Where The Rain Falls (WtRF) Learning Report

Synthesis of key learnings from WtRF Climate Change Adaptation Projects in Africa, Latin America and Asia

WHERE the RAIN FALLS

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About the Where The Rain Falls project

Changing weather patterns are already causing weather extremes, including droughts and flooding, leading to food insecurity and displacement of people. Yet, these changing weather patterns, which include less predictable seasons and increasingly erratic rainfall, are some of the most important but least understood impacts of environmental change. While erratic weather has long presented serious challenges to people dependent on natural resources for their livelihoods, increasing variability due to climate change is making farming, pastoralism and even artisanal fishing more difficult and precarious. CARE France and the UN University's Institute for Environment and Human Security (UNU-EHS), launched the 8-country program "Where the Rain Falls" in 2011 to enhance the capacity of governments, civil society and the private sector to better understand and effectively address the relationship between changing weather patterns, food security and human mobility in some of the world's most vulnerable countries and communities. The Where the Rain Falls project, through its research, advocacy and risk reduction and adaptation efforts, provides better knowledge, recommendations and practical solutions to improve the lives of vulnerable communities in developing countries around the world.

Author
Kevin Henry - Where The Rain Falls Program Coordinator - CARE France

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For further information on any of the projects described in this paper, or if you would like to contribute to, or support CARE's work on CBA, please visit: www.carefrance.org and www.careclimatechange.org or email info-care@carefrance.org

Cover photo: Where The Rain Falls team gathered in Chiang Mai, Thailand for a learning event - November 3-7

Research

Field research was conducted in Bangladesh, India, Guatemala, Peru, Ghana, Tanzania, Thailand and Vietnam, aiming at answering the question: Under what circumstances do households use migration as a risk management strategy in response to increasing rainfall variability and food insecurity?

UNU-EHS also undertake agent-based modeling using the Tanzania research site as a test case to address the scenarios under which rainfall variability and food security may become significant drivers of human mobility in the medium (2015-2030) and long-term (2030-2080).

CIESIN at Columbia University developed maps for the project to put the research results on migration in the context of local agro-ecosystems, natural resources, and rainfall variability. The 8 country Case Study Reports and the Global Policy Report report are available on www.wheretherainfalls.org

Advocacy

Drawing on the different reports, CARE and UNU staff have undertaken a wide range of advocacy activities to share our research findings with national and international policymakers and practitioners. Research results were publicly launched at a side event at the international climate negotiations (COP18) in December 2012, after which national advocacy workshops were held in each research country. Other outreach events were organized from 2012 to 2014 in Paris, Dhaka (CBA7), Washington DC (Wilson Center), Warsaw (COP19) and Lima (COP20).

Community-Based Adaptation

CARE has further leveraged the project's research to work with colleagues to launch community-based adaptation projects in Peru, Tanzania, India, and Thailand in late 2012 and early 2013 and in Bangladesh in 2014. These projects, developed in collaboration with local communities, focus on "best-bet" adaptation interventions in the areas of sustainable agriculture and integrated water resources management. This report presents the learnings from this phase.

Project funded by : AXA redefining / standards · Prince Albert II of Monaco Foundation · MacArthur Foundation

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SYNTHESIS REPORT
ON LEARNING FROM THE WHERE THE RAIN FALLS (WTRF) COMMUNITY-BASED ADAPTATION PROJECT[1]

EXECUTIVE SUMMARY

Where the Rain Falls (WtRF) is a research-to-action project implemented by CARE France beginning in 2011 and focused on the impacts of climate change on food security and human migration in eight countries in Africa, Asia, and Latin America. This report focuses on the learning generated by the Community-Based Adaptation (CBA) component of the project, implemented since 2013 in five countries (Perú, Tanzania, India, Bangladesh and Thailand). The content of this report draws heavily on the WtRF Learning Event in Chiang Mai, Thailand in November 2014, which brought together colleagues from five Country Offices, CARE France and PECCN.

Section III of this report provides a descriptive summary of the experience of each of the five WtRF CBA projects and is based on materials provided by the Country Office teams. The country-wise summaries included in this section reveal significant similarities in objectives, impact populations, and approaches, despite the highly diverse nature of the five WtRF CBA project sites. The over-arching theme that links the five projects is that of building the resilience of poor households, whose livelihoods are largely dependent on rainfed agriculture, to climate change and variability by making better use of available water resources. Not surprisingly, all projects encountered challenges in implementation, related to: the complex nature of community-based climate change adaptation; internal CARE management issues; and the time frame and budget of the project's CBA component.

Section IV of the report analyzes the learning to date from the WtRF CBA portfolio in a number of common intervention areas and cross-cutting themes, including: sustainable agricultural practices; water management and governance; group formation and collective strengthening; approaches to the use of community-based extension volunteers; linkages to government; working with marginalized ethnic communities, targeting the poorest households, and empowering women; and partnerships. In addition, some broader lessons learned from the overall design of WtRF as a multi-country initiative are highlighted. In each area, broad observations and specific recommendations are provided to inform both the on-going implementation of the second phase of WtRF CBA projects, as well as future program designs by both CARE and other CBA practitioners.

CARE France and the WtRF team are happy to share the successes and struggles highlighted in this report with the wider CARE community of practice and colleagues in other organizations as a contribution to our collective knowledge on good CBA practice.

1. The author would like to acknowledge the contributions to this report by all of the participants of the WtRF Learning Event in Chiang Mai, Thailand in November 2014. Particular thanks go to the five Country Office teams for their written submissions and active workshop participation.

I. INTRODUCTION

Where the Rain Falls (WtRF) is a research-to-action project implemented by CARE France with the financial support of the AXA Group, the John D. and Catherine T. MacArthur Foundation, and other donors[2]. The project was designed in 2010 and launched in 2011 with a research phase investigating the impacts of climate change, particularly changes in rainfall patterns, on food security and human migration in eight countries in Africa (Ghana, Tanzania), Asia (Bangladesh, India, Thailand, Vietnam), and Latin America (Guatemala, Perú). Following the launch of WtRF's research outputs at COP18 in Doha in December 2012, the project team's focus shifted to the design and implementation of community-based adaptation (CBA) projects in Perú, Tanzania, India and Thailand, with funding from the AXA Group, and in Bangladesh with support from the Prince Albert of Monaco Foundation. As Phase I of WtRF is coming to a close in the first half of 2015, the present report is being produced to synthesize the project's learning from its CBA initiatives.

This report is the product of the Project Coordinator, based primarily on the outputs generated from the WtRF Learning Event held in Chiang Mai, Thailand in November 2014, but also drawing on his own research and field experience. The report is structured so as to first provide, in Section III, a description of the five CBA projects in the WtRF portfolio, based primarily on the materials generated by each Country Office team. This descriptive element of the report is then followed, in Section IV, by a more analytical section, organized by key components or approaches shared by most or all of the WtRF CBA projects. These common elements include both "hard" technical approaches (sustainable agriculture, water management and governance), as well as "software" interventions related to: group formation and collective strengthening; approaches to the use of community-based volunteers; linkages to government; working with marginalized ethnic communities and empowering women; and partnerships. Broader considerations related to the overall design of WtRF as a multi-country initiative are also briefly addressed in this section.

The purpose of this report is to document the experience of the WtRF CBA projects over the 2013-2015 period and to share the lessons learned with the wider CARE network, the AXA Group and other project donors, and the wider CBA community of practice. It is also expected that these lessons learned can be directly applied to CARE France's continuing work under WtRF Phase II in India, Thailand, and Bangladesh.

II. SUMMARIES OF INDIVIDUAL COUNTRY OFFICE WtRF COMMUNITY-BASED ADAPTATION (CBA) PROJECTS

As a basis for deeper exploration of project learning, each Country Office (CO) presented its results, challenges, successes, and disappointments. Their presentations are summarized below, along with a basic description of each CO's WtRF CBA project. Given the recent start-up of the Bangladesh project, the information provided is somewhat more limited for that country than that available for India, Perú, Tanzania and Thailand. The country-wise summaries below reveal significant similarities in objectives, impact populations, and approaches, despite the highly diverse nature of the five WtRF CBA project sites. All projects encountered challenges in implementation; some are inherent in the complex nature of community-based climate change adaptation in remote rural settings, while others relate more to internal CARE management issues and the basic design (i.e. time frame and budget) of the CBA component of the WtRF project. This section of the report should be seen as descriptive in nature. Many of the common themes noted above will be addressed in a more analytical way in Section IV.

Following are some of the most important distinguishing features of the WtRF CBA project portfolio:

- The over-arching theme that links the five WtRF CBA project is that of building the resilience of poor households, whose livelihoods are largely dependent on rainfed agriculture, to climate change and variability by making better use of available water resources. Approaches to this central theme are explored in settings with diverse annual rainfall conditions, ranging from under 600mm in Tanzania to

2. In addition to the initial funding provided by the AXA Group and the MacArthur Foundation, the AXA Group has provided Phase II funding in India and Thailand, and CBA project funding is being provided by: the Prince Albert Foundation (Monaco) for Bangladesh; and Chanel for Thailand.

1700mm in Bangladesh. Sites are also highly diverse in topography and location, including high mountain settings, as in Perú, to lowland, riverine settings as in Bangladesh; in some countries, WtRF CBA project sites are in very remote locations, while others are quite close to secondary urban centers;

- All WtRF CBA projects focus on some combination of the "poorest" smallholder households and women farmers. The focus on women is more explicit in some projects in how they identify their impact population. While some COs place more emphasis on identifying and working with the most vulnerable households, others work with better-off progressive farmers to serve as models for others in their communities. It is also noteworthy that several of the projects are located in communities consisting primarily of ethnic minority/tribal populations; this is the case in Perú, India, and Thailand;
- Although specific approaches and interventions vary across sites, all WtRF CBA projects include most of the following: 1) improved water resource management and governance; 2) climate-smart agriculture (crop and variety selection, soil and water conservation practices, improved agronomic practices, etc.); 3) community-based extension models; 4) linkages to local governance bodies and government services; 5) women's empowerment; 6) partnership with local civil society, government and research institutions; 7) strengthening of farmers' and women's collectives; and 8) research to generate evidence to influence policy and practice (advocacy).

A. INDIA

1. Project Title and Start Date: Improved Water Security in *Adivasi* (Tribal) Communities, January 2013.

2. Project Location: Twenty villages in Patthalgaon and Bagicha Blocks in Jashpur District, Chhattisgarh State**.**

3. Impact Population: The total population of the twenty villages is 17,189, of which 2,033 *adivasi* women and their households (total 10,165 members) have been targeted.

4. Long-term Program Goal: By 2025 *Adivasi* women and girls have water security, which will improve their well-being and increase their resilience to climate change and other shocks and stresses.

5. CBA Project Objectives: Toward the long-term program goal, the present project will focus its efforts on the following specific objectives:

a) To improve capabilities of *Adivasi* women to adapt and cope with stresses and shocks, especially water, affecting their livelihoods, including those induced by climate variability;

b) To facilitate effective participation of *Adivasi* women in decision-making related to water governance;

c) To facilitate the rehabilitation of water structures in at least five villages and establish mechanisms for their maintenance with the active participation of local communities;

d) To enhance capacities of local authorities to be more responsive and transparent in designing and implementing pro-poor and inclusive policies, programs and budgets.

6. Achievements: a) Building understanding of the area and rapport with the communities; b) Setting up a team in field; c) New relationships with Agriculture, Horticulture, Public Health Engineering, Panchayati Raj and Rural Development departments; d) Piloted improved paddy cultivation and crop diversification in 72 acres of land with 72 households; e) Guided soil and land development works for groundwater recharge and contingency water storage in 20 acres of land with 20 households; f) Mapped water structures in 20 villages, identified 20 water structures in two villages for rehabilitation, and one masonry check dam rehabilitated through community water awareness; g) Effectively linked households to various entitlements and government schemes; h) Supported 750 women and their households to voice water, livelihood and air pollution concerns in Gram Sabha and Panchayat meetings; i) Organised 15 Village Development Committees (VDCs); j) Revived 72 Self-Help Groups (SHGs) and organized 10 new SHGs; and k) Developed a cadre of 20 grassroots animators.

Masonry check dam repaired by community

7. Most Significant Challenges: a) Recruitment and training of new project team in remote location; b) Recruitment and retention of qualified, motivated village animators; c) Gaining trust of communities and strengthening Village Development Committees takes time; and d) Wild elephants pose a major threat to life and livelihoods in some villages in Bagicha Block.

8. Most Successful Interventions: a) Collectivization through Self-Help Groups (SHGs) has proven an effective vehicle for engaging *adivasi* women, mobilizing savings, and linking to government schemes and local governance structures; and b) Communities have responded positively to the introduction of the System of Rice Intensification (SRI)[3], which is showing positive results in farmer fields.

9. Disappointments: a) Failure to field team and organize office in time for 2014 *kharif* (monsoon) season, which also delayed rehabilitation of water bodies until 2015; and b) Extreme poverty and labor contribution fatigue are barrier's to community participation.

10. Surprises: a) High degree of isolation of project villages and almost complete absence of government services; b) Higher degree of receptivity to CARE interventions in Bagicha Block, which is more isolated than Pattalgaon Block and with large presence of PTGs (particularly vulnerable tribal groups); c) High preference in local communities for rice they grow themselves; d) New learning on gender constraints to some livelihood strategies (e.g. women can not plow or handle stored fodder); e) Women receptive to new initiatives, including dry season vegetable production and joint cultivation of land; f) Creativity and initiative on part of animators (e.g. in securing land rights for 20 households).

B. PERU

1. Project Title and Start Date : Promotion of Traditional Crops in High Andes Perú to Increase the Resilience of the Most Vulnerable People to Climate Change, October 2013.

2. Project Location: Eight villages of the Shullcas River sub-basin, Huancayo, Junín Region.

3. Impact Population: 300 vulnerable producers, of which 25% are women, are the target direct beneficiaries, with household members totaling 1,200. Indirect beneficiaries are the population of the Shullcas River sub-basin (13,970), who will benefit from reduced pressure on land and water resources.

4. CBA Project Goal: To contribute to food security and to increase the resilience of the most vulnerable populations to the impacts of climate change.

5. Project Objectives: To recover high Andean crops and promote sustainable agriculture to increase the resilience of the most vulnerable to climate change. Expected results are:

a) Knowledge (technical and traditional) on high Andean crops that are adapted to climate change has increased, facilitating greater access to agro-biodiversity;
b) Farmers, and in particular women producers of the Shullcas river sub-basin, implement agricultural practices adapted to the high Andes eco-system;
c) The organization of agricultural producers place a growing part of their crop production on regional and national markets.

6. Achievements: a) Field trials conducted to establish the most productive and adapted varieties of native potato and quinoa to promote; b) Rigorous research conducted to establish the lower water requirement (Kc) of native potatoes and quinoa compared to other cereal and vegetable crops grown by local farmers; c) 320 farmers directly served, of which one-third are women; d) Production plans developed in each village, with a total of 29 hectares under native potato and quinoa cultivation; e) Market research for native potato and quinoa undertaken and participation organized in regional and national fairs; f) Eight producer associations formed and umbrella cooperative under development; g) purchase agreement reached with national market; h) business plans developed to mobilize additional funds.

7. Most Significant Challenges: a) Enhancing community knowledge of climate change, its impacts, and adaptation strategies; b) Takes time to convince farmers to re-introduce native crops to replace current

3. The SRI technology, developed in Madagascar in the 1980s, is described briefly below in Section IV.

crop mix; c) Gaining community recognition for women's role in agriculture and promoting greater women's leadership.

8. Most Successful Interventions: a) Combining local knowledge and modern science to successfully reintroduce native crops with lower water requirements; b) More women assuming leadership position in producer organization's and some women achieving significant income gains; c) Research partnerships with national universities produced strong evidence for selection of crop and tree species adapted to climate change.

9. Disappointments: a) First campaign for quinoa was unsuccessful due to low knowledge, late start, and poor location; b) Initial decision to promote collective brand (designation of origin) not best marketing option due to low volumes; c) Some communal promoters not well accepted due to their selection not being validated by communities.

10. Positive Surprises: a) One community (Cochas Chico) took the initiative to process quinoa into pearl, flakes and flour to increase market opportunities and value-added; b) Some partnerships, such as that with the National Institute of Agrarian Innovation (INIA) proved much more important than planned, leading to new interventions to benefit women in the communities (e.g. guinea pig rearing).

Project site, participants and activities (trainings, cross visits, crops)

C. TANZANIA

1. Project Title and Start Date: Community-Based Adaptation to Improve the Resilience and Food Security of Marginalized and Climate-Vulnerable Women and Girls, April 2013.

2. Project Location: Seven villages in Same District, Kilimanjaro region in northern Tanzania.

3. Impact Population: Total population of seven villages is 26,789. Direct beneficiaries were 690 women and girls in 280 households (with total household size of 1,340 members).

4. CBA Project Goal: To improve resilience and food security of marginalized and climate-vulnerable women and girls in Same District.

5. Project Objectives:

a) Communities and local institutions analyzing the vulnerabilities and adaptive capacity of marginalized women and girls;

b) Local communities and institutions making equitable decisions on water resources and development informed by climate knowledge and information;

c) Communities, local institutions and government supporting the implementation of climate-resilient water management technologies with marginalized and climate-vulnerable women and girls.

6. Achievements: a) Carried out baseline survey and Climate Vulnerability and Capacity Assessment (CVCA); b) Training and capacity-building of women to actively participate in decision-making; c) 60 champion farmers

4. No-regrets" agricultural practices are defined as strategies that are yield benefits – or at the least, cause no harm – regardless of future trends in climate (Heltberg 2009).

(CF) identified and trained; d) 42 demonstration plots established on CF fields; e) Outreach by CF to 263 farmers, including 144 women; f) Rehabilitation of Bangalala village irrigation system; g) Building capacity of local institutions and communities on weather information; h) training on use of energy-efficient stoves; i) Expansion of Village Savings and Loan Associations (VSLA) in project villages; j) Research and case study on "no-regrets" agriculture practices[4] undertaken by WtRF intern Emily Baker, University of California (Davis).

7. Most Significant Challenges: a) Challenging local conditions (low rainfall, low biomass production, rainfall variability); b) Inadequate government agricultural extension services; c) Declining interest of young people in agriculture; d) Delays in project start-up and inadequate budget for productive inputs and irrigation infrastructure; e) Poor rural transport and energy infrastructure affects marketing of production; f) Government policies do not favor women and youth; g) Weak farmer organizations undermine collective marketing; h) Project timeframe is too short.

8. Most Successful Interventions: a) Package of soil and water conservation practices promoted (terraces, borders and tied ridges, double-digging, etc.) shown to increase productivity; b) Champion Farmer approach has potential for promoting labor-sharing practices and technology dissemination; c) Use of the Learning and Practice Alliance (LPA) to carry out action research, improved local coordination and influence local budget allocations (influenced Government to allocate USD40,000 to irrigation improvements in Vudee and Bangalala villages).

Champion Farmer Mama Rizaeli Samwel of Mwembe Village

9. Disappointments: a) Uptake of improved practices by other farmers still relatively limited; b) Government efforts to promote sorghum as drought-tolerant crop have limited success to date; c) Seeds and other available inputs of poor quality; d) Resignation of key project staff at critical time negatively affected project implementation.

10. Positive Surprises: a) Significant production increases achieved in Year One; b) Mulching in semi-arid areas found to be feasible using leftover residue from livestock feed; c) Learning and Practice Alliance (LPA) found to be effective in quickly building trust with government and other local partners.

D. THAILAND

1. Project Title and Start Date: Improved Water Management for Rice and Integrated Farming Areas in the Face of Climate Change, February 2013.

2. Project Location: Seven villages located in Northern Thailand: Two villages in Nan province (in Mae Jarim and Bo Klua Districts) and five villages in Chiang Mai province (in Kalayaniwatana and Om Koi districts).

3. Impact Population: The poorest and most vulnerable male and female smallholder farmers in the communities were targeted, but the number of indirect beneficiaries will correspond to the total population of the seven villages (2,423 people).

4. CBA Project Goal: By 2014, male and female smallholder farmers in seven highland communities have implemented improved water management initiatives to increase availability and/or access to water for agricultural use including rice field and integrated farming.

5. Project Objectives:

a) Seven communities in the highland areas have developed community water management and improvement programs responding to the need for water supply for agriculture purposes and water quality;

b) The seven communities have secured support from the Local Administration Organizations and other agencies responsible for water management that will contribute towards effective water management;

c) Communities join in advocacy networks to advocate for community participation in local resources management and for government support for adaptation preparedness;

d) Lessons learned are shared with stakeholders at provincial, regional and national levels for improving adaptation capacity of communities.

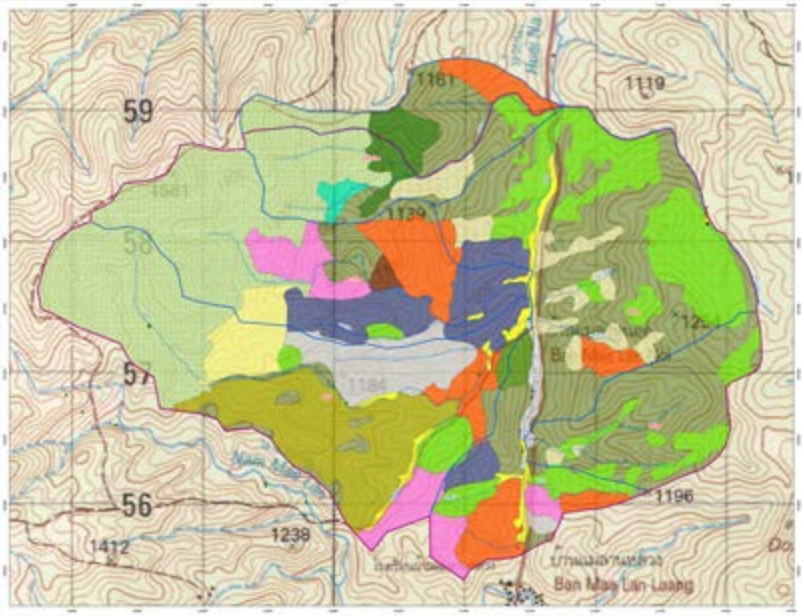
6. Achievements: a) Working groups set up in all seven villages; b) Training on climate change, project design, and gender provided to project participants; c) Seven local initiative projects designed and implemented by communities with Raks Thai and partner support; d) Additional resources for water resource management initiatives mobilized from local government, partners, and AXA (Thailand); e) Partnership with local government strengthened; f) Experience shared with civil society, government and academic partners at local and national level.

7. Most Significant Challenges: a) Water and other resource conflicts still present in project watershed (e.g. upstream vs. downstream); b) Knowledge gaps and language barriers in working with ethnic minority communities on climate change; c) Too little time for working beyond the community level with government officials and other actors; d) Need for more staff training on climate change adaptation; e) Need for more work on farming systems appropriate to topography and rainfall conditions of project area; and f) Expansion of intensive cash crop production a threat to sustainability.

8. Most Successful Interventions: a) GIS[5] mapping technology has been used extensively and effectively to improve land and water use planning and management; b) Climate change working groups have been integrated into existing local natural resource management committees; c) Local and scientific knowledge have both been used to improve water management; d) Local capacity to design and manage projects has been increased.

9. Disappointments: In some areas, though the water management was improved with active community participation, the water supply was still mainly used for cash crop production.

10. Positive Surprises: a) Stronger than expected partnership with the Hydro and Agro- Informatics Institute (HAII) led to the scaling up of climate change adaptation and disaster management and reduction in the target and nearby communities; and b) Strong direct engagement of AXA Group at both national and international levels provided additional support to CBA work in northern Thailand.



Examples of GIS Map

5. A geographic information system (GIS) is a computer system designed to capture, store, manipulate, analyze, manage, and present all types of spatial or geographical data.

E. BANGLADESH

1. Project Title and Start Date: Improving Resilience by Promoting Adaptive Agricultural Practices and Efficient Water Resource Management in Northern Bangladesh, January 2014.

2. Project Location: Five villages in northern Bangladesh, along the border with India, in Kurigram District, Rangpur Division.

3. Impact Population: The 3,500 poorest and most vulnerable male and female smallholder farmers in the communities are targeted.

Women working in her rice field in Kurigram District – early tillering stage

4. CBA Project Goal: The resilience of targeted vulnerable communities, in five villages in Kurigram district, to the impacts of the increasing variability of rainfall patterns is improved by promoting adaptive agricultural practices and sustainable water resource management.

5. Project Objectives:

a) Improve crop systems for vulnerable rainfed farming households;
b) Build institutional capacity for Community Based Adaptation at village/UP and district levels;
c) Improve our practices and those of other stakeholders.

6. Expected Results:

a) Use of land is optimal and there is diversification of agricultural practices;
b) Both men and women are empowered to continuously assess their risks and adaptive needs against variable climatic conditions;
c) Equitable access to and optimal utilization of water at community level;
d) There are more responsive and accountable service providers and local authorities are trained and able to develop context specific and inclusive gendered adaptation strategy;
e) There are no more gaps between local and national adaptation plans and practice.

7. Most Significant Challenges: a) Lack of seasonal weather forecasts and agro-met advisories, resulting in increased crop losses due to drought and flooding; b) Reaching out beyond Farmer Field School (FFS) members to other farmers in target communities; c) Limited staff capacity and turnover.

8. Achievements to Date and Most Successful Interventions: a) Baseline survey and Climate Capacity and Vulnerability Analysis (CVCA) completed; b) Eleven Farmer Field Schools established with 25 members each (including one all-female group); c) Setting up 33 demonstration plots during *aman* (monsoon) season to test different rice varieties and technologies (line sowing, balanced fertilizer, compost); d) Establishing effective linkages between farmers and local government (Union Parishad), Department of Agriculture Extension (DAE), and research institutions (BINA, BRRI, BARI) for technical advice, access to government schemes, access to seeds, and future budget allocation.

9. Positive Surprises: Farmers were surprised by the results of the flood-tolerant variety of rice (BINA-11) promoted by the project versus their traditional varieties.

Side-by-side comparison of flood-tolerant rice and traditional variety

III. SYNTHESIS OF LEARNING ON KEY THEMES

Each project in the diverse WtRF CBA portfolio has produced learning that can inform future program design and policy work related to climate change adaptation in communities engaged in rainfed smallholder agriculture. Rather than attempting to catalogue all of these individual learnings, this section of the report goes into greater depth on a number of broad themes around which the portfolio as whole can contribute to wider organizational learning.

A. CROP SELECTION AND AGRICULTURAL PRACTICES

Although most Phase I WtRF CBA projects focused primarily on improved water management, all Country Offices already began to integrate elements of sustainable, "climate-smart"[6] agriculture into their initiatives. Only CARE Perú chose to focus its CBA project on crop selection and agricultural practices (specifically the promotion of native crops). While most of these efforts can broadly be characterized under the rubric of agro-ecological approaches, each Country Office adopted different mixes of interventions, summarized in Table 1 on the following page. Common to most projects were a few basic interventions, including the promotion of good agronomic practices (e.g. line sowing) and access to quality seeds/planting material.

A number of broad lessons can already be gleaned from the experience of WtRF CBA projects in the promotion of sustainable agricultural practices, including the following: 1) Agro-ecological approaches can be readily adopted by poor[7] smallholders due to potential cost-savings (e.g. low external inputs, opportunities for labor-sharing) and have high potential to increase resilience to climate-related risks by improving soil fertility and moisture retention. While the full impact of the adoption of these practices is likely to only be observed over time, experience in the Tanzania site suggests for potential for quicker yield increases; 2) Introduction of new crops or new varieties of existing crops is likely to be an important part of future adaptation efforts, but changing both farming practices and food preferences will take time and sustained effort. The experience in Perú with the re-introduction of quinoa, a traditional Andean crop but almost completely unknown to today's farmers in the project area, is a case in point; and 3) Farming systems that integrate multiple sustainable agriculture principles and practices are most likely to sustain long-term productivity increases for smallholders. Conservation agriculture, the System of Rice Intensification, and integrated farming are examples of such systems adopted by one or more WtRF CBA project. Integrated soil fertility management, more efficient use of available water resources, and increased diversification (crops, livestock, trees, aquaculture) are key approaches, along with the promotion of good basic agronomic practices (such as line sowing) and access to good quality seeds and other planting material. The integration of women's empowerment[8] has also been shown to be a critical approach in "nutrition-sensitive" agriculture.

© Elmer Ayala

Peruvian Woman harvesting her quinoa

6. Defined by the UN Food and Agriculture Organization (FAO) as: "agriculture that sustainably increases productivity, resilience (adaptation), reduces/removes GHGs (mitigation), and enhances achievement of national food security and development goals. "Climate-Smart Agriculture: Policies, Practices and Financing for Food Security, Adaptation and Mitigation." FAO 2010, page ii.
7. However, as discussed briefly later in this report, reaching the poorest households, particularly those with little or no land of their own, remains a challenge.

Table 1: Sustainable Agriculture Practices Promoted by WtRF CBA Projects

Country Office	Key Sustainable Agriculture Practices Promoted
India	In addition to home gardens, the most promising agricultural practice already introduced in the WtRF CBA projects in India is the **System of Rice Intensification (SRI)**. SRI involves changing traditional rice cultivation practices (duration of nursery operations, line sowing, reduced flood irrigation) to increase productivity while reducing production costs and water use.
Perú	The almost exclusive focus of the project in Perú was the **re-introduction of native potatoes and quinoa**, both traditional Andean crops with lower water requirements, and including training of farmers in both production and marketing. Trials were undertaken to identify the most productive varieties of both crops best-adapted to changing climate conditions (reduced water due to glacial retreat, more frequent frost).
Tanzania	In addition to the promotion of good basic agronomic practices, the project in Tanzania focused on **soil and water conservation (SWC) practices**, including elements of conservation agriculture.[9] Specific interventions were tailored to conditions in each village, ranging from bench terraces in upland locations to *in situ* system with minimum/zonal tillage and use of cover crops in midland and lowland locations with less sloping land.
Thailand	In conjunction with improvements in water systems to increase availability for both agriculture and domestic consumption, Raks Thai promotes **integrated farming** with limited use of external inputs. Integrated farms normally incorporate rice, fruit trees, vegetables (for home consumption and the market), small livestock and/or aquaculture.
Bangladesh	Initial efforts in Bangladesh have focused on enhancing the productivity and climate-resilience of the staple crop rice. Interventions to date include the **introduction of flood-tolerant rice varieties**, use of balance fertilizer and compost, and line sowing.

Farmers in Bangladesh working on their demonstration plot and integrated farming practices

8. In future initiatives, more attention should also be paid to the potential for some agricultural technologies to increase women's workload disproportionately.
9. Conservation agriculture is a system that involves three basic principles: minimal soil disturbance/tillage; continuous soil cover; and crop rotation and/or inter-cropping.

B. WATER MANAGEMENT AND GOVERNANCE

Table 2: Water Management Interventions of WtRF CBA Projects

Country Office	Key Water Management Practices Promoted
India	**Water resource mapping** was conducted in all Phase I WtRF villages in India, and select village water bodies were identified for rehabilitation in 2015. **On-farm and micro-catchment interventions** were piloted to reduce run-off and increase infiltration, including infiltration tanks and the 5% "model", under which farmers allocate a small portion of their plots to pits to hold excess rainfall and run-off during monsoon season for later use. One check dam was rehabilitated at the community's initiative.
Perú	Although water management was not an explicit focus of the Perú CBA project, research was undertaken on the contribution to **groundwater recharge** of native species versus pines in the watershed.
Tanzania	A major **rehabilitation (canal lining) of the existing irrigation system** was undertaken in one village (Bangalala). Strengthening **local water governance** was also a focus of the Tanzania project. Through the Learning and Practice Alliance, the Same District Water Users Association was strengthened. Village irrigator associations in Vudee and Bangalala were revitalized.
Thailand	Seven local initiative projects were implemented, focusing on the construction of check dams, water reservoirs, storage tanks and water distribution piping. **Check dams**, ranging from traditional bamboo structures to larger permanent ones, reduce soil erosion, maintain stream flow and increase infiltration, making more water available longer for both home consumption and agriculture. Raks Thai has also made extensive and creative use of **GIS mapping for community land and water use planning** with project villages.
Bangladesh	Although the focus of the Bangladesh CBA project is on climate-smart agriculture practices, one of its expected results is "equitable access to and optimal utilization of water at community level."

Water management and governance was a central focus of Phase I WtRF CBA projects, particularly in India, Thailand and Tanzania. In both Thailand and India, initial successes in this area will be built on in Phase II, as the WtRF work is expanded to additional communities. In northern Thailand, where Raks Thai has been supporting check dam construction for many years, there is strong evidence of the positive impact of this intervention in terms of increased year-round water availability.[10] Further work to systematically measure and document such impacts should be undertaken to provide evidence to support the expansion of such efforts by government and other organizations. In Tanzania, where the project is ending in early 2015, traditional irrigation systems such as the one being rehabilitated in Bangalala, have been shown to experience high levels of water loss. Measuring the reduction of such losses as a result of the canal lining being undertaken can help local communities to advocate for increase government investment in water for agriculture. In India, rehabilitation of traditional village water bodies, combined with on-farm interventions such as infiltration tanks and the "5% model" have great potential to improve year-round water availability in WtRF communities; however, CARE India's work in this area is still in the very early stages, and it will only be possible to assess actual impact during Phase II of the project.

C. GROUP FORMATION AND STRENGTHENING

The strengthening of existing collectives and the formation of new groups is a central feature of all WtRF CBA projects, and the effectiveness of these efforts is a critical determinant of long-term project impact and sustainability. A summary of the diverse types of collectives promoted is provided in Table 3 on the following page. Following are a few broad observations regarding the experience of WtRF CBA projects with group formation and strengthening:

- Individual poor smallholder farmers are inherently disadvantaged in almost every way, including access

10. In some "restored streams," the period of water shortage has been reduced from four months to two months.

to and control over land, water, forests and other natural resources, access to inputs and extension services, access to market and climate information, access to output markets at fair prices, and influence over government policies and programs. For all these purposes, the formation and strengthening of collectives is essential, even if the nature and form of such groups varies widely by national context.

- Reactivating and/or strengthening existing collectives is the preferred and more efficient approach wherever feasible. If the local contextual analysis determines that no potentially viable collectives are present in the target communities, the formation of new groups can be a reasonable alternative if the project timeframe is long enough to allow new groups to reach the level of maturity required to function without external support.

- Groups such as Village Savings and Loan Associations (Tanzania) and Self-Help Groups (India) have been shown by CARE and others to be effective in empowering women and mobilizing savings to support both the productive and consumption needs of poor households.

- Equitable access to both input and output markets is another potentially important role that collectives can play; with the exception of Perú, WtRF CBA projects devoted little attention to market access so this is an area for future attention. The Perú experience suggests that access to local markets is more realistic than national markets, and also that work on market access in Year One is too ambitious (until such time as work on new crops and practices is consolidated).

Table 3: Approaches to Group Formation and Collective Strengthening

Country Office	Collective Strengthening Approaches in WtRF CBA Projects
India	At the hamlet level, **Self-Help Groups (SHGs)** are being used to engage *adivasi* women to mobilize savings, engage in productive activities, access government schemes (such as the National Rural Livelihoods Mission), and interact with the *Panchayati Raj* (local governance institution). Initial results are very encouraging, with more than 80 SHGs re-activated or newly formed, and directly engaging more than 900 *adivasi* women. The WtRF project in India is also supporting the formation of higher-level **Village Development Committees (VDCs)**; such efforts are expected to take longer to bear fruit.
Perú	In Perú, **producer groups** were formed in each WtRF project village. Additional training was provided to these groups on production planning, analysis of cost of production, and marketing. The eight communities are now creating a **cooperative** to manage their "brand of origin" and market their production. Although farmers in this area are traditionally reluctant to work as a group, some early successes can already be observed, including an initiative by one producer group to process quinoa to increase value-added.
Tanzania	In addition to the **irrigator associations** noted above, champion farmers in the WtRF villages in Tanzania organized hamlet level **labor-sharing groups** to undertake soil and water conservation practices such as bench terracing on members' fields. Later, the formation of new **Village Savings and Loan Associations (VSLAs)** was also promoted to help farmers mobilize savings and access credit for their agricultural activities.
Thailand	**Working groups** were formed in each WtRF village in Thailand to design and carry out local initiative projects. These project working groups work closely with existing community-level watershed committees and the **water resource management network** active in the project area.
Bangladesh	CARE Bangladesh is using the **Farmer Field School (FFS)** methodology[11] in its WtRF CBA project. To date, eleven FFS with 25 members each have been formed, with one consisting entirely of women farmers. These FFS have been used to establish 33 demonstration plots in the five project villages.

11. FAO and other development organizations have been promoting farmer field schools – an innovative approach to adult education first developed in Southeast Asia for pest management – to improve land and water management in Africa. Unlike traditional approaches to agricultural extension, which rely on extension workers providing advice to farmers, farmer field schools enable groups of farmers to find out the answers for themselves. See more at: http://www.fao.org/nr/land/sustainable-land-management/farmer-field-school/en/

D. USE OF COMMUNITY VOLUNTEERS AND IMPLICATIONS FOR EXTENSION

Table 4: Approaches to Extension Services and Use of Community Volunteers

Country Office	Community-Based Extension Approaches in WtRF CBA Projects
India	CARE India has used a cadre of **village animators** as the primary outreach strategy for its CBA project. One animator was recruited for each of the initial 20 WtRF villages, and each will now take on a second village under Phase II. Animators, the majority of whom are female, are recruited from the project villages, paid a stipend for their work, and are given intensive training in all project inter-ventions so that they can pass on this knowledge to project parti-cipants and facilitate linkages with government technical services.
Perú	CARE Perú made use of community-based ***promotores*** (volunteer promoters) in its WtRF CBA project. *Promotores* were selected in consultation with the communities, but their selection was not for-mally validated through established community processes. Direct linkages to government technical institutions and universities were also made by CARE staff to provide training and follow-up to pro-ducer groups on quinoa, native potato, and guinea pig production.
Tanzania	CARE Tanzania used **champion farmers** in its WtRF CBA project. 60 champion farmers (CF) were selected in village-level meetings and subsequently provided extensive training on soil and water conservation techniques and other topics. These volunteers, in turn, were expected to share their knowledge with other farmers in their communities; 263 farmers, including 144 women, were subsequently directly reached through their efforts. 42 demonstration plots were also established on CF fields to further enhance outreach.
Thailand	In WtRF villages, Raks Thai has identified a number of progressive **model farmers** to showcase the sort of sustainable integrated farming it has been promoting for many years in northern Thailand. Under Phase II, with an increased focus on climate-smart agriculture, the role of such model farmers and linkages with government and other sources of technical agricultural expertise will take on greater importance.
Bangladesh	As already noted above, CARE Bangladesh is using the Farmer Field School as the primary vehicle for outreach under its WtRF CBA project. Farmer Field School members benefit from extensive technical inputs from CARE staff and government and research institution personnel. A focus of the second year of the project will be to extend this knowledge beyond FFS members to other target vulnerable households in WtRF villages.

WtRF CBA projects employed a range of extension and outreach strategies, including making extensive use of volunteers/community-based extension agents (champion farmers, model farmers, animators, *promotores*). While these efforts have produced many promising results, experience to date also has generated a lot of learning about how to improve such efforts in the future. Following are some of the more important lessons learned:

- **Volunteer selection:** In Tanzania, not all "champion farmers" were among the most skilled, progressive and respected farmers in their communities, and this was reflected in their subsequent performance. In Perú, the initial selection of *promotores* was not subsequently validated through established community processes, leading to a lack of full acceptance by the community of their role in the project. These experiences reinforce the need for strict adherence to selection criteria[12] and attention to transparency in selection and validation processes to maximize volunteer performance and community acceptance.

- **Community-based Extension Agent (CBEA) training:** For such volunteers to be successful, they require both technical skills/expertise and the confidence to impact their knowledge to others. While considerable technical training was provided to CBEAs under all WtRF CBA projects, further work in this area will be needed to build knowledge and confidence, on both "hard" technical skills and "soft" skills (e.g. legal literacy training in India) to the required levels. Formal

12. Examples of selection criteria include: 1) individual willing to volunteer time to share her/his experience with other community members; 2) farmer recognized as skilled, progressive farmer; 3) farmer willing to adopt and demonstrate improved practices on own field.

training by project staff and outside experts can and should be complemented by informal, on-farm one-on-one support and farmer-to-farmer learning.

- **Intra-village dynamics:** In some WtRF CBA countries, villages can be large and quite dispersed. In Tanzania, it would have been more effective to select champion farmers at a sub-village level to ensure the best coverage and selection of the most respected local farmers. In India, hamlets within villages can be quite distinct from one another in terms of socio-economic characteristics and tribal identity, making it hard to achieve consensus on priorities at the village level.

- **Getting beyond the volunteers (scaling impact):** Achieving impact at scale requires greater attention to approaches to ensure that the impact of training community-level volunteers reaches the larger impact population. This is a common challenge for countries/projects using the Farmer Field School (FFS) methodology, as in the case of the Bangladesh WtRF project, although variations on this challenge were observed in all countries. Experience elsewhere shows that strategically locating FFS fields/demonstration plots where they can be observed by the largest number of villagers, assigning outreach responsibility to FFS members/champion farmers, and graduating FFS/group members and adding new members are all possible strategies to address this issue.

Given the importance of effective outreach and extension to CARE's efforts to achieve impact at scale in its community-based adaptation efforts, more experimentation and reflection on this topic is recommended under future initiatives, including WtRF Phase II projects.

E. LINKAGES TO GOVERNMENT

Along with collective-strengthening, building stronger linkages between communities and government is key to ensuring that CARE's impact population can secure its rights over time. Government partnerships, and linkages to government services and schemes, has thus been a key sustainability strategy in WtRF CBA projects. Following are some examples of promising practice:

- In countries like India, where there are many national and state government schemes intended to serve poor communities, many poor households, particularly in *adivasi* and *dalit* communities, are unable to secure their rights. For this reason, educating *adivasi* communities on the existence of such schemes and facilitating their access by linking them to the appropriate government authorities is an important intervention in the WtRF CBA project in India.

- While the coverage and quality of key government services such as agriculture extension are spotty at best, it is important to link communities (and any community-based extension agents trained under CARE projects) to the existing structures and to include government extension workers in training and field visit activities. Such efforts provide a positive incentives for those government extension workers interested in providing services but often constrained by the lack of resources.

- Linkages to local governance bodies and local government authorities is also an important strategy to ensure that the needs and priorities of poor households dependent on rainfed agriculture are integrated into government plans and budgets. Such efforts were an explicit part of several WtRF CBA projects.

- The establishment of a formal multi-stakeholder mechanism to ensure active participation and a sense of ownership among key government partners is a strategy that was successfully used in Tanzania. There, a formal Learning and Practice Alliance (LPA) was established during the inception phase of the Global Water Initiative, into which the WtRF CBA project was integrated, and proved successful in building trust between CARE staff, key district government officials, and local civil society partners. The LPA, which also included Sokoine University of Agriculture, also developed and implemented a common learning agenda.

- Building credibility and trust, between CARE and government bodies, and between government and local communities, is a long-term process requiring sustained engagement over time. CARE's long-term presence in some WtRF project areas (e.g. northern Thailand) facilitated strong government linkages, while projects operating in areas with a limited history of CARE presence (e.g. Jashpur District in Chhattisgarh State in India) will require more time to build trust and credibility.

Table 5: Strengthening Community Linkages to Government Services

Country Office	Approaches to Government Linkages in WtRF CBA Projects
India	Linkages to government services and programs have been histori-cally very weak in tribal (*adivasi*) communities in India, particularly in Particularly Vulnerable Tribal (PTG) communities such as those found in Bagicha Block. Ensuring equitable access to important na-tional schemes (e.g. MNREGA/100 Day Guaranteed Employment scheme) is thus a major focus of the WtRF CBA project in India. A second major focus is the promotion of the active participation of *adivasi* women in local governance bodies such as the *Gram Sabha*.
Perú	The Perú WtRF CBA project was implemented in partnership with national, regional, and local government partners, including the Na-tional Agrarian Research Institute (INIA), Junín Regional Govern-ment, and Huancayo Municipality. Evidence on lower water require-ments of native species will be shared with Government authorities to influence future agriculture and forestry policies and programs.
Tanzania	The Tanzania CBA project has strengthened linkages between WtRF communities and government agriculture extension workers by involving them in training and outreach efforts. Some extension agents have shown themselves to be very active and effective, while others are seen as ineffective by the communities they serve. At a higher level, the Learning and Practice Alliance established under the GWI/WtRF project in Same District has proven to be a very effective vehicle to engage key government actors, particularly at the district level, in project research activities and has facilitated increased budget allocations for village water for agriculture infrastructure.
Thailand	Raks Thai's long-term presence in WtRF villages has facilitated relationships with key government officials. In Kallayaniwattana District, Raks Thai and the Hydro and Agro-Informatics Institute (HAII) were able to set up a Climate Change and Disaster Information Center in the new district administration building. All local commu-nities have also been able to secure supplemental funding (+34%) from local administration offices for their local projects to improve water management. The GIS mapping initiative also facilitates community efforts to obtain official recognition of their land rights.
Bangladesh	The Bangladesh WtRF CBA project emphasizes building strong linkages between farmers and government bodies (local government/ Union Parishad (UP), Department of Agriculture Extension, and research institutions (BINA, BRRI, BARI). Linkages include on-site technical advice, access to government schemes, seed support, and integration into future UP plans and budgets.

F. EMPOWERING WOMEN AND MARGINALIZED COMMUNITIES

Table 6: Approaches to Empowering Women and Marginalized Communities

Country Office	Approaches to Working with Marginalized Populations and Women's Empowerment
India	The WtRF CBA project in India defines its impact population as *adivasi* women, who are doubly disadvantaged. Among the adivasi communities in the project's target village, some are classified as Particularly Disadvantages Tribal Groups (PTGs), which have historically had least contact with mainstream Indian society. As part of the CBA project design process, a detailed gender analysis was undertaken. Among the project's specific objectives are ones focused on: building the capacity of *adivasi* women to adapt to climate-related water stress; and effective participation of women in water governance/decision-making. Women's economic empowerment is also being pursued through the reactivation of Self-Help Groups (SHGs) and formation of new groups.
Perú	The Perú CBA project targeted poor producers, with a goal of having 25% female participation. The actual participation rate of women smallholders was 34%. Through project implementation, CARE Perú was able to promote greater decision-making roles by women in producer groups and observed progress in terms of significant increases in production by women farmers (e.g. of native potatoes in Uñas village) and greater community recognition of women's contributions. The addition of a component to promote guinea pig-raising also created new economic opportunities for women.
Tanzania	Although "climate vulnerable and marginalized women and girls" were identified as the impact population of the WtRF CBA project in Tanzania, project interventions targeted both men and women smallholders in the seven villages. A significant number of the champion farmers selected and trained, however, were women, and research conducted by an intern from UC (Davis) in four villages showed that 70% of agricultural laborers in Same District are women and that female-headed households showed a high rate of adoption of "no-regrets" soil and water conservation practices. Women were also engaged in the project through the addition of a fuel-efficient cookstove initiative and the formation of VSLA groups.
Thailand	The population of the WtRF villages in northern Thailand consists largely of ethnic minority communities (Karen, Hmong, Lua). Working with such communities adds an extra dimension of complexity, primarily in terms of cultural and linguistic barriers, to the already complex nature of climate change adaptation. The WtRF CBA project in Thailand defines its impact population in terms of both male and female smallholders in the target communities. Raks Thai has also sought to address gender inequality in the project by ensuring female representation in village working groups and also by providing gender and leadership training.
Bangladesh	The Bangladesh WtRF CBA project targets the most vulnerable male and female smallholder farmers and seeks to develop "gendered" adaptation plans through Farmer Field Schools (FFS). One of the 11 Farmer Field Schools formed to date consists exclusively of women farmers.

Women obtaining her land title in India

Thai woman – taking part in the WtRF project – in her field

Several WtRF CBA projects worked in villages with predominantly indigenous or tribal communities, generating learning about working on climate change adaptation with such populations. WtRF CBA projects also had varying degrees of focus on women's participation and empowerment. Several WtRF CBA projects also sought to target the "poorest" smallholder households in the target villages. Following are some reflections on lessons learned:

- Working in indigenous communities requires building mutual trust and cultural understanding by CARE staff. Linguistic barriers can also be a challenge. Recruiting staff and community volunteers from minority communities and ensuring a balance staff in terms of both gender and ethnicity is one strategy to overcome these barriers. In the case of northern Thailand, Raks Thai's long-term presence in these communities allowed the WtRF CBA project to start from a basis of mutual understanding. In India, significant time was required to build the trust of *adivasi* communities, particularly PTG communities with limited experience interacting with outsiders;

- Targeting the poorest households with agriculture-focused initiatives is challenging, given that such interventions require access to land and other natural resources; progressive, "model" farmers are also often better-off than others in their communities. Successfully reaching the poorest households requires focused attention to this issue, including making more systematic use of "wealth-ranking" and similar tools when selecting project participants. The mix of interventions used should also facilitate the participation of the poorest households (e.g. VSLAs and SHGs) and target their specific priorities (e.g. land and water rights and equitable access to government entitlement schemes);

- While all WtRF CBA projects sought to include women in project activities and included some elements of women's empowerment, none can be seen (so far) as gender-transformative. Only the project designs in India and Bangladesh included a comprehensive gender analysis, and only Tanzania and India explicitly identified women (and girls) as their impact population. Most projects included one or more specific activities to address women's empowerment, including gender training, women's training and capacity-building, women's group formation (e.g. Self-Help Groups in India), women's leadership and participation in decision-making, etc. In some cases, WtRF projects incorporated income-generating activities specifically targeted to women's interests (e.g. guinea pig-raising in Perú). Overall, most WtRF CBA projects are most likely to contribute to women's economic empowerment, by increasing their incomes (and control thereof) and assets (savings, small livestock, etc.);

- For future CBA initiatives to be "gender-transformative" in nature, gender needs to be incorporated into all aspects of project design and implementation, starting with a context-specific gender analysis (either previously undertaken or as part of the CBA project design), the inclusion of gender transformation in the project's objectives, and the identification of women (and girls) as the impact population. Most importantly, the inclusion of interventions that address social norms and values (e.g. intra-household decision-making, women's mobility, etc.) that underpin gender inequality must be addressed, which requires engaging men and boys (among other strategies). After design and during implementation, continuous reflection and assessment is needed to assess impacts on a gendered basis and take care to avoid unintended negative consequences. CARE India's Phase II CBA project has the potential to be gender-transformative, but still has a long way to go to achieve that goal.

G. PARTNERSHIPS AND LINKAGES TO RESEARCH INSTITUTIONS

Government, civil society, and academic/research partners play a key role in all WtRF CBA projects, bringing complementary expertise and perspective to CARE's work at both community and policy levels. Following are some broad observations on the range of partners and partnership experiences in the five countries:

- Academic/research partners added significant value to WtRF CBA projects, and such partnerships should be an integral part of the design of future CARE CBA projects to test approaches used and generate evidence for advocacy. The collaboration of CARE Perú with a researcher at the Geophysical Institute of Perú (IGP) is a good model to replicate, where his involvement (including the supervision of student researchers) has produced rigorous evidence on the lower water requirements of native species, which can now be used to influence government policies and programs.

The partnership with Sokoine University of Agriculture and the hosting of a researcher from UC (Davis) under the WtRF CBA project in Tanzania also added significant value to project learning;

- As is the case with many CARE Country Offices, significant responsibility for direct service delivery was taken on by local partner NGOs in some countries, particularly Bangladesh and India. In the latter case, despite some limitations in the local partner's capacity, its involvement proved critical in establishing CARE's presence in Jashpur District and maintaining contact with govern-ment authorities and communities during a period of CARE staff turnover;

- As noted earlier in this report, government bodies at local, regional, and national levels play an important role in the sustainability and scaling of such CARE projects. All WtRF CBA projects include important partnerships with government institutions, especially local (district/municipal) government, technical line ministries, especially those dealing with agriculture, water and natural resources management, and government research institutions and public universities.

- While partnerships can and should be integrated into CBA projects from the design phase, maintaining a considerable degree of flexibility to add, expand, shrink or terminate partnerships during the course of implementation is critical to success. In the Perú case, one planned partnership (AGRORURAL) proved disappointing, while another (INIA) out-performed, leading to entirely new interventions to benefit female participants (e.g. guinea pig-rearing). Raks Thai had a similar positive experience in its collaboration with the Hydro and Agro-Informatics Institute (HAII), as already noted.

Table 7: Use of Partnerships in WtRF CBA Projects

Country Office	Partnership Experience in WtRF CBA Projects
India	Key partners include: Nav Yuva Jagaran Pratisthan (local implementing partner); Water Resources Department; *Panchayati Raj* Department; Women and child welfare Department; Public Health and Engineering Department (PHED); Forest Department; and Fisheries Department. While engagement with government institutions is still in early stages, the involvement of the local implementing NGO has brought local knowledge, relationships, and continuity in implementation during periods of CARE staff turnover.
Perú	Key partners include: National Agrarian Research Institute (INIA); AGRORURAL (project for productive rural development; regional and municipal governments; and the Geophysical Institute of Perú (IGP). The partnerships with INIA and IGP proved to be particularly productive, resulting in technical support for planned and new activities, as well as scientific research on the water requirements of native crops and trees versus "conventional" species.
Tanzania	Key partners include: Same District authorities; Same District Water Users Association; and Sokoine University of Agriculture (SUA). As noted earlier, these actors and others were organized into a Learning and Practice Alliance to develop the project's learning agenda and guide research activities. The WtRF CBA project in Tanzania also benefited from a graduate student intern from the University of California, who worked with project staff and SUA to undertake research in four WtRF villages.
Thailand	Key partners include: Cooperation Center between Rachamangala University of Technology, Northern region and King Mongkut's University of Technology, Thonburi for Royal Project and Academic Services (CC RUTN-KMUT); GISTDA (specialized on GIS and other geographical information technology for natural resources management); Utokkapat Foundation under the Royal Patronage of H.M. The King; and Hydro and Agro-Informatics Institute (HAII). As already noted, the partnership with HAII produced results that greatly exceeded initial expectations.
Bangladesh	Key partners include: ESDO (implementing partner); Department of Agriculture Extension; Bangladesh Agriculture Research Institute; Bangladesh Rice Research Institute; and Bangladesh Rural Academy.

H. LEARNING RELATED TO THE OVERALL DESIGN OF THE CBA COMPONENT OF WTRF

The single biggest learning related to the overall design and implementation of the Where the Rain Falls (WtRF) project, including its CBA component, relates to the time factor. The original design of the project— including research in eight countries on three continents, publication and dissemination of research findings, national and international advocacy, and the design and implementation of community-based adaptation in four countries (subsequently increased to five)— was extremely ambitious. Implementing such an ambitious undertaking, with a small core project team, in the original three-year time frame for the project was simply unrealistic. Fortunately, both project donors, the AXA Group and the John D. and Catherine T. MacArthur Foundation, proved themselves to be very flexible in approving no-cost extensions and budget revisions, allowing the project in the end to maximize the use of donor resources to produce quality outputs and achieve impact at field level. Still, the short time frame drove project design and management decisions that were not ideal, particularly given the inherently complex and long-term nature of community-based climate change adaptation.

Specifically as regards the CBA component of the project, the initial design of WtRF envisaged launching two-year CBA projects in four countries at the beginning of Year Two of the project. Even if the project had not gotten off to a slow start in Year One (2011), this would have been unrealistic, given the necessity of the core project team focusing on finalizing the research outputs and undertaking dissemination and advocacy activities in Year Two (2012). As a result, CBA designs were only completed in the first half of 2013, less than one year before the original end-date of the project. Given the maximum two-year timeframe (even with a no-cost extension) for the project's CBA activities, limited time was available for thorough contextual analysis and the range of interventions was limited to those considered to have the potential for short-term results. Despite these constraints, the WtRF CBA countries were still able to accomplish quite a bit and, in some cases, lay the foundation for longer-term initiatives.

Following are some lessons that can be taken from this experience:

- CBA projects should, as a rule of thumb, have a minimum timeframe of three to four years (six month inception phase plus three years implementation). Still longer timeframes (four to six years) are likely to produce greater and more sustainable impact, given the inherently complex nature of community-based climate change adaptation and the impact pathways involved. In the cases of India and Thailand, CARE France has been able to achieve an adequate timeframe by securing Phase II funding from the AXA Group;

- Although both CARE and donors understand the sub-optimal nature of short-term funding cycles for climate change adaptation and other sustainable development interventions, continued donor education and advocacy efforts should be undertaken to encourage best donor practice in this area;

- Whatever the duration of approved funding, certain steps can be taken by CARE to maximize the potential for sustainable impact by ensuring that CBA projects, particularly those with modest levels of funding, are not implemented as stand-alone initiatives. This can be accomplished by explicitly embedding the CBA project in a relevant long-term program, for which extensive contextual analysis has already been done and impact pathways identified. Another way in which this objective can be accomplished is to link new CBA projects to other longer-term projects in the same location and serving the same impact population, thereby leveraging the human and donor financial resources of both initiatives. Finally, as already observed, short-term CBA projects are much more feasible if located in contexts where the CARE office is not "starting from scratch" but instead building on an established presence and relationships in the target geography.

IV. CONCLUSION

The diverse portfolio of Where the Rain Falls (WtRF) CBA projects, and indeed WtRF as a multi-country climate change action research initiative, has already generated significant learning. Moreover, several WtRF countries– namely India, Thailand, and Bangladesh– will have the opportunity to build on learning to date and generate new learning over the course of 2015 and 2016. This is thanks to Phase II funding from the AXA Group in India and Thailand and additional funding from the Prince Albert Foundation (Bangladesh) and Chanel (Thailand). Key areas of learning highlighted in this report include: sustainable agricultural practices; water management and governance; group formation and collective strengthening; approaches to the use of community-based extension volunteers; linkages to government; working with marginalized ethnic communities and empowering women; and partnerships. In addition, some broader lessons learned can be taken from the overall design and implementation of WtRF as a multi-country initiative. CARE France and the WtRF team are happy to share their successes and struggles with the wider CARE community of practice and colleagues in other organizations as a contribution to our collective knowledge on good CBA practice.

Kevin Henry
Project Coordinator, Where the Rain Falls

www.carefrance.org

CARE France
71 rue Archereau
75109 Paris

Tél 01 53 19 89 89
Fax 01 53 19 89 90

info-care@carefrance.org