

To reserve your spot, please register online: tinyurl.com/frontiersclimate
Those who register will also receive recordings of the webinars



Edward Carr

TH 11/02 @ 12pm (MST)

Climate Services as Tools for Transformative Change

Professor and Director of the International Development, Community, and Environment Department at Clark University



Chris Knudson

W 11/15 @ 11am (MST)

Climate Information as MacGuffin: Overlooked Value of Seasonal Forecasts for Adaptation

Assistant Professor of Geography at the University of Hawaii—Hilo



Helen Rosko

TH 11/30 @ 12pm (MST)

Producing Projects & Subjects: Intersections & Ideas from Climate Adaptation for Climate Information Services

Assistant Professor of Geography at Georgia Southern University



Simon Mason

TH 12/14 @ 12pm (MST)

“Oft expectation fails”—Why Climate Services Should Rethink Forecasts

Chief Climate Scientist at Columbia Climate School’s International Research Institute for Climate and Society



AIRID PRESENTS THE 2023 SYMPOSIUM ON RESILIENCE AND INTERNATIONAL DEVELOPMENT

Photo by Zack Gutts

Thursday, November 9
9:00am–4:30pm
ENR2 S107 and Online

Resilience research,
partnerships, and solutions
for today’s most pressing
global challenges

[Learn More and Register Here](#)



THE UNIVERSITY OF ARIZONA
Arizona Initiative for
Resilience & International
Development

ARIZONA INSTITUTE FOR RESILIENCE
International Programs

Join the Arizona Initiative for Resilience and International Development and AIR International Programs for their 2023 Symposium. This full-day event will feature speakers from across the University of Arizona, TANGO International, USAID, Global Resilience Partnership, the World Food Program, and NASA as well as other NGO and government partners.

Register by October 26th to

- Hear from experts on the role that Universities can play in advancing resilience and addressing the world’s most pressing challenges.
- Learn how you can get involved, identify funding opportunities, and connect with external partners to amplify your research towards resilient solutions.
- Be a part of discussions at the forefront of today’s most pressing global challenges.

This Symposium will feature a special recognition of Dr. Tim Finan’s contributions to research and education on development during his 43-year tenure at the University of Arizona.

Grants for Working Groups on Climate Adaptation in the Global South

In May 2023, IRL competitively selected two proposals to receive up to \$15,000 in grant funding through May 2024. This funding was intended to support working groups on climate adaptation in the Global South and was the latest iteration of a seed funding initiative that IRL has sponsored since 2021. This initiative has provided resources and support for inter- and trans-disciplinary research collaborations based at the University of Arizona centered on IRL's main areas of focus: climate adaptation, disaster risk reduction, and international development. Since 2021, IRL has funded 8 projects through this initiative, playing a critical role in helping to support and launch research collaborations across the U of A campus and beyond. Work funded via this initiative has continued to grow beyond each respective funding period. Past grantees have continued their relationships with one another and IRL and gone on to develop into peer-reviewed studies, NSF proposals, and large transdisciplinary workshops. The working groups awarded IRL Grants for Working Groups on Climate Adaptation in the Global South for the period of May, 2023–May, 2024 are described on the following page.



Serial Migration as a Form of Climate Adaptation in Bangladesh: Multiple Shocks and Psychosocial Resilience among Marginalized Groups

Brief Description: This pilot study will explore the climate adaptation and resilience of serial climate migrants within Bangladesh. What effect does climate change play in the various steps of serial migration and how do various stressors interact? This project will be one of the first to connect climate change to multiple points along the internal migrant journey. A serial migration lens will highlight the multiple shocks, vulnerabilities, and corresponding resilience and adaptability of these groups. This working group will especially focus on psychosocial resilience which is just beginning to be studied in the context of climate adaptation (Cisse et al. 2023). The working group will conduct qualitative interviews with migrants at several points along the internal migration journey, including the Sundarbans along the coast, larger coastal towns, and the large cities of Chittagong and Dhaka. This interdisciplinary team has extensive experience conducting qualitative research with marginalized communities in Bangladesh and beyond.

Working Group Members

- **William Paul Simmons** (Lead), Director Human Rights Practice Program, University of Arizona
- **Ishrat Zakia Sultana**, Assistant Professor and former Director, Center for Peace Studies (CPS), North South University, Dhaka, Bangladesh
- **Bulbul Siddiqi**, Associate Professor in Anthropology and Sociology at the Department of Political Science and Sociology, North South University, Dhaka, Bangladesh
- **Rafiqul Montu**, Acclaimed Independent Coastal Journalist, Bangladesh
- **M Suza Uddin**, Country Director, Artolution, Bangladesh

Working Group on the Dynamics of Migration: Mapping Stories and Data on Migration as Evidence of Climate Adaptation in Central and North America

Brief Description: The University of Arizona is uniquely positioned to lead on resilience and development research on the dynamics of migration in the Americas. Research on campus sheds light on conditions that force migrants to leave their homes, factors affecting decision-making during their journeys, and how policies impact their arrival at the US-Mexico border. Our working group will showcase this expertise. This group will convene five workshops with a broad group of U of A researchers and guests from local NGOs in the immigration sector. At the workshops, we will share ongoing research and identify avenues for future co-production. The working group will build a GIS StoryMap to collectively curate their research products and evidence. This project will also serve as a means of prompting future research ideas and showcasing our collective expertise across and beyond campus.

Working Group Co-leads

- **Alex Braithwaite** (Lead), Professor, University of Arizona School of Government & Public Policy
- **Talia Anderson**, PhD Student, University of Arizona School of Geography, Development, & Environment
- **Elise Arellano-Thompson**, PhD Student, University of Arizona School of Geography, Development, and Environment
- **Elizabeth Gaxiola**, PhD Student, Department of Teaching, Learning, and Sociocultural Studies
- **Yi jun Lin**, Postdoctoral Research Associate, University of Arizona School of Government & Public Policy
- **Daniel Martinez**, Associate Professor, University of Arizona School of Sociology
- **Elizabeth Oglesby**, Associate Professor, University of Arizona Center for Latin American Studies
- **Javier Osorio**, Assistant Professor, University of Arizona School of Government & Public Policy
- **Elizabeth Tellman**, Assistant Professor, University of Arizona School of Geography, Development, and Environment
- **Jill Williams**, Associate Research Professor, University of Arizona Southwest Institute for Research on Women