



## ETHIOPIA: The R4 Initiative as a Comprehensive Disaster Risk Management Strategy to Build Rural Resilience in Tigray

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Ways out of extreme poverty, vulnerability  
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## The R4 Initiative as a Comprehensive Disaster Risk Management Strategy to Build Rural Resilience in Tigray, Ethiopia

The R4 Rural Resilience Initiative enables rural communities to build their resilience in the face of extreme climate events. R4, formerly known as HARITA, is designed to increase smallholders' food and income security in drought-prone areas through a holistic risk management strategy. Operating in the northern Ethiopian region Tigray since 2009, R4 has reduced adverse impacts of climate shocks and stresses considerably. The initiative is currently implemented by Oxfam America (OA) and the World Food Program (WFP) in Ethiopia as well as in Kenya, Malawi, Senegal, Zambia and Zimbabwe.

R4 comprises four programme components: risk reduction, risk transfer, risk reserves, and prudent risk taking. Taken together, they offer farmers access to index climate risk insurance and credit, improve natural resource management, and encourage savings. Farmers lacking sufficient funds to pay the insurance premium benefit from an innovative insurance-for-work approach. Instead of paying in cash they work in disaster risk reduction (DRR) projects in their community.

The initiative reflects the global effort to enable the most vulnerable communities to better prepare for, respond to and recover from climate shocks and stresses. Climate extremes – becoming more frequent and intense as the climate changes – particularly threaten the well-being of rural populations engaged in smallholder agriculture. Extreme events such as heavy rains and droughts have a long-term effect on their income and food security.

As this desk study shows, in Tigray, R4 can be considered a good practice as it mitigates drought impacts on food and income security. It contributes to securing productive assets during droughts and increasing savings, loans as well as opportunities for income diversification during good seasons. Besides, R4 resulted to be particularly empowering for female farmers: They have become more food secure and managed to maintain and accumulate more productive assets than the control group. Moreover, female R4 farmers have been more prone to use credits and diversify their income sources.

*Food security, disaster risk management, climate change, Tigray, Ethiopia*

### Country background

Arid regions in Ethiopia such as Tigray are becoming increasingly drought-prone, a situation that particularly affects the poorest and most vulnerable populations due to their dependence on agriculture. As in many parts of the Global South, smallholder farming is the main livelihood strategy in rural Ethiopia: In Tigray, 91% of the population depends on agricultural activities (farming and livestock) (WB 2017: 28). Besides adverse climate conditions, factors such as soil degradation, limited access to land and poor water infrastructure additionally limit smallholders' agricultural productivity. In this context, droughts are likely to lead to food shortages, especially during the dry season between June and September. In Tigray, almost one-fifth of all households reports food insecurity at least one time a year (ibid.: 49).

In rural Ethiopia, climate vulnerability is often paired with poverty. Despite considerable economic growth and improved well-being indicators over the last years, poverty reduction remains a national challenge. This is particularly the case for rural areas that have not benefitted from growth to the same extent as urban areas. While the national poverty rate fell from 44% in 2000 to 30% in 2011, little improvements were made in poverty depth and severity, leaving large parts of the population behind (WB 2015: XV).

In the face of these challenges, the government of Ethiopia has anchored not only poverty reduction and food security but also DRR in its rural development agenda. In line with this agenda and backed by the international awareness on risk reduction and preparedness, the government established poverty and food security programmes linked to DRR (Trujillo / Baas 2014). The well-known Productive Safety Net Programme (PSNP), established in 2005, is one of them. This large-scale flagship programme responds to the basic needs of chronically food insecure rural households. The PSNP provides food and cash transfers while engaging in DRR via public work programmes – an element that enables R4's insurance-for-work component (Bliss 2019).

## Project background

R4 builds on the success of the initial HARITA programme that was jointly developed by Oxfam America, the local NGO Relief Society of Tigray (REST), and the insurance provider Swiss Re. Initially, HARITA started by introducing two components in Tigray: risk reduction in the form of natural resource management activities and risk transfer in the form of index climate risk insurance. In 2012, R4 introduced the prudent risk taking (credit) and risk reserves (savings) components in some districts of Tigray. Today, R4 provides a comprehensive social safety net that guarantees poor smallholders a minimal income (OA 2017).



To perform its function as a social safety net, the insurance remains R4's centrepiece. HARITA was a pioneer in experimenting with insurance based on indices and combining it with prevention measures (OA 2017). Index insurance schemes rely on proxies (mostly rainfall) to identify climate-related harvest loss and make individual field assessments obsolete. Such schemes are considered cost-efficient and can prevent negative production incentives (IFAD 2010).

Over the last years, R4 increased its coverage by expanding to other countries in the region. In 2019, the initiative covered Ethiopia, Senegal, Malawi, Zambia, Kenya and Zimbabwe, reaching over 87,000 farmers and benefitting up to 545,000 people (WFP / OA 2019: 6). In Ethiopia, 29,300 farmers (35% women) benefit from R4 in Amhara and Tigray, making the Ethiopian programme the largest in scale (ibid.: 12).



By focusing on prevention rather than mere relief aid, R4 represents a response to a global policy shift. Initiated by the Hyogo Framework for Action in 2005, and reaffirmed by the Paris Agreement as well as the Sendai Framework for Disaster Risk Reduction in 2015, global actors recognized the importance of managing risks before they occur to further reduce poverty and save the hard-won gains of past poverty reduction (FAO 2018). In this context, instruments such as index climate risk insurances are seen as a way to facilitate resilience to climate shocks and stresses (Schaefer / Waters 2016).

## Programme goals and activities

R4's programme logic suggests that the four-part strategy enables farmers to manage current and future climate risks better. Following the theory of change, farmers (a) cope with shocks without reducing food consumption and productive assets, (b) diversify income, and (c) improve agricultural production. As a result, R4 is expected to enhance income and food security (OA 2017).

To trigger the intended mechanisms, R4 relies on its four mentioned programme components:

1) For the **risk reduction** element, a team of R4 staff, agricultural experts, extension agents and community representatives decide on concrete activities for every district. A participatory and gender-sensitive vulnerability and capacity analysis provides a basis for the decision. The activities aiming to improve natural resource management and disaster risk reduction typically include rainwater harvesting, water diversion and

retention, planting to avoid soil erosion, composting, and micro-gardening. Some projects are paired with training activities or the distribution of inputs (ibid.).

2) The index climate risk insurance constitutes the **risk transfer** component. The insurance scheme is administered by the Rural Savings and Credit Cooperatives (RUSACCOs), held by the Ethiopian government. Farmers pay the insurance premium to the RUSACCOs and they disburse collective payouts. As the scheme relies on a rainfall index, payouts only occur when a predefined threshold of dry days during the growing season is met. Farmers are only indemnified for primary crops such as teff, sorghum, and maize. However, as insurance can result costly for smallholders, an innovative insurance-for-work model was established. It allows participants to work for their insurance premium rather than to pay for it in cash. This option is only open for beneficiaries of the PSNP. PSNP beneficiaries can pay for the insurance by working in PSNP's public work projects focusing on DRR. Yet, they are still required to pay at least 20% of the insurance premium in cash (WFP / OA 2019).

3) As part of the third programme element, farmers can build **risk reserves** through the accumulation of savings in community risk pools, so-called Village Economic and Social Associations (VESAs). R4 encourages farmers enrolled in the insurance to pool their savings in groups. By giving out loans to participating households, VESAs can cover livelihood risks not addressed by insurance such as illness. Moreover, VESAs act as a platform for knowledge exchange and advice. In Tigray, 4,175 farmers (1,562 women) engage in VESAs (ibid.: 7).



4) The **prudent risk taking** component refers to a microcredit scheme. Some RUSACCOs administer a

revolving fund and give out small loans to farmers. The fund remains active as farmers repay their loans after a year so it is available for the demands of other farmers. However, farmers who want to obtain a credit are asked to offer collaterals by purchasing an insurance and owning savings (OA 2017).

## Project impacts

Previous evaluations of the HARITA programme already showed positive results in enhancing smallholders' overall resilience (see WFP / OA 2014). An Oxfam evaluation in Tigray covering the period from 2012 to 2016 provided further insights. The field study took place in five villages within three districts where R4 has operated since the beginning: Adi Ha and Awet Bikalsi in Kola Temben district, Hade Alga and Genete in Raya Azebo district, and Hadush Adi in Saesi Tsaedaemba district. Between 2016 and 2017, the researchers conducted quantitative household surveys, focus group discussions, and key informant interviews. The evaluation mainly focused on food security, coping strategies and asset building. Special attention was paid to whether programme effects differed between male-headed and female-headed households (OA 2017).

Food security improved amongst R4 households, especially for women: female-headed households in R4 areas were 26% more food secure than female-headed households not participating in R4 (ibid.: 3). When it comes to coping strategies, R4 participants also fared better than the control group. Although R4 beneficiaries continued to use coping strategies considered as non-resilient (e.g. selling productive assets, reducing food consumption), they used strategies considered as resilient (e.g. sharecropping, taking additional jobs) more frequently than non-beneficiaries. Also, R4 households seemed to apply a wider range of coping strategies than they did in the past: They relied less on migration as a coping strategy and although they were still in need of government assistance, they supplemented it with their own savings (ibid.).

As R4 farmers restrained from non-resilient coping strategies, they were more likely to maintain or even accumulate productive assets such as livestock; this was particularly the case for women. Moreover, male-headed R4 households were able to increase savings by 138% more than the control group. While

savings of female-headed R4 households did not exceed those of the non-beneficiaries, the amounts borrowed increased by 255% more among female R4 participants in one district (ibid.: 3). R4 farmers particularly stressed the benefit of RUSACCO credit services and insurance payouts that gave them the freedom to invest in income generating activities, especially in non-agricultural ones. Although the insurance payout was too small to cover all expenses, farmers considered it a useful complement to savings and loans. Almost two-third of the farmers used the payout mainly to buy food items, while 8% used part of it for agricultural inputs, and 16% used it to cover other expenses (ibid.: 33).

The risk reduction activities were regarded as additional tools to increase savings and diversify income. Beneficiaries particularly underlined the role of water conservation and storages. Especially amongst women, micro-gardens were seen as valuable assets providing a source of nutrition and income. Female participants reported that they were shifting from crop to high-value vegetable production in micro-gardens using irrigation from water harvesting structures constructed in DRR projects (ibid.).



Taken together, the impact assessments showed that R4 had a considerable impact on smallholder resilience in Tigray. The initiative mitigated the drought impacts on food and income security by securing productive assets during a drought and by increasing savings, loans as well as opportunities for income diversification. Women's economic empowerment has to be particularly emphasised. Female-headed households in R4 villages managed to maintain and accumulate more livestock than households in control villages. Furthermore, they made more use of credits and income diversification,

e.g. by investing in small shops. These positive effects notwithstanding, evidence for improved agricultural production was limited.

## Conditions for success

- ▶ One condition for success is R4's **multisectoral approach** to risk management. Every component adds to improved income and food security in the presence of adverse climate conditions. Besides providing a basic safety net, the climate risk insurance component facilitates access to credit and protects assets through payouts. DRR activities secure income generation and encourage income diversification. The savings and credit elements enable farmers to invest in on-farm as well as off-farm income generation (WFP / OA 2019).
- ▶ A further condition is R4's **insurance-for-work** instrument. The approach allows poor smallholder farmers to pay 80% of the insurance premium in labour instead of cash. This is facilitated through R4's link to the Ethiopian social protection system, especially the PSNP whose cash-for-work segment enables R4's insurance-for-work component (OA 2017).
- ▶ **Flexibility** when it comes to programme design also proved to be one of R4's strong sides. Programme planners have responded to farmers' needs by adjusting programme instruments accordingly. For instance, the introduction of the credit and saving mechanism is a result of this flexibility (ibid.).
- ▶ Another success factor is directly related to the previous one: **community involvement**. During the design of the DRR activities, community involvement was crucial to develop a needs-based intervention. Furthermore, the R4 credit and savings components strengthened community-based associations such as VESAs and RUSACCOs, which also serve as knowledge platforms for farmers (ibid.).

## Challenges

- ▶ **Refine instruments:** Although the programme already shows a range of positive results, some instruments require further refinement to perform the desired function. Especially the DRR activities require further investments to improve water infrastructure and reduce farmers' dependence on rainwater. Without investments in irrigation, significant improvements in

agricultural production are hardly possible. Furthermore, delays in the flow of funds are causing delays in other areas. For example, risk reduction activities that should take place before the growing season are carried out during the growing season when farmers are busy in their fields. In addition, some evaluation results show a gender bias that R4 could further address. Women, for example, make much less use of community risk pools than men as the interest rates discourage them (OA 2017).

▶ **Seek closer integration:** On the macro level, R4's further integration into the national social protection system would encourage closer coordination between R4 and government programmes. Moreover, this would open the opportunity to further upscale R4 and make it available to more farmers (ibid.; WFP 2015).

▶ **Secure programme sustainability:** R4 programme planners need to take further steps to ensure financial programme sustainability. Particularly the insurance-for-work component depends heavily on continued donor funding. Although the share of the premium that has to be paid in cash has already been increased, few farmers are graduating from the insurance-for-work option. In 2018, less than 10% of all farmers paid the insurance premium completely in cash (WFP / OA 2019: 14).

▶ **Adapt programme logic:** Repeated stresses and shocks affect agricultural households' resilience in the long-term. Households facing droughts in two successive years were more prone to use non-resilient coping strategies, especially the reduction of food intake. This underlines the importance of additional interventions: non-farm activities and income diversification might become an important pathway to improve livelihood security in Tigray in the future (OA 2017).

▶ Pro-poor approaches to resilience such as the insurance-for-work component are necessary to make risk prevention accessible for the poorest segments of society. Resilience per se is not a pro-poor concept.

▶ Supporting non-agricultural income sources becomes more critical as agricultural livelihoods are increasingly endangered by climate change.

▶ Climate risk insurance schemes often lack financial sustainability as more and more people are adversely affected by climate extremes. Options are to adopt a regional or international risk distribution logic or to integrate wealthier farmers in the schemes.

▶ The integration of programmes such as R4 into national social protection systems and adaptation plans could foster a comprehensive planning approach for food security, adaptation, and resilience by country governments and their partners.

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## General conclusions for development cooperation

▶ Climate resilience becomes extremely critical for addressing poverty worldwide, particularly in rural areas. Therefore, lessons about effective and ineffective measures need to be shared more extensively.

▶ Resilience building is not a magic bullet. Building resilience against climate risks requires an integrated long-term approach with a strong prevention focus.

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## Images

1. Cover: Locals in Tigray participating in public work programme © WFP/Jiro Ose; 2. Risk management cycle (source: author's illustration based on WFP 2019: 9); 3. R4 farmers in Senegal receive insurance payouts © WFP/Carla De Gregorio; 4. Local authorities and R4 staff in Zambia checking on a weather station used to estimate drought incidence © WFP/Enoch Kavindele; 5. Female R4 farmer harvesting her insured crops in Malawi © WFP/Badre Bhaji.

## Project characteristics\*

B1 – Intensity of research team involvement

G1 – Gender index

P3 – Participation

A2 – Target group index

\* For explanation see Good Practice Handbook or [www.inef-reachthepoorest.de](http://www.inef-reachthepoorest.de)

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## INEF - Research Project

The research project aims to develop recommendations for state development cooperation. The aim is to identify measures that can better reach extremely poor, food-insecure and vulnerable population groups.

We examine the interdependencies of extreme poverty, vulnerability and food insecurity in order to identify both blockages and success factors for development cooperation.

Based on literature analyses and surveys of professional organisations at home and abroad, successfully practised approaches ("good practices") are to be identified and intensively analysed within the framework of field research. In addition to a socio-cultural contextualisation, the gender dimension is consistently

taken into account throughout. The local investigations focus on the participation of the affected population in order to capture their perception of the problems and ideas for solutions.

We initially conduct our research in Ethiopia, Benin, Kenya and Cambodia.

The project is funded by the German Federal Ministry for Economic Cooperation and Development (BMZ) under the special initiative "One World – No Hunger".

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