

R4 Rural Resilience Initiative

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Acronyms

AYII	area yield index insurance
CA	Conservation agriculture
CASU	Conservation Agriculture Scale Up Project
CNAAS	Compagnie Nationale d'Assurance Agricole du Sénégal
CSS	coping strategy index
DAPP	Development Aid from People to People
DRR	disaster risk reduction
EVI	Enhanced Vegetation Index
FCS	Food Consumption Score
FFA	Food Assistance for Assets
FGD	focus group discussion
FHH	female-headed household
GCF	Green Climate Fund
GFCS	Global Framework for Climate Services
GVH	Group Village Head
HARITA	Horn of Africa Risk Transfer for Adaptation
IFAD	International Fund for Agricultural Development
IGA	income generating activity
IRI	International Research Institute for Climate and Society
MEL	monitoring, evaluation and learning
MFI	microfinance institution
MoALF	Ministry of Agriculture, Livestock and Fisheries
NDMA	National Drought Management Authority
NGO	non-governmental organization
PADAER	Programme d'Accélération de la Cadence de l'Agriculture Sénégalaise Développement Agricole et à l'Entreprenariat Rural
PSNP	Productive Safety Net Program
OA	Oxfam America
ORDA	Organization for Rehabilitation and Development in Amhara
RCI	resilience capacity index
REST	Relief Society of Tigray
RUSACCO	Rural Savings and Credit Cooperative
SDC	Swiss Agency for Development and Cooperation
SfC	Saving for Change
TOC	theory of change
WII	weather index insurance
WFP	World Food Programme
VESA	Village Economic and Social Associations
VFZ	Vision Fund Zambia
VSLG	Village Savings and Loan Group



A group of R4 farmers in Kitui County, Kenya.
WFP/Martin Karimi

Crop insurance eases burden on farmers in Kenya

Martin Karimi, November 2017

This section reports an article published in November 2017 on R4 in Kenya, where the program was rolled out this year. In the country, as a result of the drought, a total of US\$40,247 in payouts was triggered and distributed to all 963 farmers who registered for the long rains.

It is planting season in Kitui County, one of the marginal agricultural regions in the southern parts of Kenya.

The fields are ready. The stalks from the previous crop all cleared out. Farmers are eagerly waiting for the rains, including 45-year old Munyange Kilonzi.

"I hope that this season will be good," she says. "Last season was poor. The harvest was dismal because the rains failed."

Unfortunately this is not the only season that has performed poorly.

"The last time we had a bumper harvest was a couple of years back," Munyange adds.

Total crop failure is devastating, and it is becoming all too common.

Perennial losses

Failed harvests are taking a huge toll on farmers in Kenya. The weather patterns have changed and rains have become more and more unreliable.

“I planted green grams, sorghum and cowpeas,” explains Munyange. “The green grams crop failed completely and I was only able to harvest about 10 kg of cowpeas and 5 kg of sorghum.” In a good season, her three-acre plot should give her about three 90-kg bags of green grams, three bags of cowpeas and a bag of sorghum.

Farmers like Munyange rely on the harvest to feed their families, pay for medicine and school fees. With more frequent and increasing weather-related shocks such as droughts, farmers are forced to take desperate measures, such as selling their assets or taking their children out of school.

Facing climate risks with insurance protection

To address this problem and support farmers better face climate shocks, the UN World Food Programme has introduced crop insurance through the R4 Rural Resilience Initiative (R4) in Kitui in 2017.

R4 is a strategic partnership with Oxfam America that enables the poorest farmers to access crop insurance by participating in risk reduction activities including building community assets such as water ponds and soil-conserving terraces.

When a shock hits, compensation for weather-related losses prevents farmers from having to take desperate measures and stimulates faster recovery. By protecting farmers’ investments in case of a bad season, R4 enables them to afford quality seeds, fertilizers and new technologies in the next season.

Munyange is one of the 963 farmers who enrolled in the first R4 pilot in Kenya. Because of the dry season and lack of rainfall, insurance payouts were triggered and a total of US\$40,247 distributed to the group. The payouts will enable affected families to purchase agricultural inputs for the next season or alternatively, cover the food gap for two months.

Increasing adoption of dryland farming methods

“I’m happy with the cash payout,” says Munyange. “This will help me buy seeds and fertilizer.”

“We experienced close to a total crop failure,” says Joyce Raphael Mwasa, another farmer in Kwa Vonza. “I will use the money to buy some maize for food and buy seeds with the remainder.”

Farmers involved in assets creation activities, receive a monthly cash transfer of US\$20 in return for days worked on various assets such as the moisture retaining pits, water ponds, and soil-conserving terraces. The farmers were asked to increase the time spent on building community assets as a contribution to the insurance premium.

“We worked extra days to be eligible for the insurance cover during the short rains,” Munyange explains. “It is hard work but at the end of the day, we are developing our own farms — so we stand to gain even more.”

R4 extended the insurance cover to 5,200 farmers in Kitui during the 2017 short rains starting in October, working in collaboration with the National Drought Management Authority (NDMA), Ministry of Agriculture, Livestock and Fisheries (MoALF), the County Government of Kitui, the Catholic Diocese of Kitui, and private sector partners. The Ministry has committed to include the covered families in the Kenya Agriculture Insurance Programme so that they can benefit from a 50 percent insurance premium subsidy.

In 2018, R4 plans to scale up to 10,000 farmers for the short rains in Kitui, and in five years the programme will reach two other marginal counties — Kilifi and Makeni.

Farmers participating in this initiative are required to grow at least one of these drought-resistant crops: green grams, cowpeas, sorghum or millet.



R4 farmers during rice harvest in Senegal.
WFP/Carla De Gregorio

Executive Summary

In 2017, the R4 Rural Resilience Initiative (R4) expanded from four to six countries.



































This year marked the beginning of Phase 2 of R4 in Southern Africa, thanks to funding from the Swiss Agency for Development and Cooperation (SDC). This second phase saw the scaling-up of the Initiative in Malawi and Zambia as well as the start of the inception phase in Zimbabwe. For the first time, some farmers transitioned from accessing premiums fully through labor to partial cash payments in both Malawi and Zambia. This is an important progress towards achieving program sustainability. Furthermore, R4 was piloted during two rain seasons in Kenya, with the number of participants increasing from 963 to nearly 5,000.

Overall, 57,625 farmers (50 percent women) participated directly in R4 while around 300,000 people benefited from it in five countries, namely, Ethiopia, Senegal, Malawi, Kenya and Zambia with its comprehensive risk management approach. In 2018, the initiative will start its operational activities in Zimbabwe with an initial target of 500 participants.

At the end of the year, an impact evaluation of R4 in Ethiopia was published, showing how the initiative was successful in limiting the negative impacts of climate shocks on the food security of participating farmers' households.

Overall, all R4 countries were affected by poor rain performance. In Ethiopia, Senegal, Malawi and Zambia the indexes triggered as documented in the end-of-season-assessments. Payout amounts and number of recipient farmers are being finalized. In Kenya 936 people received payouts amounting to US\$40,247 for the long rains season (March to May).

FIGURE 1. R4 achievements

Payouts			 US\$17,000	 US\$320,000	 US\$24,000	 US\$38,000	 US\$450,000	 US\$74,000	 US\$123,500*
Value of premiums	 US\$2,500	 US\$27,000	 US\$215,000	 US\$275,000	 US\$283,000	 US\$306,000	 US\$370,000	 US\$781,000	 US\$1,1m
Total sum insured	 US\$10,200	 US\$73,000	 US\$940,000	 US\$1,3m	 US\$1,2m	 US\$1,5m	 US\$2,2m	 US\$5,1m	 US\$6,6m
Farmers insured	 200	 1,300	 13,000	 18,000	 20,000	 26,000	 32,000	 42,000	 57,000
Countries	Ethiopia	Ethiopia	Ethiopia	Ethiopia Senegal	Ethiopia Senegal	Ethiopia Senegal	Ethiopia Malawi Senegal Zambia	Ethiopia Malawi Senegal Zambia	Ethiopia Senegal Kenya Malawi Zambia

Our vision: 500,000 insured farmers in 2020.

* Preliminary figure

Foreword

Around seventy percent of the world's poorest people live in rural areas where they depend on climate-sensitive natural resources to survive. They face increasing exposure to disaster risk exacerbated by land degradation, climate change, price volatility, and other drivers of risk. These risks compromise rural communities' ability to improve their well-being in the short-term and can also have long-term consequences like poverty, malnutrition, low education levels and low life expectancy.

It is estimated that the risk of hunger could increase by up to 20 percent by 2050 unless increased efforts are made to enable the most vulnerable communities to better prepare for, respond to and recover from climate shocks and stresses. Extreme weather events such as floods, droughts, and storms do not only have a ravaging human cost but also a financial one: over US\$141 billion per year have been lost in damages from disasters in the last decade.¹

Such a dynamic context is changing the way humanitarian organisations, together with governments, donors and implementing partners, need to operate in the future. Countries must move away from a repetitive pattern of crisis response and put more emphasis on planning and financing instruments which enable a more forward-looking and prevention-focused approach to risk management. Without programmatic tools and strategies to build sustainable and resilient food systems, the international community will fail at achieving Sustainable Development Goal 2 -to eradicate hunger - by 2030.

The R4 Rural Resilience Initiative is an excellent example of an integrated programme which empowers communities to manage weather shocks and adapt to the effects of climate change. It demonstrates how social safety nets can be conceived to protect vulnerable people, but also reduce and transfer the risks of disasters on food systems, communities and productive ecosystems.

In 2017, R4 provided over 57,000 families in Ethiopia, Senegal, Malawi, Zambia and Kenya with access to index insurance and a range of complementary risk management options. Last year also saw the start of the inception phase for R4 in Zimbabwe with implementation expected to start in 2018. Local partners across all countries delivered a solid performance in educating farmers on index insurance products, and engaging local communities in building and maintaining community assets for reducing risk. During 2017, 61 percent of smallholders engaged in R4 contributed a portion of their own cash income to maintain their insurance coverage. This indicates that the integrated approach promoted by R4 is progressively building confidence among participants about the effectiveness of insurance in promoting investment, improving incomes and ultimately building resilience against climate risks.

Traditional and new donors are committed to supporting R4 and scale-up activities in existing and new countries. In July 2017, R4 in Southern Africa entered its second phase thanks to renewed pledge from the Swiss Agency for Development and Cooperation. This multi-year funding will support expansion of the R4 model in Malawi and Zambia as well as implementation in Zimbabwe. The Green Climate Fund has committed US\$10 million to the up scaling of R4 in Senegal, where WFP and its partners will help 45,000 vulnerable farmers and their families to better address climate risks. Negotiations are underway with KFW to scale-up R4 in Ethiopia and thereby help large numbers of households to progressively transition out of the national Productive Safety Net Programme (PSNP).

The strong demand from farmers, in tandem with the continued support by donor partners, is extremely encouraging. Building on the evidence and lessons generated to date, 2018 will continue to see an important expansion of R4 within its current programme countries, and plans on expansion to new ones.

Gernot Laganda

*Chief, Climate and Disaster Risk Reduction Programmes Unit
World Food Programme*

1. Centre For Research On The Epidemiology Of Disasters "The human cost of natural disasters" (2015).



Woman participant and her calf bought with a small loan received through R4, Ethiopia.
WFP/Rupak Manvatkar

The R4 Rural Resilience Initiative

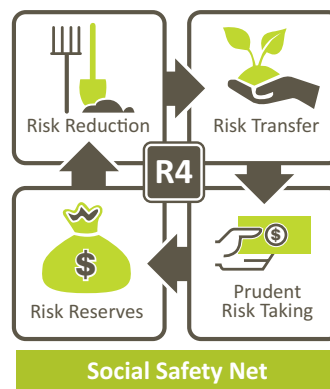
Background

Vulnerability to climate-related shocks is a constant threat to food security and wellbeing. As climate change increases the frequency and intensity of shocks, the challenges faced by food insecure farmers will also increase. The World Food Programme (WFP) and Oxfam America (OA) have developed and combined innovative tools and strategies to reduce and mitigate risks farmers face and to help them achieve food security while enhancing resilience at the community level.

The R4 model

WFP and OA launched the R4 Rural Resilience Initiative (R4) in 2011, to enable vulnerable rural households to increase their food and income security in the face of increasing climate risks. R4 builds on the initial success of the Horn of Africa Risk Transfer for Adaptation (HARITA) initiative, pioneered in Ethiopia by OA, the Relief Society of Tigray (REST) and Swiss Re. R4 currently reaches 57,625 vulnerable farmers (50 percent women) and their families in Ethiopia, Senegal, Malawi, Zambia

and Kenya with an integrated risk management strategy that combines four components: **improved resource management** through asset creation (risk reduction), **insurance** (risk transfer), **livelihoods diversification and microcredit** (prudent risk taking) and **savings** (risk reserves).





R1. Risk Transfer

R4 enables the poorest farmers to purchase agricultural insurance. R4 has been one of the most successful efforts to scale up weather index insurance (WII), a financial product based on a rainfall index highly correlated to local

yields. Payouts are triggered by pre-specified patterns of the index rather than actual yields, thus eliminating the need for in-field assessment. Rapid compensation for weather-related losses means farmers can avoid selling productive assets and recover faster from droughts. Predictable income can reduce negative coping strategies and encourage rural households to invest in activities and technologies with higher rates of return. Insurance can also serve as collateral to obtain credit at better rates. For the first time, R4 is piloting an Area Yield Index Insurance (AYII)² product as part of its risk transfer component in Kenya. AYII can offer coverage against a host of risks including pests and uses crop sampling at the end of season to determine value loss. Due to the inherent design of AYII, expected payout timeframe is longer compared to weather index-based insurance, but shorter than traditional agriculture insurance.



R2. Risk Reduction

Those households that are cash constrained have the option to pay insurance premiums by engaging in asset creation activities. Assets built, or rehabilitated through these activities (such as water and soil conservation infrastructure),

promote resilience by steadily decreasing vulnerability to climate risks. They also promote higher productivity by building the natural asset base available to farmers. The risk reduction component is usually built into government safety net and other programs, as well as WFP Food Assistance for Assets (FFA) initiatives.³

Farmers contribute their labor to risk reduction activities identified through participatory assessment and planning. In Ethiopia, Malawi and Senegal, asset creation activities have contributed to natural resource rehabilitation and agricultural development. In Zambia, farmers apply conservation agriculture (CA) techniques to improve their agricultural productivity and sustainability.



R3. Prudent Risk Taking

Smallholder farmers are often reluctant to invest in productive inputs or hired labor as their farms are vulnerable to external shocks. They may, thus, prefer low input – low output production systems that guarantee

a predictable, although low, income. Microfinance institutions may limit investments because of the perceived high risk of default in bad seasons. With increased food security and a stronger asset base, R4 farmers can increase their savings and stocks, using them along with insurance as collateral to obtain credit for investing in productive assets such as seeds, fertilizers and new technologies that increase productivity. Moreover, insured farmers are more confident to take out loans and invest in productive inputs, including hired labor, knowing that the financial risk of drought is minimized.



R4. Risk Reserves

Through individual or group savings, farmers can build a financial base that serves multiple purposes. For instance, they provide a buffer for short-term needs, increasing a household's ability to cope with

shocks. Group savings can be loaned to individual members with particular needs, providing a self-insurance mechanism for the community. Savings can also be accumulated in-kind, for example through cereal banks which allow farmers to stock surplus yields or livestock.

2. A type of index insurance in which payout is based on the realized average yield of area, e.g. sub-county.

3. FFA programs are the cornerstone of WFP's resilience building efforts. They play two roles. As a safety net, they provide food and/or cash transfers to meet the immediate food needs of the most vulnerable households. As a tool for disaster risk reduction, natural resource rehabilitation and agricultural development, they build assets that reduce the impacts of climate shocks, restore ecosystems and enhance agricultural production.

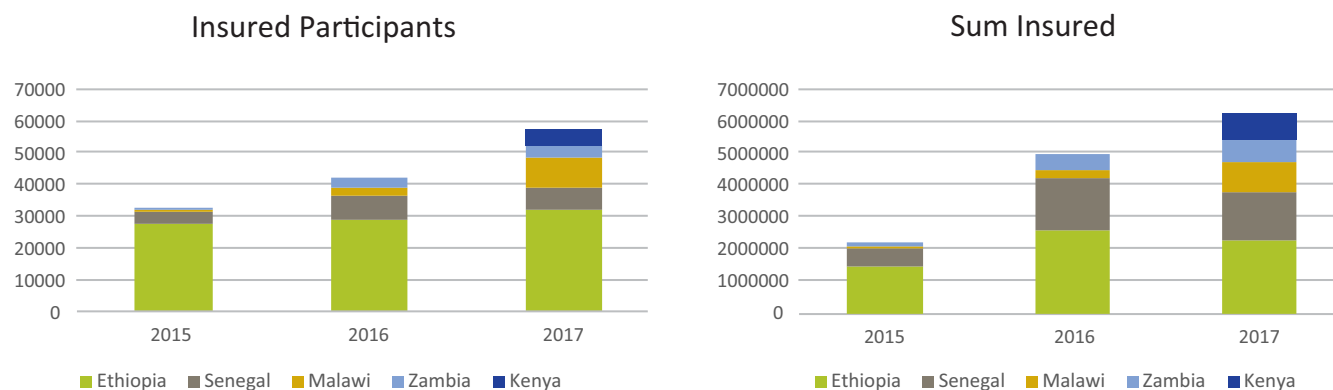


Farmers during a training on rainfall reading, Zambia.
WFP/Crissy Mupuchi

Project Status

R4 reached 57,625 farmers in Ethiopia, Senegal, Malawi, Zambia and Kenya in 2017. This year, the total sum insured amounted to US\$6,6 million.

FIGURE 2. R4 achievements by indicator⁴



4. For the exact figures, please see Annex III.

Ethiopia

Key Achievements

- 31,942 farmers (38 percent women) insured in Tigray and Amhara.
- 29,023 farmers paid 16 percent of premium in cash.
- 2,919 participants paid for insurance fully in cash.

In 2017, a total of 31,942 farmers (38 percent women) of which 29,442 in Tigray and 2,500 in Amhara regions participated in R4, a slight increase in enrolment compared to 2016.

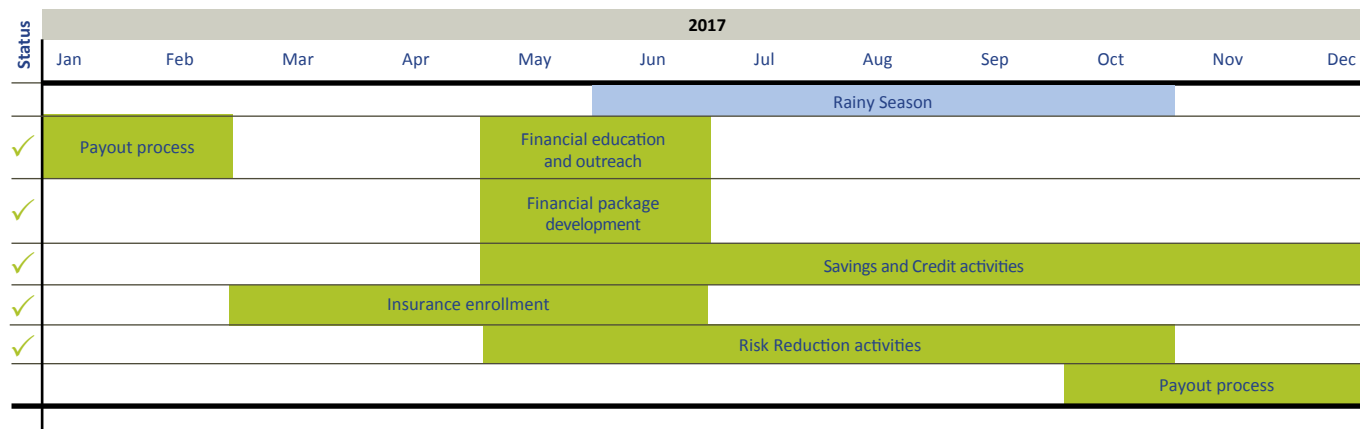
Through the program’s risk reduction component, 29,340 farmers in Tigray and Amhara regions participated in long-term risk reduction activities, such as watershed management and homestead development identified through vulnerability assessments. Of the total R4 participants, 29,340 farmers paid 16 percent of their insurance premium by cash, while the remaining 2,602 participants paid for insurance fully in cash, a slight increase compared to 2017.

Across both regions, the total sum insured in 2017 amounts to US\$2,291,930 with a total premium amount of US\$369,723.

All R4 farmers have engaged in different income generating activities (IGAs) and are practicing regular savings in both Village Economic and Social Associations (VESAs) and Rural Saving and Credit Cooperatives (RUSACCOs). This year in Tigray, 3,929 farmers saved a total of US\$28,669 in 180 VESAs and US\$70,917 in RUSACCO, while in Amhara 2,574 participants saved US\$11,139 in 123 savings groups. A total of 1,084 farmers (418 women-headed households) took out loans worth US\$174,147 in Tigray with an average loan size of approximately US\$ 160, whereas in Amhara loans taken out by 1,520 farmers amounted to US\$9,573.

An impact evaluation study of R4 in Tigray was published this year. The evaluation showed that R4 is helping smallholder households, especially female-headed ones, to reduce the impact of drought on food security while maintaining their productive assets.

FIGURE 3. R4 Ethiopia timeline for the 2017 agricultural season



Senegal

Key Achievements

- 6,739 farmers (52 percent women) insured.
- 706 farmers paid their premium fully in cash.
- 17,124 participants saved US\$135,788.

In Senegal, R4 reached a total of 6,739 smallholder farmers (52 percent women) with its integrated approach. Due to a funding shortfall, implementation in 2017 only focused on the villages where all R4 components were already in place in Tambacounda and Kolda regions. Despite this, the initiative achieved good results for each component. The number of insured participants exceeded the initial target of 6,100 participants for 2017. Furthermore, the number of farmers contributing to their premium in cash continued to increase. This year, the Green Climate Fund (GCF) committed funding for the expansion of R4 in the country. In 2018, thanks to funding from GCF, the R4 Initiative plans to reach 108,000 vulnerable households over five years.

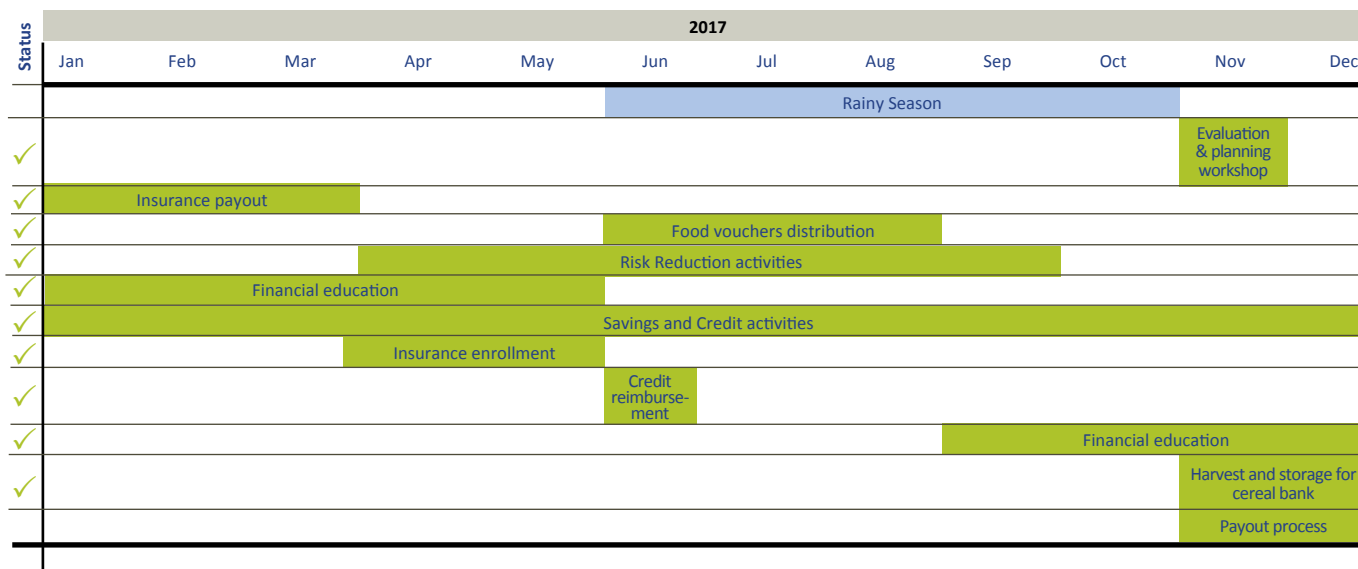
Food Assistance for Assets (FFA) activities under the risk reduction component were undertaken and completed by 6,107 participants, for both the dry and rainy seasons. Of the total R4 participants, 6,033 worked on asset creation in exchange for insurance coverage, while 706 farmers paid their premium fully in cash. WFP's continues to link R4 with IFAD-funded program PADAER,⁵ with 632 farmers accessing R4's insurance product.

During the peak of lean season and in October, 4,297 participants in Tambacounda received food vouchers transfers from WFP for a total amount of US\$275,000 in exchange for their work on assets. In Kolda, 1,810 participants received food vouchers worth US\$106,000.

The savings and credit components are fully operational with 738 active savings groups across the two regions. In 2017, 17,124 participants saved US\$135,788. A total of 8,860 members took out and repaid loans worth US\$218,712.

The annual outcome monitoring assessment was undertaken at the end of the fourth quarter. The preliminary results showed a net improvement in the food security situation of R4 households, compared to the previous assessment of November 2016. R4 interventions including food assistance, training in agricultural techniques, use of fertilizers and insurance payout translated into positive outcomes for the Food Consumption Score (FCS)⁶ and the Diet Diversity Score (DDS).⁷ The percentage of households with an acceptable FCS continued to increase from 32.1 percent in 2014, 45.4 percent in 2016 to 57.7 percent in 2017. The DDS also increased by nearly one point since last year which demonstrates an improvement in participants' diets. Moreover, the coping strategy index (CSI)⁸ - measuring how families dealt with food gaps- indicated that more than 70 percent of households reduced or stabilized their CSI. The improvement in food security was more significant in female-headed households with a reduction of 77 percent of poor FCS.

FIGURE 4. R4 Senegal timeline for the 2017 agricultural season



5. Projet d'Appui au Développement Agricole et à l'Entreprenariat Rural (PADAER) is an IFAD-funded agricultural development initiative providing farmers with agricultural inputs as well as insurance through WFP.

6. FCS is a proxy indicator of household food security based on the weighted frequency (number of days per week) of intake of eight different food groups. FCS captures both quality (different food groups/dietary diversity) and quantity (food frequency) elements of food security. Households with an FCS of at least 42.5 are classified as "acceptable" while those with an FCS of between 28.5 and 42 are classified as "limited.", and below 28 FCS is considered "poor".

7. Individual dietary diversity scores aim to reflect nutrient adequacy. Studies in different age groups have shown that an increase in individual dietary diversity score is related to increased nutrient adequacy of the diet.

8. CSI measures the frequency and intensity of households' behaviour to cope with food shortages. Households having a higher CSI use coping strategies more frequently and intensively due to greater vulnerability. CSI is typically inversely proportional to FCS.

Malawi

Key Achievements

- Scaled-up to 10,327 farmers (67 percent women) insured.
- 1,666 participants contributed 14 percent of premium in cash worth US\$4,417.
- Over 6,200 R4 participants received climate services through extension workers, radio and SMSs.

R4 in Malawi expanded considerably from 2,342 to 10,327 participants (67 percent women) for the 2017/18 season. In phase II (2017-2021) started in July -supported by the Swiss Agency for Development and Cooperation (SDC)- R4 in Malawi will focus on scaling up the initiative and integrating the program into national systems. This includes transitioning farmers away from assistance by introducing relevant interventions throughout the stages of graduation pathway, while also expanding geographically and integrate with other resilience and programme interventions as well as national initiatives. The country team will intensify efforts on capacity strengthening, policy advocacy, and technical support to both private and public national actors.

In 2017, risk reduction activities focused on water conservation, as this was identified as a key constraint for agriculture production.

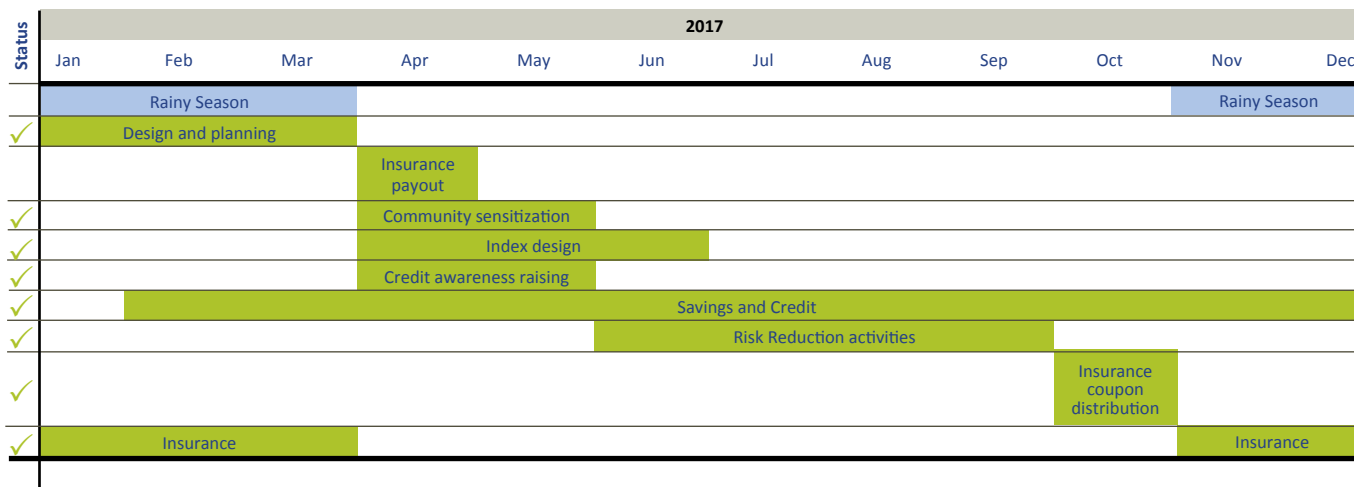
Following two years of R4 operations, for the first time, 1,666 farmers contributed 14 percent of their premium in cash (equivalent of 2 days of work out of a total 14 days) in Balaka district. The contribution levels will continue to increase over

the next four seasons, to enable them to eventually transition to paying their premium fully in cash in the next 6 to 7 years. Similar approaches will be taken in the other districts, as household food and income security stabilizes and improves, showing more resilient livelihoods.

The risk reserves and prudent risk taking components experienced a steady growth in 2017. In Zomba, Balaka and Blantyre, 393 Village Savings and Loans (VSL) groups were mobilized with 7,735 farmers and shared out a total of US\$87,058 at the end of the cycle. In addition, in Balaka, 187 participants accessed loans worth US\$11,540.

R4 continued to pursue linkages with WFP's climate services programs. For example, through the collaboration with Ministry of Agriculture, irrigation and water development (MoAIWD), Department of Climate Change and Met Services (DCCMS), Lilongwe University of Agriculture and Natural Resources (LUANAR) and other stakeholders, WFP Malawi continued to facilitate co-production of messages (agro-advisories) based on the 2017/2018 seasonal forecast. The messages are disseminated through radio and SMS households for their consideration in farming decisions, and reach a total of 10 districts including three R4 districts. The messaging included information on the Fall Army Worm to support identification, control, and management of the pest, which has devastating impacts on crops.

FIGURE 5. R4 Malawi timeline for the 2017 agricultural season



Zambia

Key Achievements

- 3,835 farmers (50 percent women) insured.
- 2,094 participants paid for insurance partially in cash.
- Amount of savings in savings groups increased six times than in 2016.

In Zambia, R4 is implemented in Pemba District of Southern Province. Like in Malawi, this year the program scaled-up in Zambia in the second part of 2017 and reached 3,835 farmers (50 percent women) with insurance, aiming to reach around 15,000 participants by 2021.

The initiative builds on FAO's Conservation Agriculture Scaling Up (CASU) program, whereby farmers are insured by applying Conservation Agriculture (CA) techniques such as minimal soil disturbance, permanent soil cover and crop rotations. By the end of the year, 3,867 farmers applied CA as part of the risk reduction component of R4.

Compared to 2016, the number of farmers who grew cowpeas, beans, and groundnuts increased by 16 percent. Furthermore, eight additional rain gauges were installed for a total of 28 rain gauges in R4 areas.

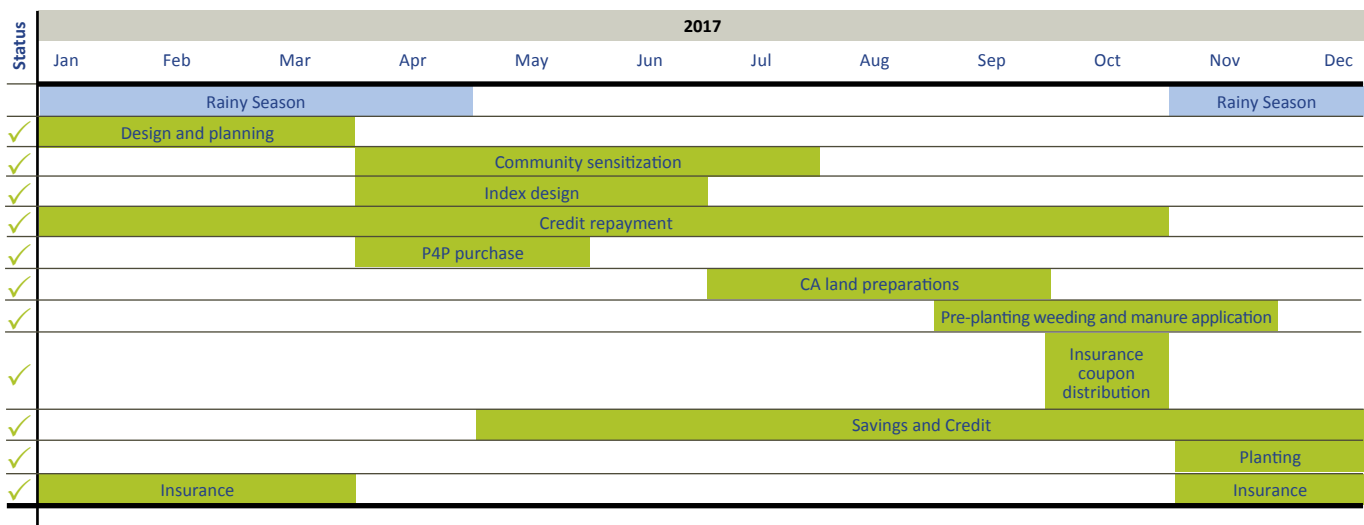
Phase II also involved the introduction of premium cash contributions from farmers. Up to now, 2,094 participants have contributed ZMW 10 (3 percent) of their premium in cash for a total of US\$2,094.

Under the risk reserves component, 1,217 farmers participated in 64 savings groups, which have cumulative savings of US\$25,995. Of the total participants, 554 took out and repaid loans worth US\$20,515. Furthermore, R4 continues to encourage gender equity in leadership positions of project management committees, where nearly 45 percent of farmers groups' executives are women.

In 2017, linkages between farmers and markets were explored through WFP's innovative Maano Virtual Farmers Market (VFM)⁹ project. So far, 15 R4 farmers have enrolled and were trained as ambassadors to involve other farmers with their farm produce looking for possible buyers.

A "self-assessment and lessons learned workshop" was organized jointly with SDC in February 2017 in Lusaka. The three-day workshop provided an opportunity to reflect on R4 operations in Zambia and Malawi, drawing lessons on successes and challenges to inform programmatic decisions for both countries for the second phase of the Initiative, and provide insights for Zimbabwe. The workshop convened Oxfam America, WFP global and country teams from Malawi, Zambia and Zimbabwe along with respective WFP's Regional Bureau representatives, SDC, Government representatives, and major implementing partners from Malawi and Zambia. Key challenges noted from R4 implementation in Zambia and Malawi include basis risk, local capacity on index design, effective data management tools, financial education, and lack of distribution channels. To overcome these challenges, R4 Zambia will invest more in financial education programmes on insurance, as well as engaging with Zambia's Meteorology department to develop mechanisms to enhance product design and data management.

FIGURE 6. R4 Zambia timeline for the 2017 agricultural season



9. VFM builds on Purchase for Progress (P4P), WFP's flagship program connecting smallholder farmers to markets. Using WFP's reputation as a reliable buyer of quality crops, VFM creates a virtual, app based network that allows farmers to interact with traders and other buyers.

Kenya

Key Achievements

- Scale-up from 963 to 4,782 participants from one season to the other in the first year.
- All 963 participants insured for the 2017 Long Rains received payouts of US\$40,247.
- R4 participants are now part of the Kenya Agricultural Insurance Program and benefit from the subsidies offered by the program.

In January 2017, R4 was rolled out on a small scale in Kitui Rural Ward. In March, 963 participants (90 percent women) signed up for insurance coverage of drought tolerant crops in Kitui Rural for the long rains which are from March to November. This was done in close partnership with National Drought Management Authority (NDMA), Ministry of Agriculture, Livestock and Fisheries (MoALF), County Government of Kitui, Catholic Diocese of Kitui and private sector partners. Poor long rain performance and the residual impact of 2016 drought reduced the yield of drought tolerant crops by 54 percent, thereby triggering insurance payouts amounting around US\$40,247. A Beneficiary Contact Monitoring survey was conducted with 120 households one month after insurance payouts using WFP's Mobile Vulnerability Assessment and Mapping (mVAM)¹⁰ system to ascertain the quality of payout process, utility and participants' satisfaction.

In October, the program expanded to 4,782 participants (85 percent women) in Kitui East, Rural and South sub-counties for the short rains, which take place from October to April. As the MoALF formalized engagement with WFP to include R4 participants in the Kenya Agricultural Insurance Program, these participants have also benefited from 50 percent subsidies towards insurance premiums. Efforts in integrated risk management will continue in 2018 by scaling-up R4 to 10,000 households in marginal counties and exploring the potential for risk layering with the Government of Kenya, other UN agencies, civil society and the private sector.

Unlike other R4 countries, R4 Kenya has piloted an Area Yield Index Insurance (AYII)¹¹ product as part of its risk transfer component. AYII can offer coverage against a host of risks including pests and uses crop sampling at the end of season to determine value loss. Due to the inherent design of AYII, expected payout timeframe is longer compared to weather index-based insurance.

Additionally, a crowd-sourcing platform has been used as a seasonal monitoring tool to report extensive dry spells, plant growth stages and other risks such as pests. Field officers from cooperating partners and WFP share photos of farms with information on type of risk reducing asset through a dedicated Whatsapp group.

FIGURE 7. R4 Kenya timeline for the 2017 agricultural season

Status	2017											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
✓			Long Rains (LR)							Short Rains (SR)		
✓			Design and planning (SR)					Design and planning (LR)				
✓			Insurance payout (SR)						Insurance payout (LR)			
✓					Community sensitization (SR)					Community sensitization (LR)		
✓					Index design (SR)					Index design (LR)		
✓	Risk Reduction Activities (LR)						Risk Reduction Activities (SR)					Risk Reduction Activities (LR)
✓	Insurance Coverage (SR)		Insurance Coverage (LR)							Insurance Coverage (SR)		

10. http://vam.wfp.org/sites/mvam_monitoring/

11. A type of index insurance in which payout is based on the realized average yield of area, e.g. sub-county.

Zimbabwe

The R4 initiative in Zimbabwe, currently supported by SDC and France, builds upon and combines the knowledge and capacity accumulated by WFP and partners on productive asset creation (FFA), weather index insurance, promotion of savings and access to credit. After a year-long assessment and design phase, the integrated approach will be rolled out in Masvingo District, targeting the first 500 farmers in April 2018. By 2021, the project is expected to reach 10,000 households covering both the Masvingo and Rushinga districts, respectively in Masvingo and Mashonaland Central provinces.

In addition, WFP aims to increase market outlets for farmers to sustain their productivity gains, taking advantage of its Purchase for Progress (P4P) program. In 2019, R4 in Zimbabwe plans to further strengthen this integrated approach by developing climate services for smallholder farmers, helping them to make better choices in the context of a changing climate.



R4 participant during a training on rain gauge monitoring, Malawi.
WFP/Hussein Madih

Evaluation and Learning

- As R4 expands geographically and moves to scale, it is essential to strengthen the integration between its components and continue searching for new ideas to expand the basket of tools available to farmers.
- Achieving a systematic transition process from vulnerable food insecure to resilient and productive households requires a clear exit strategy communicated to all participants, as well as multi-year resources.
- Ensuring that farmers understand the products they are buying and how index insurance works is an important feature of the R4 model. It is essential to think of participants as 'clients' and to continue actively engaging them in project design, product customization, and outcome monitoring and ensuring strong feedback mechanisms. For instance, farmers must participate meaningfully in insurance design. It is important to obtain input from farmers and train them in weather data collection.
- National ownership since project inception is crucial. In all countries, better government engagement and involvement in implementation improves visibility, sustainability and the general effectiveness of the program. Going forward, stronger links with key government stakeholders will allow the program to be integrated in the countries' strategies on social protection.

- Satellite weather index insurance is not the only risk transfer tool. Area yield or rain gauge based indices are also efficient tools. All have their strengths and weaknesses and the next phase of R4 will focus on building systems with local stakeholders and be ready to progressively phase out of the insurance process.
- Beyond the technical issues of product development and fine-tuning, setting up the proper delivery mechanisms has become the key challenge for the insurance component, now that R4 is about to significantly increase its portfolio. In vulnerable environments, there are often no 'ideal' delivery channels. Thus, R4 has a need and opportunity to set up ad hoc systems.
- Focus on women and gender equality remains at the heart of R4. While progress is being made at different levels in the different country contexts towards furthering gender equality, some of the challenges that pose barriers to women's ability to engage in services offered to them include women's disproportionate share of unpaid care and household duties, negative social and cultural practices and norms, power imbalance, inability to be part of important decision making, including over the use of income and higher illiteracy rates. Efforts to address these barriers will be part of the way forward as a central objective to build vulnerable farmers' resilience to climate risks.
- Progress toward making weather index insurance sustainable is limited. The significance of this concern depends on the outlook for continued donor funding. R4 has increased the portion of the premium that has to be paid in cash, but few farmers are graduating from paying with labor to paying in cash and the proportion of farmers who pay fully in cash has declined over time. The speed at which farmers are able to transition to full cash payments is dependent on context and on how well and fast the programme is able to integrate the different components. R4 will experiment with scaled cash payment requirements that increase with the household's ability to pay according to transparent criteria.¹² Engaging wealthier farmers who can pay in cash requires an outreach plan informed by a clear understanding of the different product needs that wealthier farmers may have.

12. Madajewicz, M. Tsegay, A.H. and Lee, R. (2017). *Helping smallholder farmers to manage risks, the impact of R4 on livelihoods in Tigray, Ethiopia, from 2012 – 2016* – page 6. This is an independent impact evaluation from Columbia University, New York, USA. Requested and revised by Oxfam America and the World Food Programme.



Farmers sign-up to receive insurance coverage in Kenya.
WFP/Jothei Bylappa

The Risk Transfer Component

Under the risk transfer component, index-based insurance - an innovative type of insurance based on a proxy for losses- is offered to participants. Index based insurance compensates farmers based on changes in a pre-determined index correlated with agricultural yield, rather than on-site assessments of actual damage incurred due to insured risks. Insurance payouts are distributed to insured farmers if the index falls beyond a pre-determined threshold e.g. rainfall recorded over a certain period is below the value set in the index for drought coverage.

The index is designed by specialized research institutions such as IRI or technical service providers from the private sector in close consultation with farmers, local and national government ministries, local partners, and experts in agro-meteorology and remote sensing. Discussions during the index design phase determine index parameters such as triggers, exits, frequency of payouts, fixed start of season and coverage windows,¹³ and payout split in each window.

13. The term 'window' here refers to critical periods within a growing season that the index targets. An early window coverage targets severely late onset of rainfall or significant dry spells for long cycle crops that occur after sowing, while a late window coverage targets severely early end of rainfall or significant dry spells in the late season that affects flowering and grain filling for all crops.

Index based insurance can be categorized into two types:

Weather index insurance

Payouts are based on realizations of a specific weather parameter such as rainfall measured over a pre-specified period of time at a particular weather station or by a satellite. The parameters of the insurance contract are set so as to correlate, as accurately as possible, with the value of loss for a specific crop type. The WII is designed to cover two main drought perils: (i) severely late onset of rainfall or significant dry spells after sowing or in the middle of the season; and (ii) severely early cessation of rainfall or significant dry spells late in the season. As payouts are based on the same contract and rainfall measurement for a unit area, the need for an in-field assessment is eliminated and all insured farmers within this defined area receive the same payout levels. This product is currently offered to R4 farmers in Ethiopia, Senegal, Malawi and Zambia. Additionally, a hybrid index using vegetation indices has been adopted for the second window in Ethiopia.

Area yield index insurance

Payouts are based on the realised average yield of an area such as a county, a district or even a village, not the actual yield of the insured farmer. The insured yield is established as a percentage of the historical average yield for the area. A payout is triggered if the realised yield for the area is less than the insured yield regardless of the actual yield on the insured's farm. A credible and consistent yield time series at the selected level of aggregation is required to design such an index insurance product. This product is currently offered to R4 farmers in Kenya.

End-of-season assessments

The 2017 season was overall average to below average in Ethiopia. For the first time, payouts have been triggered in Amhara. Some locations in Tigray will also receive a payout.

The rains in Senegal have experienced a large anomaly compared to historical averages showing very early onset and cessation. Thanks to the early start of season, most crops have had enough time and moisture to grow and yield good harvest. However, given the early cessation of rainfall, the second window of the designed index received significantly below-average rainfall and triggered payouts as per index specifications. The index also triggered in some locations in Kolda, mostly for rice and for the last window, although the outcome has not been finalized yet.

In Malawi and Zambia, the 2016/17 season was relatively good, and did not trigger the index.

Past few seasons were marked by relatively poor rainfall performance in Kitui County, Kenya - both the R4 dry run conducted during the 2016 short rain season (October-December) and the small-scale roll out of 2017 long rains (March-June) triggered insurance payouts.

FIGURE 8. Calendar of rainy seasons in R4 countries

		2017											
Countries	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Ethiopia													
Senegal													
Malawi													
Zambia													
Kenya													

ETHIOPIA

Overall, data sources indicated average to above average rainfall conditions during the 2017 agricultural season, with below rainfall conditions persisting during the month of July. Accordingly, the index triggered small to medium payouts for the villages in Kilte Awlalo, Tanqua Abergele and Atsbi Woredas during the early window.

The rainfall was above average in almost all R4 areas during August, while the results in September were mixed. Parts of central and northern Tigray exhibited below normal rainfall conditions during September. Accordingly, a small payout was triggered in some of the villages in Kola Temben, Saharti Samre, Tanqua Abergele, and Adwa woredas during the late window. Cross validation of the different datasets indeed showed a rainfall shortage, but this was not severe enough to trigger massive payouts. In Amhara, the rainfall recorded in Tara Gedam village during the late window was one of the lowest in history thereby triggering a significant payout.

The end of season field visit assessment report for Tigray indicated that the onset of rainfall was late and cessation of rainfall was early in the visited villages of Kihen, Barka, and Kilte

Awlalo resulting in 50 percent of the average rains received. Analysis of rain gauge data showed that the three woredas received very good rains during the months of August and September compared to the previous three years. However, data from the field was not very reliable to enable any firm conclusions to be drawn about the performance of the season.

In addition to the ARC2 rainfall indexes, International Research Institute for Climate and Society (IRI) implemented vegetation indices based on MODIS EVI¹⁴ during the 2017 growing season. The EVI¹⁵ index, which is designed to reflect rainfall shortages in September, also triggered some very small and scattered payouts, in some villages of the three woredas where the ARC2 late index triggered.

Overall, in the areas where the majority of the R4 project villages are located, the 2017 season was average to below average. Though there were significant dry spells in July, especially in the eastern woredas, the rainfall in August was above average in almost all project areas with average rainfall experienced in September in parts of central and northern Tigray, and some areas of Amhara region.

SENEGAL

In Senegal, R4's risk transfer component is offered in the Northeastern region of Tambacounda (satellite-based index) and the Southeastern region of Kolda (rain gauge-based index). The 2017 Senegal satellite index, focused on two drought perils, namely (i) severely late onset of rainfall or significant dry spells for long cycle crops after sowing and (ii) severely early end of rainfall or significant dry spells late in the season for all crops.

The 2017 season started well ahead in advance during the last dekad of June and ended earlier than usual, during the first or second dekad of October, with some dry spells in September. Various data sources confirm this trend. Due to

this early cessation, rainfall in the second window was well below average, and the index triggered payouts in all locations in Tambacounda as per design. The index design team is in the process of finalising the seasonal assessment and the final payout calculations will be made available in due course.

The rain gauge based index covered rain-fed rice and maize over three windows for risks such as major dry spells and sowing failure. Rains in Kolda were insufficient, triggering the rain gauge based index as well. Final payout amounts are yet to be communicated.

14. Due to sensor degradation, NASA slightly re-calibrated the EVI/NDVI data in the dataset version released for 2017. New EVI indexes and their corresponding historical payouts were generated using the new dataset, based on the identical software and design settings as applied for the original index. The EVI based triggers/exits are calculated for the period 2000-2016, and a payout was generated for 2017 based on those triggers.

15. EVI provides a measure of "greenness," or chlorophyll density, which is useful in monitoring vegetation and is an indicator of drought conditions.

ZAMBIA AND MALAWI

The 2016/17 season was average for Zambia and normal with some excessive rainfall in January and February for southern Malawi. Different data sources analysed by IRI (ARC2, CHIRPS, EVI, soil moisture, VAM monitoring, FEWSNET) confirmed that both, southern Zambia and Malawi, experienced a relatively average to good year, despite some anomalies earlier in the season. For Zambia, the comparison of ARC2 data with daily ground rainfall showed very similar trends despite some discrepancies in the magnitude of precipitations. The absence of payout aligned with the situation on the ground, with normal to above normal precipitation levels.

In Zambia, farmers reported enough rains during the coverage period, and though they experienced some crop loss due to pests and fungi, they did not expect a payout. Overall, farmers in Zambia project areas considered this as a good season.

For Malawi, the comparison of satellite data with daily ground rainfall showed the same trend and the same average situation for most locations, confirming the planting dates and absence of payout. Yield reduction was experienced by some farmers due to Fall Army worm infestation, and partially due to water logging from consecutive days of heavy rains toward the end of the season. However, it should be noted that, despite efforts at educating farmers about the insurance product, many are still not able to fully understand the differences between insurance coverage and their actual loss experiences. Despite reports of crop damage due to water logging and pests, some farmers expected a payout even though the insurance coverage is strictly for extensive dry spells and drought.

KENYA

The dry run in Kenya was conducted during the 2016 short rain season in five sub-counties of Kitui with the objective of further refining and incorporating the findings of a 2015 study into the design of a feasible insurance product for asset creation participants. Three different index insurance contracts including weather index-based (WII)¹⁶ and area yield index (AYII)¹⁷ insurance were developed and tested with extensive participation of communities and partners. The short rains season¹⁸ was below average in most parts of the country. In addition to the drier than normal conditions, hotter than normal land surface temperatures also contributed to poor agricultural yields in the country. As such, WII triggered hypothetical payouts ranging from 18 to 43% of the sum insured in the three sub-counties of Kitui Rural, Kitui South, and Mwingi Central, while AYII triggered the highest possible payout of 85% sum insured in all study locations. At the end of the season, products were compared based on their hypothetical payouts, feedback from communities, seasonal assessments, and operational considerations.

Lessons learnt during this phase informed the planning and design of a small scale roll out – insurance coverage for drought tolerant crops was offered to 963 asset creation participants in Kitui Rural during the 2017 long rain season. Poor long rains performance and the residual impact of 2016 drought reduced the yield of drought tolerant crops, triggering an insurance payout of around US\$40,247. The payout will enable affected households to purchase agricultural inputs for the next season or alternatively, cover the food gap for two months.

16. WII is a type of index insurance in which compensation is based on realizations of specific weather parameters, e.g. rainfall.

17. AYII is a type of index insurance in which compensation is based on the realised average yield of area, e.g. sub-county.

18. Shot rains take place from October to December.



Women participants during an insurance claim settlement in Senegal.
WFP/Mathieu Dubreuil

Addressing Basis Risk in R4

In index-based agricultural insurance, farmers are not directly insured against loss of yields or incomes, but against a pre-determined index that acts as a proxy for yields. One of the key features of index insurance is that farmers are grouped into Unit Areas of Insurance (UAI),¹⁹ within which farmers pay the same premium amounts, and receive uniform levels of payout, when triggered. This section illustrates the challenge of basis risk and the strategy developed by R4 to manage it proactively.

Basis risk

A fundamental issue in index insurance, basis risk, is the mismatch between index-triggered payouts and actual losses experienced by farmers or communities. However, measuring this mismatch is complex, and distinguishing coverage gap²⁰ and basis risk can be extremely difficult, especially when there is a lack of credible and consistent ground-level data.

19. Unit area of insurance can be described as a homogeneous risk zone under which all insured clients are deemed to be on par in the assessment of claims. It is a vital parameter in the design of index insurance and has to be decided based on considerations such as data availability, technical viability and operational feasibility.

20. Coverage gap arises because insurance can only be made affordable by setting triggers that provide payouts for infrequent but severe events, but do not compensate for all losses.

If payouts are nil or too low compared to the value of loss intended to be paid by the policy, index insurance fails to meet its primary 'protection' objective. On the other hand, payouts that are too high compared to actual losses undermine the plausibility of insurance schemes as they drive the premium rates upward. Both these extremes can cause loss of confidence in index insurance amongst the insured, and likely have impact on renewal and uptake rates in the next season. In worst cases, basis risk can also severely damage the very livelihoods of vulnerable people that it is designed to protect.

In addition to causing dissatisfaction among the insured, basis risk poses a grave reputational risk for all implementing partners, threatening the sustainability of this nascent sector.

R4's strategy to manage basis risk

Some level of basis risk is unavoidable in any index insurance scheme. R4 has developed a broad strategy to manage basis risk that primarily involves forward planning of contingency measures and processes before, during, and after the season to mitigate the impact of a basis risk event. The strategy is built on the fundamental requirement of all potential sources of basis risk being identified and understood by all relevant stakeholders. At the first stage, we envisage to use this strategy to also deal with potential major coverage gaps.

Overall, R4 focuses on the following four elements to manage basis risk:

(i) Index Design

As basis risk is an inherent technical issue in designing an ideal index-insurance contract, R4 makes a significant effort in managing it at the design stage itself. An optimal design and testing of the product is ensured in advance of the product launch, using informed expertise in climate and remote sensing, extensive consultations with national and/or local agro-meteorological experts, and involvement of farmers in decision making through community-based participatory design processes. Additionally, indices are monitored throughout the season, validated at the end of each season and revised as needed for the next year in close consultation with farmers, implementing partners, and local agricultural and meteorological experts.

(ii) The four 'Rs'

By design, R4 mitigates some impacts of basis risk and coverage gaps as it is a holistic program with four components which collectively aim to build resilience of smallholders. 'Failure' of the insurance product to fully compensate for a perceived loss is partly absorbed by gains from the other components.

(iii) Financial Capability

One of the key elements of the program is financial literacy of participants and partners to ensure that farmers understand the products fully.

(iv) Financial management through the R4 Contingency Fund

R4 has taken an unusual stance towards basis risk management by offering ex gratia payments in extremely exceptional circumstances, adjudicated and validated by strict technical criteria. This fund can also be used to address constraints in coverage gap issues. R4 is still working on the long term financial sustainability of such a mechanism.

Managing clients' and partners' expectations

Very often distinguishing between a basis risk event and a coverage gap situation can be challenging. One of the key operational challenges during a severe basis risk event is managing the expectations of the insured participants as well as the local partners. Disseminating simple but unambiguous and comprehensive information about weather index insurance features throughout the programme cycle plays a key role in preventing inaccurate expectation build up. Highlighting potential basis risk issues and coverage limitations in the insurance contract and membership forms also ensures transparency and standardised messaging to clients.

Preparedness processes to address a potential basis risk event

Pre-season processes build the foundation of the R4 basis risk management strategy by putting in place the requisite structure to address a potential basis risk event in a proactive and structured manner. It primarily consists of three broad sub-processes:

1) Measures to mitigate the likelihood of a basis risk event

The table below illustrates the potential sources of basis risk and R4's mitigation measures.

FIGURE 9. Sources of basis risk and R4's mitigation measures

Source of basis risk	R4 basis risk mitigation measure
<p>Product Basis Risk</p> <ul style="list-style-type: none"> Difficulty in correlating the index (intended as a proxy for yield losses) well with the weather variable (e.g. rainfall) due to complex crop growth patterns, susceptibility to dry spells, soil type and degradation. 	<p>Continuous index design monitoring, validation and improvement process, including with communities to capture the worst events experienced, and agronomists to optimize the design.</p>
<ul style="list-style-type: none"> Yield loss due to uninsured perils (e.g. pests); losses that could be mitigated by farmers through better practice response to perils; losses below “deductible” of insurance. 	<ul style="list-style-type: none"> Assessment of uninsured risks and constraints and feasibility of index insurance and acceptable level of basis risk. Design other R4 components to help farmers cope with losses in yield that are not related to insured risks e.g. Disaster Risk Reduction (DRR) activities to help reduce the impact of floods, savings and diversified income to better cope with idiosyncratic losses. Consumer education on product features.
<p>Contract Design Basis Risk</p> <ul style="list-style-type: none"> Contract parameters may be incorrectly set. Difficulty in setting contract parameters in situations where there are major ‘constraints’ limiting yields. 	<ul style="list-style-type: none"> Continuous index monitoring and validation process. Educate farmers about parameter settings and their pay out implications as compared to possible yield shortfall. Design soil and water management activities, or focus on farming practices improvement under the risk reduction component on the basis of vulnerability assessment of each region/village.
<p>Spatial Basis Risk</p> <p>Discrepancy in the amount of rainfall recorded by the rain gauge or satellite and that received in different villages or different parts of a village.</p>	<p>Continuous index monitoring and validation process. Use of ground and satellite data to better understand the season.</p>
<p>Temporal Basis Risk</p> <p>Variation in start of season, individual farmer planting decisions and short/long cycle crop type.</p>	<ul style="list-style-type: none"> Product design improvement (windows setting). Improvement of access to inputs and farming practices.

2) Country basis risk plans

- (i) Simple and well-articulated steps to identify and quantify a basis risk event, including key technical processes for assessing how losses can be identified and monitored (e.g. baseline data, crop monitoring, yield sampling, local Ministry of Agriculture extension reports, and monitoring using relevant ground and remote sensing datasets).
- (ii) Scenario development at individual, village, and portfolio level to consider the possible extent, financial value, and frequency of potential basis risk events.
- (iii) Strict technical criteria to evaluate the severity of basis risk event, and judge its eligibility for *ex gratia* payments, which can only be in exceptional circumstances.
- (iv) In case of outcomes where *ex gratia* payments are deemed necessary, develop organisational and financial mechanisms within each country to take decisions and manage basis risk payouts.

- (vi) Dissemination of key messages to all stakeholders to ensure transparency of processes and maintain integrity of the index insurance component.

3) Employ technical methods to track the season and identify a potential basis event

The aim of R4's basis risk intervention is to set an objective process for the identification of source(s) of basis risk and the measurement of the amount and localization of any realised loss. This can be technically and organisationally challenging to achieve, and objectivity is necessary through transparency and clarity of processes across all relevant partners, as well as by ensuring that decisions are taken based on technical criteria, thereby eliminating the need for a 'negotiation' with partners, including farmers, their representatives, and political institutions.

Lessons learned

- Effective partnerships with key stakeholders, where all partners are equally aware about the technical and operational complexities of index insurance, basis risk and related challenges, are central to manage basis risk.
- The process to minimise the potential basis risk is ongoing each year through improved product design and index calibration. Investment must be made to explore new technical solutions to balance risks of adverse selection and moral hazard, affordability and product quality.
- Other critical factors like the intensity of farming systems and impact of consecutive adverse years must also be assessed to strengthen integrated risk management approaches.
- Building the financial capability of insured participants through effective channels is also critical for the sustainability of index insurance mechanisms in developing countries.
- In addition to serving development-oriented objectives, ex gratia payments may also be used as a buffer to phase in experimental index improvements using new technologies to offer farmers the protection of improved product features without exposing them to the risks of untested products in a technically supervised adjudication process.

Conclusion

It is important to emphasize that for this strategy to be effective it must be customized to the national context– R4 country model, technical specifications, national stakeholders, local capacity, and resources at disposal. The broad global strategy detailed above provides a guide for the development of each country specific basis risk strategy.

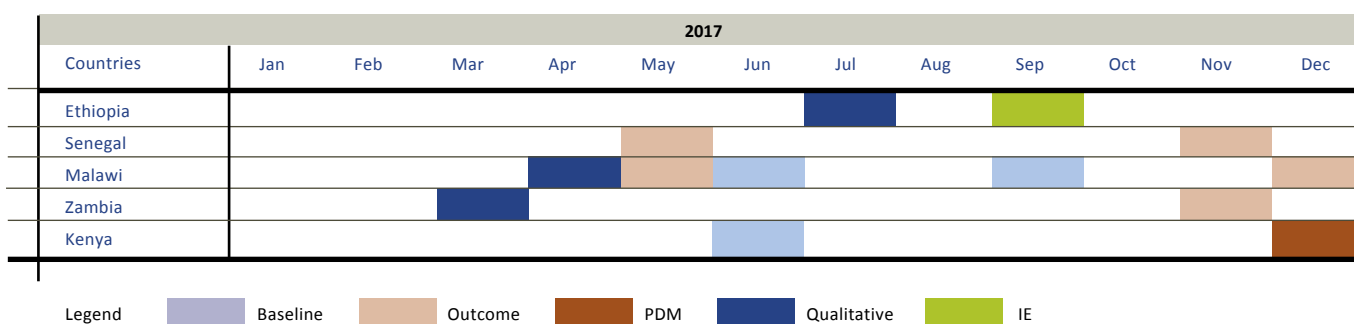
Country-Level Evaluation Results

In the evaluation and learning agenda of R4, different tools have been applied to assess the impact of the program depending on the country and on the development stage of the initiative.

A rigorous monitoring, evaluation and learning (MEL) system is being streamlined across countries in order to assess the impact of the program in its totality. This system is based on a sequential set of assessments to understand how the delivery of outputs progressively contributes to the expected outcomes of the interventions and informs design of the intervention accordingly. This sequence includes tracking of households’

participation into different components over time, Beneficiary Contact Monitoring carried out shortly after the delivery of specific services (in 2017 this has been tested in Kenya to capture access to, use of, and satisfaction with an insurance payout), and systematic collection of household level data to record changes at different points in the implementation cycle. This MEL system will occasionally be complemented by impact evaluations (IE) carried out by external companies or consultants. The objective of the MEL system is to provide rapid and statistically valid elements to inform decisions about programme design.

FIGURE 10. Timeline of M&E surveys or analysis conducted in 2017



This section summarizes the main findings of the externally managed impact evaluation in Ethiopia, the outcome baseline and beneficiary contact monitoring survey carried out after payouts in Kenya, the outcome monitoring data in Malawi and

Zambia and the qualitative survey conducted in Senegal to complement the results of the quantitative analysis conducted in 2016.

ETHIOPIA

An external impact evaluation was conducted to assess the medium to long-term potential of the risk reduction and weather index insurance components of the R4 program in Tigray and Amhara using quantitative household surveys and Focus Group Discussions and Key Informant Interviews. Data was analyzed using a difference-in-difference methodology to measure the impact over the 2012 -2016 period.

The following key results were reported:

- Food security of R4 households is higher through (1) increased saving and borrowing, which smoothens the differential between income and demand peaks, and (2) diversification of income sources away from cereal crops.
- R4 is helping smallholder households, especially female-headed ones, stabilize their access to food in the face of droughts, while maintaining their productive assets.
- R4 impact on agricultural production is limited. One reason may be that, as opposed to control villages, in 2016 R4 villages in two of the three study districts suffered poor rainfall a year after the historic drought that occurred in 2015. This highlights the fact that recurrent droughts may continue to pose a challenge for improving agricultural production in the absence of interventions that improve water availability, including irrigation.

SENEGAL

In 2017 a qualitative outcome monitoring was conducted by Oxfam to complement the findings of the program evaluation conducted in 2016 and explore potential areas of innovation for the R4 initiative. The survey completes previous analyses by focusing on women's economic empowerment, and capturing the effects of the credit and savings component. The methodology adopted combines semi-structured interviews with administrative authorities and focus group discussions (FDG) with women's or mixed groups.

Key findings of the qualitative survey:

- The perception retrieved from FGD indicates that women's economic empowerment has improved since the beginning of the program. According to participants the program has made participating women more economically independent from men, compared to the past.
- The saving groups promoted by the R4 initiative have triggered organizational dynamics and promoted investment leading to the creation of small enterprises or economic interest groups (EIG) that contributed to an increase in participants' income.
- The analysis of the data collected revealed some factors that could hinder the full success of women's empowerment. These factors include the lack of formalization of the groups, which acts as a barrier to access of services, the absence of younger women who can ensure the sustainability of the savings groups, the non-diversification of IGAs, women's low educational attainment and men's reluctance to reduce their control over women activities.

MALAWI

In 2017 the R4 team conducted an intermediate review to identify the effects of the program after two years of implementation. The review was conducted by comparing quantitative key indicators against baseline including an analysis of resilience and crossing the results with the results of a qualitative survey conducted in 2017.

Key findings:

- R4 has been effective in targeting those in need and has brought about positive changes, especially in terms of food security.
- Women greatly benefit from the program and have recorded the biggest gains especially in agricultural productivity.
- Crop diversification has improved during 2016/17 growing season and maize yields, which is the staple food in Malawi, have increased compared to baseline.
- Credit take-up among male and female headed households more than doubled compared to baseline.
- Women save more compared to men;
- Resilience analysis shows a significant improvement in the resilience capacity index (RCI) of households having participated to the R4 initiative, as opposed to the control group that remained stable in the period. This difference can be attributed to an increase or stabilization of productive assets (land, livestock and tools) owned by HH that constitute the core element of their livelihood. The improvement of assets contributed to improve HH income and investment reducing the dependence of R4 participants on safety nets.

ZAMBIA

The outcome monitoring survey conducted in May 2017 presented the evolution of participants in the different expansion phases of the program. The analysis provides an insight of the changes observed in households after two years of implementation.

Key findings:

- Food security status has improved with no household being severely food-insecure. Households improved their diet diversity (from 3 to 6 food groups consumed) and reduced the severity of the coping mechanisms used to face shocks (emergency and crisis coping strategies reduced by 13 percent and 16 percent respectively).

- The percentage of households accessing informal community savings mechanisms and formal savings with commercial banks increased by more than four times in the period. This can be attributed to increased capacity on aspects of financial literacy and discipline offered by R4.
- The correlation analysis between education level of the head of households and total land area put under conservation agriculture indicates that households with higher educational background have a higher chance of employing conservation agriculture techniques.

KENYA

A baseline that measured individual outcome indicators as well as the resilience capacity index (RCI) was conducted in June.

Key findings of the baseline survey:

- Targeted population suffered the effects of la Niña phenomenon and is food-insecure.
- Most households rely on assistance followed by sale of animals and non-agricultural wage labors.

In addition, due to the drought experienced in 2017, the yield insurance issued a payout for all 963 participants in November 2017. A phone survey was conducted one month later on a sample of recipients to understand the perception, satisfaction and use of the payout.

Key findings of the contact beneficiary survey:

- The majority of households (85 percent) spent their payout on food and one third purchased livestock and agricultural inputs. We can therefore consider that the insurance payout has been useful to purchase food, limiting the degradation of household food security after a failed agricultural campaign, as well as limiting the potential erosion of livelihoods caused by drought.
- Women play a major role on expenditure decision.
- While respondents are in general satisfied with the payout and the process, suggestions were made to improve the communication, the timeliness of the payout and build capacities on financial management (insurance, savings and investment).



R4 farmers participating in a savings group in Ndoni, Zambia.
WFP/Chrissy Mupuchi

Conclusion

Contributions by donors have allowed the R4 initiative to meet its objectives in each country and to continue its steady expansion. After a successful pilot in Southern Africa, thanks to the support of Swiss Development Cooperation (SDC), R4 phase II started in Malawi and Zambia in July 2017. In 2018,

R4 expansion in Southern Africa will also include a pilot in Zimbabwe. R4's pilot in Kenya scaled-up quickly from over 900 to almost 5,000 farmers in the same year. The figure below shows the contributions to R4 of past and current donors and technical partners.

FIGURE 11. Donor contributions to R4

Donor	Recipient	Total contribution (US\$)	Countries	Funding period
Swiss Agency for Development and Cooperation - SDC	WFP	6,579,000	Malawi, Zambia	(2014-2017)
France	WFP	539,407	Senegal	(2016-2017)
Swiss Re	Oxfam America	1,250,000	Ethiopia, Senegal	(2012-2016)
Margaret A. Cargill Foundation	Oxfam America	5,000,000	Ethiopia, Senegal	(2015-2016)
United States Agency for International Development - USAID	WFP	7,958,453	Senegal	(2012-2015)
USAID - iDIV Award	WFP	500,000	Senegal	(2014-2015)
Norway	WFP	2,700,000	Senegal	(2013-2014)
Rockefeller Foundation	Oxfam America	599,000	Senegal	(2012-2013)
Oxfam America	Oxfam America	1,100,000	Ethiopia	(2010-2013)
Swiss Agency for Development and Cooperation - SDC	WFP	9,700,000	Malawi, Zambia, Zimbabwe	(2017-2021)
Canadian International Development Agency - CIDA	WFP	500,000	Kenya	2018
France	WFP	500,000	Senegal	2017
Oxfam America	Oxfam America	1,273,833	Ethiopia, Senegal	(2017-2018)
TOTAL	OA/WFP	38,199,693	All	

Looking ahead

The R4 Rural Resilience Initiative was launched as a strategic partnership between OA and WFP in 2011. The program leverages both OA's and WFP's strengths, networks, and institutional opportunities to test and scale up a comprehensive risk management approach to help communities be more resilient to climate risks.

In 2016, the initiative expanded in Ethiopia and Senegal, while also rapidly growing in Malawi and Zambia. With this successful expansion R4 now reaches over 57,000 households and is set out to initiate operations in Zimbabwe. By 2020, the R4 Initiative aims at reaching 500,000 insured farmers in 10 to 15 countries.

A rigorous Monitoring, Evaluation and Learning (MEL) system is being streamlined across countries in order to assess the impact of the program in its totality.

R4 is moving towards creating sustainable market conditions to facilitate the transition to commercial insurance, adopting appropriate and cost-effective technology solutions to facilitate effective feedback loops, electronic transfers, farmer registrations and education, and continue efforts in furthering gender equality.

Annex 1: Metrics from the Field

ETHIOPIA



Risk Reduction

Tigray

- 29,340 farmers involved in risk reduction activities in Tigray and Amhara;
- 52 km of deep trench, 40 km trench bund and 25 km stone faced trench bund constructed;
- 50 percolation ponds constructed;
- 219,000 pits prepared;
- 7.6 km of simple runoff diversion canals constructed;

- 1,240 plots micro-gardens prepared;
- 335,890 trees planted;
- 2,017 compost pits dug;
- 50 roof rain water harvesting constructed;
- 30 km of simple runoff diversion canals constructed;
- Agricultural tools (1000 shovels, 1,000 pick axes and 1,775 spades) provided to FHHs;
- Agricultural inputs/vegetable seeds (61Kg Switch chard , 68Kg Cabbage, 29Kg lettuce and 68 kg tomato) provided to FHHs;
- 1,600 watering cans provided to FHHs for micro garden development.



Risk Transfer

- 31,942 farmers (11,766 women) insured, 29,442 in Tigray and 2,500 in Amhara;
- Total sum insured amounting to US\$2,291,930;
- Total premium amounting to US\$369,723;
- 29,340 farmers (26,955 in Tigray and 2,385 in Amhara) paid 16 percent of insurance premium in cash;
- 2,602 farmers paid fully in cash.



Risk Reserves and Prudent Risk Taking

Tigray

- 3,929 farmers participated in 180 VESAs saving US\$28,669 (ETB 790,114) and US\$70,917 (ETB 1,954,468) in RUSACCOs;
- 1,084 farmers took out loans worth US\$174,147 (ETB 4,799,500).

Amhara

- 2,574 participants saved US\$11,139 (ETB 306,982) in 123 savings groups;
- 1,520 farmers took out loans amounting to US\$9,573 (ETB 263,834).

SENEGAL



Risk Reduction

- 6,107 farmers enrolled in FFA;
- 258,5 ha developed;
- 25,500 Vetivers plants planted;
- 2500 Faidherbia albida plants planted;
- 5,000 Moringa Olifera plants planted;

- 32 T of rice seeds distributed;
- 17,900 m of stone bunds built;
- 2 water ponds dug;
- 2 dams built;
- 31,000 m of dykes levelling for water control conducted;
- 67 compost pits carried out;
- 6,107 people received food vouchers worth US\$243,000.



Risk Transfer

- 6,739 farmers (3,550 women) insured;
- 6,033 farmers accessed insurance by creating assets;
- 706 farmers paid for insurance fully in cash;
- Value of premiums: US\$239,743 (CFA 66,349,270);
- Sum insured: US\$1,752,115 (CFA 969,802,678).



Risk Reserves and Prudent Risk Taking

- 17124 farmers participated in 738 savings groups, saving up a total of US\$135,788 (CFA 71,582,700);
- 8,854 participants accessed and paid back loans worth US\$180,448 (CFA 95,793,600).



Risk Reduction

- 10,327 farmers (6,982 women) involved in risk reduction activities in Balaka, Zomba and Blantyre;
- Over 6,200 participants received climate information via SMS, phone, and extension workers;
- 6,796 farmers trained on soil and water conservation;
- 397 farmers trained on compost production and application;
- 75 farmers trained in soil and water conservation;
- 60 Lead farmers trained in conservation agriculture;
- 1,066 km of swales constructed;
- 138,017 m³ of deep trench constructed;
- 44,132 m³ of trenches constructed;
- 45,480 m³ checks dams constructed;
- 682 gullies reclaimed;
- 15, 807 m of gullies reclaimed;
- 5,553 heaps of compost manure applied;
- 45 shallow wells excavated;
- 197 hand dug wells/shallow wells constructed;
- 478.8 km of swales constructed;
- 22,371 tree seedlings planted to rehabilitate river banks;
- 22, 700 seedlings planted to rehabilitate bare hills;
- 45,807 m³ eyebrow basin constructed;
- 25 group nurseries established;
- 25 community woodlots established;
- 373,663 assorted seedlings raised at community-level;
- 71,621 trees planted;
- 305,690 seedlings raised for nursery establishment;
- 28 ha of land conserved through swales;
- 8 vetiver nurseries established;
- 382.9 km of vetiver hedgerow planted;
- 3,500 heaps of compost manure produced;
- Compost manure applied to 207 ha of land;
- 17,904 heaps of manure made;
- 13 community gardens established;
- 36 backyard gardens established at HH level;
- 2,754 gardens established;
- 27.5 km of community access roads constructed;
- 3 demo plots established for promotion of drought tolerant crops (Sorghum);
- 1.7 Km road rehabilitated.



Risk Transfer

- 10,327 farmers (6,979 women) insured 1,666 farmers paid 14.3 percent of premium in cash worth US\$4,417 (MK3,215,380);
- Total sum insured: US\$994,061 (MK 705,211,253);
- Total premium: US\$191,582 (MK 139,471,450).



Risk Reserves and Prudent Risk Taking

- 7,735 farmers (7,484 women) participated in 393 savings group saving up a total of US\$87,058 (MK 63,377,185);
- 187 participants (137 women) accessed loans worth US\$11,540 (MK 8,400,000).

ZAMBIA



Risk Reduction

- 3,867 farmers (1,948 women) participated in CA: minimal soil disturbance, permanent soil cover and crop rotations;
- 8 manual rain gauges built.



Risk Transfer

- 3,835 participants (1,1948 women) insured;
- 2,094 farmers contributed to their premiums in cash, for a total of US\$2,094 (ZMW 20,794);
- Total sum insured amounting to US\$723,970 (ZMW 7,189,280);
- Total premium amounting to: US\$114,743 (ZMW 1,139,438).



Risk Reserves and Prudent Risk Taking

- 1,536 farmers (986 women) participated in 64 savings groups accumulating US\$25,995 of savings (ZMW 258,139);
- 554 farmers (381 women) took out and repaid loans worth US\$20,515 (ZMW 203,721).

KENYA



Risk Reduction

- 5,546 farmers involved in risk reduction activities;
- 370 m³ of farm ponds built;
- 85,965 m of terraces constructed;
- 31,372 kai pits dug.



Risk Transfer

- 4,782 farmers (4,075 women) insured;
- Total payouts sum US\$41,500 for 963 participants;
- Total value of premiums of US\$23,236;
- Total sum insured amounting to US\$811,307.

Annex 2: Rural Resilience Event Series

Event Name	R4 role	Organizer	Focus	Expert Panel/Speakers/Attendants	Event Date & Location
Regional work shop on risk Transfer ARC and REPLICA	Yacine FALL (WFP) participant	African Risk Capacity (ARC)	The process by which countries choose their risk transfer parameters. Objective is also to understand what are the considerations which matter to governments.	ARC Team, West African Government officials, and stakeholders	26 - 27 January 2017, Dakar, Senegal
Self-assessment and lessons learned workshop	Global OA and WFP team, Zambia, Malawi and Zimbabwe country offices	SDC	Review R4 phase I and plan implementation of activities for phase II	SDC, Oxfarm America, R4 HQ team, Country Offices (Malawi, Zimbabwe, Zambia) and R4 partners	30 January - 3 February 2017, Lusaka, Zambia
FFA Planning Workshop	WFP Malawi country team	WFP	Planning workshop for implementation of FFA activities, bringing together partners implementing resilience activities to jointly plan as other districts also rolls out the Integrated Risk Management Programme	WFP Resilience team, Government and NGO Partners	23 - 27 February 2017, Liwonde, Malawi
International conference on climate services (ICCS 5)	Yacine FALL (WFP) presenter	Climate Service Center Germany (GERICS) and the local partner University of Cape Town (UCT)	Present the lessons learned about the R4 pilot on climate services	Government officials, academia and stakeholders on climate services around the world	28 February - 2 March 2017, Cape Town, South Africa
Regional work shop on data collection and how to conduct focus Group	Malick (OA) participant	OXFAM	SFC Capitalisation	Sala Dia MEL and Quality	15 March 2017, Tambacounda, Senegal
East and Southern African Sustainability Summit	Allan Mulando(WFP) participant	The Indaba Agricultural Policy Research Institute, Vuna and The DST-NRF Center of Excellence	Presentation on use of climate services information for weather index product design	Government officials, Private sector, NGOS, academic and development partners	16- 17 March 2017, Lusaka, Zambia
R4, GFCS and Integrated Risk Management Programme (IRMP) Planning workshop	Daniel Longhurst, Hussein Madih, Dominic Nyirongo & Patricia Mikuti	WFP	Present R4 and Integrated approach to resilience to partners and plan activities for 2017/2018 season.	Government officials and implementers of R4	30 - 31 March 2017, Balaka, Malawi
IRI Index design Mission and Training of partners	Mathieu Dubreuil, Daniela Cuellar and Hussein Madih (WFP), facilitators	Columbia University IRI and WFP	Index design training to national and district partners and community representatives from Balaka, Zomba, and Blantyre to SNIID process and data collection	WFP, IRI experts	1-14 April 2017, Lilongwe, Malawi
Index Insurance Workshop	Mathieu Dubreuil, Daniela Cuellar and Hussein Madih (WFP), facilitators and presenters	Department of Climate Change and Meteorological Services; WFP	Consolidating and strengthening expertise on index-based insurance as a key risk transfer mechanism	WFP, IRI experts	23-24 May 2017, Lilongwe Malawi
Africa Risk Capacity Workshop	WFP Malawi team participant	African Risk Capacity	Sharing information on the operations of ARC and lessons learned for the 2015/16 season	ARC experts	23 June 2017, Lilongwe, Malawi
Peer Learning Platform for Policymakers	Facilitator and presenter	International Labour Organisation (ILO)	To stimulate more government involvement to achieve greater scale and impact with agriculture insurance	ILO, WFP, UC Davis, Kenya (State dep of Agriculture, Livestock, insurance pool), Ethiopia (ATA), Uganda (MoF), Tanzania (Insurance Regulator), Nigeria (NIRSAL), Ghana (MoF, pool), Zambia (Social Protection), Pakistan (Central Bank), Bangladesh (Planning Commission)	4-5 July 2017, Nairobi, Kenya

Annex 2: Rural Resilience Event Series

Event Name	R4 role	Organizer	Focus	Expert Panel/Speakers/Attendants	Event Date & Location
African Risk Capacity workshop	Participant	ARC	Session on the Operational Planning Process in Replica	Relevant stakeholders and private sector	29 -30 September 2017, Dakar, Senegal
Seminar on Building smallholder farmer Resilience under climate change through Value Chain Management	Participant	Chinese Govt , United Nations Economic and Social Commission/WFP)	To Facilitate an Exchange of good practices in National policy and Strategy Development	Stanley Ndlhovu (WFP Zambia) Dr . Max Choombe (MOA)	18-20 September 2017, Kunming, China
Regional FFA learning and sharing of lessons workshop	Participant	Regional Bureau Johannesburg, WFP	<ul style="list-style-type: none"> i. create or build productive assets that have multiple benefits so that communities and households are better prepared to face any future shocks and stressors that undermine their food security ii. build capacity of affected communities to govern, maintain, utilise and manage the productive asset created iii. provide a direct food or cash transfer to meet the consumption gap of the most vulnerable that are directly involved in creating the asset but have been affected by recurrent shocks and stressors iv. Build and strengthen the capacity of government and partners so that they can create a conducive policy environment and enable technical support services to be provided to the affected communities 	Allan Mulando (WFP-Zambia) Emmanuel Gondwe (WFP -Zambia)	24-30 September 2017, Harare, Zimbabwe
IDF Microinsurance Meeting	Mathieu Dubreuil, presenter	Blue Marble & ICMIF	Selecting high potential microinsurance projects to reach InsuResilience targets	Relevant stakeholders and private sector	16 October 2017, London, United Kingdom
GAN Meeting	William Dick participant	ILO	index insurance	Relevant stakeholders and private sector	17-18 October 2017, Geneva, Switzerland
Webinar Microinsurance & Food Security	Mathieu Dubreuil, presenter	Microinsurance Network	Index Insurance & Food Security	Relevant stakeholders and private sector	17 October 2017, (webinar)
PARM workshop	Fabio Bedini, presenter	IFAD	Agricultural Risk Management	Relevant stakeholders and private sector	26 October 2017, Rome, Italy
Dialogue on Climate Risk Management in Kenya through the R4 Rural Resilience Initiative	Fabio Bedini, presenter	WFP	R4 experience & next steps	Relevant stakeholders and private sector	16 November 2017, Nairobi, Kenya
Dialogue on Climate Risk Management in Kenya through the R4 Rural Resilience Initiative	Organisers	WFP	Climate Risk Management in Kenya	Government of Kenya (MoALF, NDMA), donors, UN organisations (FAO, IFAD, ILO, and WFP), private sector (Kenya Agriculture and Livestock Insurance Pool and Pula Advisors) and other relevant organisations	16 November, 2017 Nairobi, Kenya
GIIF Conference	Mathieu Dubreuil, participant	World bank Group	State of Index Insurance	Relevant stakeholders and private sector	5-6 December 2017, Dakar, Senegal
GACSA Annual Forum	Mathieu Dubreuil, participant	FAO	Insurance as a CSA solution	Relevant stakeholders and private sector	12 December 2017, Rome, Italy

Annex 3: R4 Achievements

Ethiopia	2009	2010	2011	2012	2013	2014	2015	2016	2017
Participants	200	1,300	13,000	19,407	20,465	24,143	27,668	29,127	31,942
Value of premiums	US\$2,500	US\$27,000	US\$215,000	US\$265,686	US\$282,169	US\$253,687	US\$269,377	US\$432,722	US\$369,723
Sum insured	US\$10,200	US\$73,000	US\$940,000	US\$1,343,820	US\$1,238,567	US\$1,294,699	US\$1,486,989	US\$2,618,673	US\$2,291,930
Payouts	-	-	US\$17,000	US\$318,911	US\$27,138	US\$34,187	US\$364,094	US\$3,473	US\$94,177

Senegal	2014	2015	2016	2017
Participants	1,989	3,526	7,563	6,739
Value of premiums	US\$29,823	US\$70,975	US\$224,687	US\$239,743
Sum insured	US\$200,776	US\$592,888	US\$1,656,914	US\$1,752,115
Payouts	US\$3,929	US\$80,000	US\$69,039	-

Malawi	2015	2016	2017
Participants	500	2,446	10,327
Value of premiums	US\$9,500	US\$41,864	US\$191,582
Sum insured	US\$69,750	US\$281,290	US\$994,061
Payouts	US\$3,023	-	-

Zambia	2015	2016	2017
Participants	499	2,835	3,835
Value of premiums	US\$9,213	US\$85,500	US\$114,743
Sum insured	US\$74,30	US\$503,202	US\$723,970
Payouts	-	-	-

Kenya	2017
Participants	4,782
Value of premiums	US\$23,236
Sum insured	US\$881,1307
Payouts	US\$40,247

Annex 4: Media Citations and Resources

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Stories/BLOGS

[‘Crop insurance eases burden on farmers in southern Kenya’](#)

[“From modest savings, an entrepreneurial spirit”](#)

[“New Climate Data Transforms Insurance Projects in Africa”](#)

[“WFP Mobilizes Grant From The Green Climate Fund To Protect Farmers From Climate Change”](#)

[“Is insurance a climate cure-all? It’s complicated.”](#)

[“How To Dodge A Drought”](#)

[“Putting the missing “p” in public-private-partnerships: Lessons from the R4 Rural Resilience Initiative”](#)

[“Dear G7 Leaders: Insurance is hardly enough. Trust us, we know from experience”](#)

[“Ethiopian Farmers Get a Payout, Easing Effects of Drought”](#)

[“With Insurance, Loans, and Confidence, This Ethiopian Farmer Builds Her Resilience”](#)

[“In Northern Ethiopia, Weather Insurance Offers a Buffer Against Drought ”](#)

[“Weather Insurance Offers Ethiopian Farmers Hope—Despite Drought ”](#)

[“Medhin Reda’s Best Asset Is Her Own Hard Work”](#)

[“Gebru Kahsay Relies on Rain But Has the Security of Insurance”](#)

[“Selas Samson Biru Faces Uncertainty with the Seasons”](#)

Videos/multimedia

[The R4 Rural Resilience Initiative in Senegal](#)

[Africa’s Last Famine](#), a documentary co-produced by Oxfam America and Link TV, featuring HARITA

[R4: The Rural Resilience Initiative](#)

A Tiny Seed and a Big Idea

A New Tool for Tackling Poverty

Photography

Project photos are available upon request. See examples of photos used in the enclosed quarterly reports.

Partner Reports

- [IRI FINAL 2013 End of Season Assessment Report](#): This report provides an assessment of the 2013 rainfall season for the R4 project in Ethiopia in terms of satellite rainfall estimates and their implication for the 2013 indices.
- [HARITA IRI Updated 2012 HARITA Initial End of Season Assessment October 2012](#): This report is a deliverable by the International Research Institute for Climate and Society (IRI) to Oxfam America. It provides an early, exploratory assessment of the 2012 rainfall season for the HARITA/R4 project in Ethiopia in terms of satellite rainfall estimates and their implication for the 2012 indices.

- [HARITA IRI Report to Oxfam America March 2012](#): This report is a deliverable by the IRI to Oxfam America on the 2012 index development processes and presents the final indices offered in the project villages.
- HARITA IRI Report to Oxfam America May 2011: This report is a deliverable by IRI to Oxfam America on the 2011 index development processes. It provides a description of the indices, their structure, their data sources, the design process, and action plans for the project as well as a separate section with the educational materials used to support the 2010/2011.
- [HARITA IRI Report to Oxfam America June 2010](#): This progress report is a formal deliverable by IRI to Oxfam America and presents an overview of the scalable index insurance product development process for the 2010 growing season. It explains the economic risk simulation games conducted with farmers to understand their risk-management decisions/preferences and also to educate them about index insurance packages.
- [Technical Annex: HARITA IRI Report to Oxfam America June 2010](#): IRI has been working to build a formal statistical methodology that will systematically compare and integrate information on remote sensing of rainfall, ground-based data measurements, and other data sets. This report presents a preliminary analysis that focuses on Adi Ha—the pilot village— modeling rainfall at five neighboring sites, where daily rainfall amounts have been recorded during different intervals for each site over the course of a 49-year time period, from 1961 to 2009. This methodology is intended to be further developed and packaged into tools for contract design and evaluation.
- [HARITA IRI Report to Oxfam America October 2010](#): This progress report is a formal deliverable by IRI to OA that summarizes the 2011 scaling process and presents the education materials developed to support the scaling process.

Other reports

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Annex 5: R4 Partners and Institutional Roles

Our local/national partners in Ethiopia

- **Africa Insurance Company.** Private insurer in Ethiopia operating in the Tigray, Amhara, and Oromiya regions.
- **Dedebit Credit and Savings Institution (DECSI).** Second-largest microfinance institution (MFI) in Ethiopia with nearly comprehensive coverage of Tigray. Named by Forbes magazine as one of the top 50 MFIs in the world.
- **Ethiopian Farmers' Cooperative.** Primary organizing body for farmers in the community.
- **Ethiopian National Meteorological Agency (NMA).** Agency offering technical support in weather and climate data analysis.
- **Institute for Sustainable Development (ISD).** Research organization dedicated to sustainable farming practices.
- **Mekelle University.** Member of the National Agricultural Research System providing agronomic expertise and research.
- **Nyala Insurance Share Company.** Private insurer in Ethiopia with a strong track record of interest in agricultural insurance.
- **Organization for Rehabilitation and Development in Amhara (ORDA).** Established in 1984 with a focus on natural resource management, food security and agricultural development in Amhara.
- **Relief Society of Tigray (REST).** Local project manager for HARITA, responsible for operating the Productive Safety Net Program (PSNP) in six districts of Tigray and overseeing all regional coordination. Established in 1978. Working with Oxfam since 1984 on development issues. Largest nongovernmental organization in Ethiopia (and one of the largest in Africa).
- **RIB Union.** International brokers offering reinsurance services in Amhara.
- **Tigray Regional Food Security Coordination Office.** Office with oversight of the PSNP in the pilot area.
- **Tigray Cooperative Promotion Office.** Office responsible for helping organize farmers at the village level.
- **Willis Towers Watson.** Leading global advisory, broking and solutions company.

Our local/national partners in Senegal

- **Agence Nationale de Conseil Agricole et Rural (ANCAR) - National Agency for Rural and Agricultural Assistance.** Technical agency affiliated with the Ministry of Agriculture. In Koussanar, it is responsible for leading community awareness and mobilization activities, and providing seeds as well as technical advice to farmers. Like PAPIL and INP (listed below), ANCAR is a key partner for the Risk Reduction component.
- **Agence Nationale pour l'Aviation Civile et de la Météorologie (ANACIM) - National Meteorological and Civil Aviation Agency.** ANACIM helps with the design of insurance product(s) by providing historical and current climate data, and installing and maintaining weather stations.
- **BAMTAARE.** Technical agency affiliated with the Ministry of Agriculture, in charge of lowland rehabilitation and rice production activities in Tambacounda.
- **Caritas Kolda.** Religious organization carrying out DRR projects on access to water and sanitation, production and processing, and migration management, and leading voucher distribution in Kolda.
- **Compagnie Nationale d'Assurance Agricole du Senegal (CNAAS) - National Agricultural Insurance Company of Senegal.** Senegal's only agricultural insurance company (public-private company founded in 2008 by the government). It is the insurance provider for the product(s) offered under the Risk Transfer component.
- **Institut National de Pédologie (INP) - National Institute for Pedology.** Technical agency affiliated with the Ministry of Agriculture, in charge of soil conservation and restoration projects, including building stone bunds and check dams, and composting.
- **La Lumière.** A grass-root Senegalese NGO which provides financial services to low-income rural households. It is the current implementation partner for Oxfam's Saving for Change program in Senegal, and the implementation partner for the Risk Reserves component.
- **PASA.** Technical agency affiliated with the Ministry of Agriculture, in charge of lowland rehabilitation and rice production activities in Kongehuel.

- **PlaNet Guarantee.** Insurance broker specializing in micro-insurance for development and poverty reduction. In Koussanar, it helps CNAAS commercialize R4's insurance product(s) by conducting awareness-raising and marketing activities among clients.
- **Projet d'Appui à la Petite Irrigation Locale (PAPIL) - Project to Support Small Local Irrigation.** Technical agency affiliated with the Ministry of Agriculture, in charge of lowland rehabilitation and rice production activities in Kolda.
- **Regional Research Centre for the Improvement of Drought Adaptation (CERAAS).** CERAAS helps with the design of insurance product(s) by helping create the rainfall index (including by contributing to studies on the use of remote sensing tools), and by carrying out crop monitoring.
- **Union des Institutions Mutualistes d'Epargne et de Credit (U-IMCEC) - Savings and Credit Cooperatives' Union.** A microfinance institution with which we are currently implementing the risk taking component particularly the warrantage and other financial products tailored to the needs of rural women. It is a growing institution seeking to expand its network in rural areas especially.
- **SEN RE.** Senegalese reinsurance company.
- **Swiss Re.** A leading wholesale provider of reinsurance, insurance and other insurance-based forms of risk transfer.
- **District Councils.** Local government administrative authorities responsible for the implementation of FFA in the district, which includes activities like community mobilization and training, distribution of project inputs, supervision and monitoring, as well as liaising with other relevant District authorities.
- **Foundation for Irrigation and Sustainable Development (FISD).** With expertise in irrigation and water development, FISD supports R4 with sensitization, targeting, registration, monitoring and implementation of DRR activities and provides supervision and monitoring of R4 activities at district level.
- **Insurance Association of Malawi.** An association of technical experts in the insurance. Approver of insurance products and manages insurance risk in the insurance market.
- **Ministry of Agriculture (MOA).** Responsible for agriculture policies and programs at national and local level. It supports provision of extension services in the R4 project areas.
- **Ministry of Finance Economic Planning and Development (MoFEP&D).** Oversees the National Social Support Policy that governs the establishment of sub-programs including Social Cash Transfer Scheme (SCTS), Public Works Programme (PWP), School Meals, Village Savings and Loans (VSL) and Microfinance. Strategic partner to establish technical and operational synergies with existing programs.
- **NICO Insurance Company.** Main insurance underwriter for index-based insurance products in Malawi.
- **United Purpose (UP).** Long term presence in the country with a strong community-oriented approach, and experience in agriculture and savings projects. Supports R4 with sensitization, targeting, registration, monitoring and implementation of DRR activities and provides supervision and monitoring of R4 activities at district level.
- **World Vision Malawi.** Implementing relief, development and advocacy interventions in Malawi since 1982, World Vision operates in all 28 districts. They support R4 with sensitization, targeting, registration, monitoring and implementation of DRR activities and provides supervision and monitoring of R4 activities at district level.

Our local/national partners in Malawi

- **CUMO Microfinance.** A well-established microfinance institution in Malawi with the widest rural outreach which seeks to improve low income entrepreneurs with access to sustainable and integrated financial services to unlock their potential. Responsible for the delivery of the risk reserves and saving components of R4 and provides operational support on insurance.
- **Department of Climate Change and Meteorological Services (DCCMS).** Mandated to provide reliable, responsive and high quality weather and climate services to meet national, regional and international obligations through timely dissemination of accurate and up to-date data and information for socio-economic development.
- **Department of Disaster Management Affairs (DoDMA).** An institution mandated to plan, coordinate and monitor disaster risk reduction, preparedness and response activity in country. Provides overall strategic oversight and guidance for R4 in Malawi and supports R4 implementation and coordination through its local structures.

Our local/national partners in Zambia

- **Development Aid from People to People (DAPP).** Key R4 implementation partner with a strong community-oriented approach, long-lasting presence in the country, and experience in agriculture and savings projects. Ensures collaboration with Food and Agriculture Organization (FAO) and Ministry of Agriculture and Livestock (MAL) implementing the Conservation Agriculture Scaling Up (CASU) program.
- **Disaster Management and Mitigation Unit (DMMU).** The central planning, coordinating and monitoring institution for all Disaster prevention, preparedness and response activity implementation in the country. Supports R4 implementation and coordination at national level through the Disaster Management Consultative Forum (DMCF) and at local level through the Office of the District Commissioner.
- **Food and Agriculture Organisation (FAO).** Implements the CASU program together with the Ministry of Agriculture and Livestock (MAL), which aims at increasing crop production and productivity while at the same time ensuring sustainable use of natural resources amongst farmers practicing Conservation Agriculture (CA).
- **Ministry of Agriculture and Livestock (MAL).** Implements the CASU program together with FAO, and provides extension services to farmers.
- **Mayfair Insurance Company Zambia.** A General Insurance company registered and licensed by the Pensions and Insurance Authority of Zambia and underwriter of the index-based insurance products for R4.
- **Vision Fund Zambia Limited (VFZ).** Zambia's second largest microfinance institution with the widest rural outreach. VFZ offers credit, operational support on insurance and supports financial education trainings as part of R4.
- **Zambia Meteorological Department (ZMD).** The primary provider of meteorological services in Zambia, ZMD has offices in every Provincial capital and some districts, and is responsible for providing weather and climate information to the public and various sectors of the economy. It is also the custodian of the official records of Zambian Weather and Climate, and collaborates with R4 on seasonal monitoring processes.

Our local/national partners in Kenya

- **Catholic Diocese of Kitui.** Caritas works with sixteen partners across a wide portfolio of projects in water, food security, livelihoods and disaster risk reduction, justice and peace, environmental management, promotion of renewable energy and alternative income generation. A key implementing partner of R4, Caritas focuses on awareness raising and mobilisation, subscribing to the insurance policy on behalf of the participants, seasonal monitoring and claims settlement/communications in addition to its engagement in asset creation together with NDMA and county government.
- **CIC Insurance.** CIC group has for more than three decades experience of providing flexible and innovative insurance and financial services in Kenya. It was the sole insurance provider for R4 Kenya during the 2017 Long Rains, and is part of the Pool that provides current coverage.
- **County Government of Kitui.** In collaboration with NDMA, county government officers play a vital contributory role in index design, community sensitization, seasonal monitoring and provision of extension services.
- **Kenya Agriculture Insurance Pool.** Composed of seven insurers, the Pool underwrites risks in the name and for the account of all members and has the purpose of sharing the underwritten risk between all members. R4 has engaged with the Pool through its lead insurer, APA Insurance, to provide insurance coverage under the Kenya Agriculture Insurance Program for the 2017 Short Rains.
- **Ministry of Agriculture, Livestock and Fisheries (MoALF).** Through interventions such as R4, WFP is committed in its support and engagement with the MoALF to improve the livelihood of Kenyans and ensure food security through creation of an enabling environment and ensuring sustainable natural resource management.
- **National Drought Management Authority (NDMA).** An agency of the Government of Kenya, NDMA is mandated to establish mechanisms which ensure that drought does not result in emergencies and that the impacts of climate change are sufficiently mitigated. It is WFP's principal partner at the national level, which coordinates asset creation activities through a County Drought Coordinator and Asset Creation Coordinator in each county in which WFP support asset creation.
- **Pula Advisors.** Pula Advisors offer services in eight countries across Africa and Asia, and in 2016 alone, facilitated crop and livestock insurance cover to 400,000 farmers in Kenya, Rwanda, Uganda, Nigeria, Ethiopia and Malawi. As R4 Kenya's technical service partner, Pula provides technical support in index design, reinsurance/insurance arrangements, capacity strengthening, seasonal monitoring and crop sampling.

Collaboration

The R4 Rural Resilience Initiative is a strategic collaboration between the World Food Programme and Oxfam America, with no commingling of funds. Each partner has its own sponsors as listed. R4 is inviting donors to support expansion.



The World Food Programme is the world's largest humanitarian agency fighting hunger worldwide.

Each year, WFP assists some 80 million people in around 80 countries.

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