

A. OVERVIEW

A.1 PROJECT PROFILE

Countries	Malawi, Mozambique and Zimbabwe
Project symbol	OSRO/GLO/908/GER
Project title	Foundations for rebuilding seed systems post-Cyclone Idai: Malawi, Mozambique and Zimbabwe
Resource partner	Germany
Actual EOD	23 September 2019
Actual NTE	31 December 2022
Implementing partners	<ul style="list-style-type: none">• Malawi: Department of Agriculture Research Services, Ministry of Agriculture• Mozambique: Instituto de Investigação Agrária de Moçambique (Agricultural Research Institute of Mozambique)• Zimbabwe: National Herbarium and Botanic Garden• Bioersity International (now the Alliance of Bioersity International and the International Center for Tropical Agriculture [CIAT])

A.3 EXECUTIVE SUMMARY

In March and April 2019, Cyclones Idai and Kenneth made landfall in southern Africa, causing catastrophic damage in Malawi, Mozambique and Zimbabwe and resulting in the loss of lives, livelihoods and infrastructure. The storms destroyed local food production systems, including crop fields, granaries and forests, which are important reservoirs of crop diversity. This loss of crop diversity as well as farmers' seed reserves adversely impacted the availability, affordability and accessibility of nutritious food in affected countries.

In response, the Government of Germany, through the German Federal Ministry of Food and Agriculture, contributed USD 792 950 to the Food and Agriculture Organization of the United Nations (FAO) project OSRO/GLO/980/GER, entitled "Foundations for rebuilding seed systems post-Cyclone Idai: Malawi, Mozambique and Zimbabwe". The project was implemented from September 2019 to December 2022.

The overall goal of the project was to increase the immediate and long-term food security and nutrition of cyclone-affected communities in Malawi, Mozambique and Zimbabwe by improving national and regional planning and coordination, assessing the loss of plant genetic resources, restoring germplasm, and rebuilding and strengthening local seed systems.

The project was implemented in two phases. Phase I was carried out over an approximate one-year period from 23 September 2019 to 31 December 2020. It focused on establishing the ex-ante and post-ante trends and status of local seed systems in Cyclone Idai-affected communities and on strengthening plans, strategies and coordination for the protection of local seed systems in the future.

Phase II was implemented over a two-year period from 1 January 2021 to 31 December 2022. The activities implemented under this phase used the analysis, tools and capacity developed under the first phase of the project to further rebuild and strengthen local seed systems in target communities, including through strengthening reinforcing systems, such as implementation of the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA), also referred to as the International Treaty, and the national and regional policy environment. It also included the multiplication and distribution of suitable seeds, and activities to support communities to sustainably restore, conserve and use plant genetic resources for food and agriculture (PGRFA).

As the two project phases were interlinked and fall under the one OSRO/GLO/908/GER project agreement, this report contains information related to the entire three-year project period. Three amendments were made to the project (two cost extensions to scale up activities and one no-cost extension to carry-over unspent funds and bring all ongoing activities to completion). These are further detailed in the following section, A.3.

The project was implemented with a range of partners at international, regional and national levels. The overall coordination of the project was undertaken by FAO's International Treaty, who worked closely with the national gene banks of Malawi, Mozambique and Zimbabwe, and the Alliance of Bioversity International and CIAT, who were the implementing partners of the project. FAO's emergency team, country and subregional offices and the Southern African Development Community's (SADC) Southern African Plant Genetic Resource Centre (SPGRC) also provided support to the project.

Notwithstanding that the project was implemented largely in the context of the COVID-19 pandemic, the project proved to be an overall success. Among the main achievements of the project are the inclusion of seed system protection and restoration in national and regional strategies, the rescue of crop varieties that were at risk of becoming lost, and the multiplication and distribution of varieties that respond to farmers' needs and preferences, as well as to current and future climate conditions. A total of 1 017 farming households benefited directly from an increased and sustainable supply of preferred varieties of local seed. At the same time, the project strengthened the capacities of 628 stakeholders in Malawi, Mozambique and Zimbabwe to benefit from and contribute to the mechanisms of the International Treaty. Significantly, this led to Mozambique becoming a Contracting Party of the Treaty in December 2020. Furthermore, the participating countries enhanced their National Strategies on Plant Genetic Resources for Food and Agriculture to better manage PGRFA in emergency situations.

A.4 OVERVIEW OF PROJECT AMENDMENTS

Original project agreement

The original project agreement, signed on 23 September 2019, was for USD 385 404 to implement several foundational activities between 23 September 2019 and 29 February 2020.

Amendment #1 – cost extension

On 6 August 2020, the first amendment to the project was issued providing an additional USD 160 599 (bringing the cumulative total project funds to USD 546 003) to scale up existing project activities, as well as position the project to move swiftly into a next phase focused on the rebuilding of seed systems.

Under this amendment a number of activities were modified due to COVID-19-related restrictions on planned travel, field work and meetings. As a result, the project was extended to 31 December 2020.

Amendment #2 – cost extension (phase II)

On 15 June 2021, the second amendment to the project was issued providing an additional USD 246 947 (bringing the cumulative total project funds to USD 792 950) to scale up existing project activities to implement “phase II” activities. The project was extended to 31 May 2022.

Amendment #3 – no-cost extension

On 6 July 2022, a third and final amendment to the project was issued to allow for the balance of funds remaining to be carried over to the following year. The project was subsequently extended to 31 December 2022.

A.5 IMPLEMENTATION ARRANGEMENTS

This was a global project implemented jointly by FAO's International Treaty and the national gene banks of Malawi, Mozambique and Zimbabwe, in close collaboration with farmers, extension services and non-governmental organizations (NGOs). The project aimed to rescue, regenerate and return seed to affected communities and to strengthen national and regional planning for the protection of local seed systems in the future.

FAO's emergency team, country and subregional offices and SPGRC also provided support to the project. The Alliance of Bioversity International and CIAT supported the post-cyclone situational assessments

carried out and the identification of crop varieties for reintroduction in the affected sites. They also provided training, including on resilient seed systems, and identifying and retrieving suitable germplasm.

B. RELEVANCE

B.1 THE PROBLEM

Cyclones Idai and Kenneth were some of the worst tropical cyclones on record to affect Africa and the Southern Hemisphere. The storms, which made landfall in southern Africa in March and April 2019 respectively, destroyed local food production systems. Heavy rains, floods and landslides destroyed crop fields, granaries and forests, all of which were important reserves of local seeds.

The consequences were devastating for farmers, who lost local seed reserves including crop wild relatives and crops ready for harvest. The cyclones and related floods affected more than 3.8 million people in southern Africa and destroyed nearly 800 000 hectares (ha) of crop land in Malawi, Mozambique and Zimbabwe.

The severe loss of these seed reserves and crop diversity meant that affected communities had less food to eat, farm, exchange and sell, impacting people's food security, nutrition and livelihoods, with long term effects.

B.2 THE RESPONSE

The project was the first of its kind for FAO and the International Treaty. It used an innovative approach that brought together communities, researchers and policymakers to address the immediate needs of farmers and develop practices and policies to create lasting change.

To reconstruct the local seed systems in Cyclone Idai-affected countries, there was an urgent need to first assess the extent of the loss of plant genetic resources that had taken place, and to identify what types of crops small-scale farmers were interested in continuing to grow, eat and sell.

The project conducted surveys, focus group discussions, and climate and situational analyses to determine this information. Thereby, ensuring that the right types of seed could be searched for in national, regional and international gene bank collections to then regenerate and return to communities. National gene banks and farmers then collaborated to rescue, regenerate and return seed to affected communities in Malawi, Mozambique and Zimbabwe.

Rebuilding local seed systems is crucial for food security and nutrition, but it is often overlooked in national emergency response and preparedness plans. The project addressed this gap by supporting the national gene banks of Malawi, Mozambique and Zimbabwe to integrate emergency response measures for PGRFA into national strategies, so that countries are better prepared for future emergencies.

The project activities centered around six main areas:

1. strategic planning and coordination;
2. establishing trends and status of local seed systems in cyclone-affected communities;
3. repatriation, distribution, sustainable conservation and use of suitable PGRFA;
4. capacity development for ITPGRFA implementation and PGRFA disaster management;;

5. communication and awareness-raising on the impact of extreme weather events on local seed systems
6. project coordination, regional coordination, monitoring and evaluation, and learning.

The approach was informed by a 2017 study¹ on rebuilding local seed systems in earthquake-affected areas of Nepal. Building on this, the scope of the project was expanded to include aspects of regional and international coordination, policy development, capacity building and awareness raising.

B.3 DONOR CONTRIBUTION

The Government of Germany through the German Federal Ministry of Food and Agriculture (BMEL) contributed USD 792 950 to FAO project OSRO/GLO/908/GER, entitled “Foundations for rebuilding seed systems post-Cyclone Idai: Malawi, Mozambique and Zimbabwe”. The project was implemented from 23 September 2019 to 31 December 2022.

C. ACHIEVEMENT OF RESULTS

C.1 OVERALL

The overall objective of the project was to increase the immediate and long-term food security and nutrition of cyclone-affected communities in Malawi, Mozambique and Zimbabwe by (i) improving national and regional planning and coordination; (ii) assessing the loss of plant genetic resources; (iii) restoring germplasm; and (iv) rebuilding and strengthening local seed systems.

A total of 1 017 households in eight districts in Malawi², Mozambique³ and Zimbabwe⁴ have benefited directly from the project with an increased and sustainable supply of preferred varieties of local seed.

Seed has been produced and distributed through multiplication activities using the genetic resources collected in communities or suitable seed available at gene banks and distributed to target communities in the eight target districts. Multiplication activities, conservation trials, monitoring and Farmer Field School (FFS) activities have taken place and resulted in more than 350 varieties of sorghum, cowpea, yam, pearl millet and other crops multiplied and returned to the target communities.

More than 150 crop varieties were reported as lost by communities through the assessments undertaken, most of which have now been restored. Additionally, around 840 accessions of various crop species have been collected at project sites and are now conserved in the national gene banks of the three countries as an important reserve for the future. In Mozambique, this included the collection of seven rare maize landrace accessions.

¹ [\(PDF\) Process of Rebuilding Local Seed System after 2015 Nepal Earthquake: Rescue Collection, Conservation and Repatriation \(researchgate.net\)](#)

² Mitole and Mbewe in Chikwawa District; Zunde and Nyachilenda in Nsanje District; Mpinda and Tamani in Phalombe District; and Mpokwa and Likangala in Zomba District.

³ Gondola, Macate and Sussundenga districts.

⁴ Chimanimani District in the following wards: Chikukwa (Ward 10), Biriri (Ward 17), Ngorima A (Ward 21), Ngorima B (Ward 22), Chakohwa (Ward 3), and Nyanyadzi (Ward 8).

A total of 628 people⁵ in the three countries, including farmers, agriculture extension agents, researchers and government and NGO representatives, have increased their capacity to manage, conserve and use PGRFA through targeted training on topics such as seed multiplication, PGRFA disaster risk reduction, resilient seed systems, farmers' rights, and national reporting on the implementation of the International Treaty.

Collaboration between farmers and gene banks has been strengthened through 58 participatory meetings held in target communities of Malawi, Mozambique and Zimbabwe, including for baseline interviews, training, and the collection and distribution of seeds.

National strategies and action plans for PGRFA have been developed or updated in all three participating countries to include aspects related to emergency response planning. These have been endorsed through stakeholder consultation processes and submitted to the ministries responsible for agriculture in Malawi and Zimbabwe. A draft strategy has been developed in Mozambique incorporating disaster response elements.

A significant achievement of the project was Mozambique's ratification of the International Treaty in December 2020. The process to enable Mozambique to become a Contracting Party of the International Treaty was supported by the project, including funding a representative to participate in two sessions of the Treaty's Governing Body and the provision of resources and training on Treaty ratification and implementation in Portuguese.

The project strengthened engagement between the three national gene banks and with SPGRC, enabling better regional coordination and harmonization of strategies and plans, particularly regarding the management of PGRFA in emergency situations. As a result of the project, there are plans to incorporate elements of PGRFA disaster response into SADC disaster risk management structures led by SPGRC, such as the establishment of a SADC seed centre that will be responsible for coordinating seed supply issues in the region and will play a role in implementing PGRFA disaster response actions. Regional plans will address the production and registration of farmers' varieties as a key enabler to improve availability, production and conservation of adapted PGRFA in the region.

The increased collaboration between the three participating countries has enabled shared learnings, tools and other resources and the harmonization of national PGRFA strategies.

Awareness of PGRFA issues in disasters has increased through the development of a wide range of communication tools and initiatives developed under the project and disseminated at national, regional and international levels. Highlights include holding side events at the Treaty's Governing Body sessions to raise awareness at an international level, the production of TV and radio programmes, infographics, videos, a podcast, and a "glossy" report.

⁵ Participants of capacity development initiatives were 45 percent women on average for those initiatives where gender disaggregation data was tracked.

D. IMPLEMENTATION OF WORK PLAN

The results achieved under the project are further detailed under the six main activity areas as shown in the far-left column (highlighted) in Table 1. This column shows the combined main activity areas of the two phases of the project.

Table 1: Combined activity areas

Phase 1 activity areas (Original + Amendment #1)	Phase 2 activity areas (Amendment #2)	Combined activity areas (Phases 1 and 2)
Strategic planning and coordination	Institutionalization/sensitization of strategies and plans	Strategic planning and coordination
Establishing trends and status of local seed systems in Cyclone Idai-affected communities		Establishing trends and status of local seed systems in Cyclone Idai-affected communities
Distribution of maize, small grains and beans	Repatriation, distribution, sustainable conservation, and use of suitable PGRFA	Repatriation, distribution, sustainable conservation, and use of suitable PGRFA
Capacity development on ITPGRFA implementation	Capacity building on Treaty implementation and PGRFA disaster management	Capacity development on Treaty implementation and PGRFA disaster management
Communication		Communication and awareness-raising on the impact of extreme weather events on local seed systems
Project coordination, monitoring, evaluation and reporting	Regional coordination and learning	Project coordination, regional coordination, monitoring, evaluation and learning

The results achieved are presented against the agreed activities of the project in the tables below.

Agreed activities

The agreed activities were derived from various project documents, including the original project documents and the subsequent documents agreed through the amendments granted, including Phase 2 activities. As there was no singular activity plan over the course of the project, references to the document where the activity has been sourced from are footnoted. Where there was duplication or repetition, activities have been merged or summarized.

Results achieved

The results listed are largely sourced from the reports of project partners, as well as other reports, documents and products produced through the project. As a multi-country project there is extensive information sitting beneath the results reported. For the purpose of this report, the results presented are aggregated and summarized.

Activity area 1: Strategic planning and coordination	
Planned activities	Results achieved
Supporting the development of national level Cyclone Idai response strategies for the reconstruction of local seed systems in Mozambique and Malawi, and in harmony with existing national PGRFA strategies, and a regional level response strategy ^{Error! Bookmark not defined.}	<ol style="list-style-type: none"> 1.1. National strategies and action plans for PGRFA have been developed or updated in all three countries to include aspects related to emergency response planning. 1.2. In Malawi and Zimbabwe, the strategies and plans have been endorsed through stakeholder consultation processes and submitted to the ministries responsible for agriculture for formal approval. 1.3. In Zimbabwe, the strategies have been approved and published. 1.4. In Mozambique, a draft national strategy has been developed, incorporating disaster response elements. 1.5. The project also supported the development of a regional level strategy, the plans for which were presented by the SADC Plant Genetic Resources Centre (SPGRC) at a regional strategy harmonization workshop organized under the project in Mozambique in 2022 (see results 6.8 – 6.10).
Establishing and convening national-level Cyclone Idai PGRFA coordination mechanisms for Malawi and Mozambique ^{Error! Bookmark not defined.}	<ol style="list-style-type: none"> 1.6. National coordination mechanisms were established and stakeholder meetings conducted in all three countries to facilitate the development, updating and drafting of the strategies.
Establishing and convening regional-level Cyclone Idai PGRFA coordination mechanisms for Zimbabwe, Malawi and Mozambique ⁶	<ol style="list-style-type: none"> 1.7. Regional coordination was integrated into SPGRC coordination meetings. SPGRC works with national plant genetic resources centres in each of the SADC member states to coordinate collection, conservation and utilization of plant genetic diversity and variability in southern Africa. Project coordinators attended SADC coordination meetings and presented project plans. The project also featured in an SPGRC newsletter. 1.8. Additionally, a coordination mechanism was established between the three project partners and the Treaty Secretariat, taking the form of regular virtual coordination meetings over the entire project period.

⁶ Subactivity under Activity 1 of the original project document.

Activity area 2: Establishing trends and status of local seed systems in Cyclone Idai-affected communities	
Planned activities	Results achieved
Establishing the pre-cyclone PGRFA status (secondary data sources to be consulted) ⁷	<p>2.1. A report was produced (see result 2.10) containing a synthesis of the post-cyclone situational assessments carried out in the three countries by national partners that documented the extent of the loss of plant genetic resources, the PGRFA needs and preferences expressed by communities, pre-cyclone PGRFA status, climate data and situational analysis at project sites in the three countries.</p> <p>2.2. In Malawi, the cyclones affected 15 districts and a total of 975 600 people. The Malawi Plant Genetic Resources Centre conducted a survey in four of the 15 most affected districts (randomly selected) to assess the impact of the cyclones in greater depth. Three of the four districts – Chikwawa, Nsanje and Phalombe – were particularly badly hit, while the fourth, Zomba, was less affected. Crops which faced major drawbacks in terms of seed availability included pigeon pea, sorghum, cowpea, millet, as well as root and tubers, such as yam.</p> <p>2.3. Mozambique was most heavily affected by the cyclones and significant losses of varieties were reported. It was noted that in the immediate aftermath of the cyclones the presence of native fruits, such as Maroro and Matamba, played an important role in combating food insecurity. The project identified sites in the Sussundega, Gondola and Macate districts for activity implementation. Due to the significant losses incurred in these areas, communities requested the urgent reintroduction of crops and emphasized good taste and pest-resistance as key preferences. From the crop varieties that were identified as important for food security, it was decided to focus on cowpea and sorghum. The survey results also indicated a lack of technical knowledge for the multiplication of local seeds at community level, which was addressed in the project by providing a technical seed management training.</p> <p>2.4. In Zimbabwe, the cyclones caused excessive damage in Chimanimani District in the eastern part of the country where floods and landslides occurred, resulting in crops being wiped out which were near ready to harvest. Assessments were conducted in six wards (Biriiri, Chakohwa, Chikukwa, Ngorima A, Ngorima B and Nyanyadzi) and revealed a significant impact on local seed systems. Overall, the diversity of major</p>

⁷ Subactivity under Activity 2 of the original project document

	<p>field crops was not heavily affected, however seed quantities dropped significantly and local seed supply for most local and indigenous crops was severely impacted. Based on the situational analysis and consultation with national partners, cowpea, groundnut, sorghum and sweet potato were shortlisted as priority crops. Data indicated that some varieties have disappeared altogether, although this trend is likely to have commenced before the cyclone. These include varieties of maize, sorghum, sugar bean, pearl millet, yam and banana.</p>
<p>Developing tools for rapid assessment^{Error! Bookmark not defined.}</p>	<p>2.5. Rapid assessment and field data collection data tools were developed jointly between the three countries at a project inception meeting held in Cape Town in 2019 (see 6.1 – 6.4). Through this process draft rapid assessment questionnaires and focus group discussion checklists were developed. Countries then used these tools as a basis to adapt to their local context, which was a process undertaken through working groups and national stakeholder meetings where the tools were finalized.</p>
<p>PGRFA rapid assessments^{Error! Bookmark not defined.}</p>	<p>2.6. Survey teams were formed and enumerators trained in the three countries on the tools and process developed.</p> <p>2.7. PGRFA rapid assessments were undertaken in project areas of the three countries with the aim of establishing the status of the existing response mechanisms and the impact of the cyclones on crop diversity in the affected communities.</p> <p>2.8. The results of the rapid assessments are reported under 2.1 – 2.4 and also informed 2.10.</p>
<p>Mapping and documenting sources of seed for reconstruction programme suitable for affected areas^{Error! Bookmark not defined.}</p>	<p>2.9. Analysis was undertaken on climate data and farmer preferences to explore possible matching germplasm from international, regional and national collections that could be mobilized relatively quickly and tested in cyclone-affected communities in the future. As part of this process, historical weather data for all target sites in the three countries, covering the period 2006–2021 were sourced from a Where Weather App.</p> <p>2.10. A report was produced by Bioversity International containing: (i) a synthesis of the post-cyclone situational assessments carried out in the three countries by national partners; (ii) based on these assessment and interactions with national partners, a list of the priority sites and crops for restoration efforts; (iii) based on a methodology developed by Bioversity International, identified sets of potentially useful crop varieties that could be used for introducing in the priority sites in an effort to restore and strengthen crop diversity; and (iv) an outline of the next steps.</p>

	<p>2.11. Cowpea and sorghum were prioritized for restoration in all three countries. These are important resilient crops that contribute to food security in the three countries. Based on climate profiling and GIS-based modelling, potential accessions were selected for present climate conditions based on matching temperature, precipitation and seasonality. These accessions were identified from international collections of germplasm held at various national and international gene banks including CGIAR gene banks from Genesys⁸ database (available at: https://www.genesys-pgr.org/content/about/about) for seven reference points in the three countries.</p>
<p>Rescue collection (includes crop seeds, wild fruits and crop wild relatives) <small>Error! Bookmark not defined.</small></p>	<p>2.12. In Malawi, 201 accessions were collected, 98 of which have been duplicated to the regional genebank for southern Africa in Zambia.</p> <p>2.13. In Mozambique, four local maize varieties (Raposta, Maguenda, Cangeri, Chinhamuana) and two sorghum varieties (Djenatchena and Guenguere) reported as being lost due to the effects of Cyclone Idai were rescued. An additional seven rare maize landrace accessions were also collected during the rescue mission.</p> <p>2.14. In Zimbabwe, varieties of Bambara groundnut (80), common bean (31), cowpea (159), finger millet (30) and sorghum (200) were collected and conserved at national level.</p>

Activity area 3: Repatriation, distribution, sustainable conservation and use of suitable PGRFA	
Planned activities	Results achieved
<p>Identification, multiplication and distribution of suitable seed⁹</p>	<p>3.1. Seed was produced and distributed through multiplication activities using the genetic resources collected in communities or available at gene banks and distributed to target communities. In Zimbabwe, multiplication and distribution activities were scaled up with additional funding made available through the project.</p> <p>3.2. In Malawi, 2.5 tonnes of local seed were multiplied and 5 kg packs distributed to communities in the four districts, benefitting 500 farming families. The project managed the multiplication of 65 accessions of varieties of cowpea (20), finger millet (18), sorghum (15) and pigeon peas (12) and distributed them to farmers as part of efforts to restore the lost germplasm in the affected areas.</p>

⁸ Genesys is a database, which allows users to explore the world's crop diversity conserved in genebanks through a single website <https://www.genesys-pgr.org/content/about/about>.

⁹ Subactivity listed under activity 3 of the updated workplan agreed through Amendment #1.

	<p>3.3. In Mozambique, a total of 200 kg of quality seeds were produced in the first and second phases out of which 195 kg were distributed to two district-level farmers' associations with majority female membership, benefiting 117 households, and the remaining seeds were sent to the zonal centre and the national gene bank.</p> <p>3.4. In Zimbabwe, crop accessions were identified from the national gene bank, most of which were originally from Chimanimani and nearby areas. Selection of the materials was informed by the crops that farmers indicated needed to be restored through the rapid assessment study. The genetic materials comprised of numerous varieties, including 174 cowpea, 92 Bambara nut, 78 bean accessions, 30 finger millet, 12 beans and 200 sorghum. The seed was distributed in the form of seed packs comprising of between 16 and 23 accessions in total of beans, Bambara nut, cowpea and finger millet to 30 identified lead farmers from the six wards of Chimanimani district (five farmers were selected from each ward), benefiting 300 farmers.</p>
<p>Monitoring crop production, trials^{Error! Bookmark not defined.} and integration of conservation and utilization of local germplasm in Farmer Field Schools¹⁰</p>	<p>3.5. Once seed was obtained, it was evaluated (on-station), monitored and then multiplied for evaluation in farmers' fields, supported by FFSs.</p> <p>3.6. In Malawi, a key achievement reported was the integration of PGRFA issues in the existing FFSs in all the affected districts. As a pilot initiative, one FFS was selected per district and demonstrations of local crops (such as sorghum, finger millet and cowpea) were carried out for farmers to learn. Each FFS had 25 farmers (40 percent of whom were women and 35 percent youth). FFSs are recognized as a tool in the National Extension Policy, and as such, this initiative contributed to greater awareness on PGRFA at community levels in Malawi.</p> <p>3.7. In Mozambique, farm multiplication trials were established through FFSs in the cyclone-affected areas. Two on-farm multiplication fields containing six selected accessions of local maize varieties were established where trials were undertaken and local PGRFA used and conserved.</p> <p>3.8. In Zimbabwe, the gene bank established the multiplication and regeneration on-station of 54 accessions of maize and 72 accessions of finger millet to support the on-farm multiplication.</p>
<p>Repatriation of suitable germplasm from international and regional gene banks¹⁰</p>	<p>3.9. A process was carried out through the genesis database to identify international and regional gene banks holding suitable materials, based on the analysis undertaken through the project. At a regional level, collections of ICRISAT in Zimbabwe</p>

¹⁰ Subactivity listed under activity 1 of the Phase II workplan as agreed through Amendment #2.

	<p>(sorghum) and IITA in Nigeria (cowpea) were also explored to identify suitable crop lines for groundnut and sweet potato.</p> <p>3.10. However, the national gene banks did not submit any requests for germplasm from international or regional collections. The project review/lessons learned exercise reported under result 5.3, indicated that this was because sufficient suitable germplasm was available in national collections to multiply and distribute to target communities. It also indicated that COVID-19 was a deterrent for making these requests given the extended period of time anticipated to receive germplasm from such collections.</p> <p>3.11. The Alliance of Bioversity International and CIAT provided training to project partners on these issues as reported under 4.8 and 4.9. The Treaty is continuing to support the national gene banks to access international collections, as needed.</p>
Develop and operationalize community-led strategies for restoring local germplasm ¹⁰	<p>3.12. Drawing on lessons learned from East Asia (see result 6.3) and between the three countries, in Malawi, community-led conservation strategies were compiled and piloted in the affected districts. Communities were trained on conservation strategies including biodiversity registers, community seed banks and biodiversity gardens.</p> <p>3.13. In Zimbabwe, 107 farmers (of whom about 40 percent were women) were trained on aspects of seed multiplication and disaster mitigation strategies developed from six wards (3, 8, 10, 17, 21 and 22) of Chimanimani District. The training focused on how communities can leverage local resources, mainly local crop genetic diversity when recovering from disasters such as Cyclone Idai.</p> <p>3.14. In Mozambique, this activity was not completed due to COVID-19 restrictions that limited travel to the field and the slower pace in developing the national strategy, which the local level strategies connected to.</p>

Activity area 4: Capacity building on Treaty implementation and PGRFA disaster management	
Planned activities	Results achieved
Publications and products/tools to support Treaty implementation ^{Error! Bookmark not defined.}	4.1. The national gene banks of Malawi, Mozambique and Zimbabwe in partnership with the African Center for Biodiversity submitted a case study on the experiences and lessons learned in implementing farmers' rights through the Cyclone Idai project. This was a contribution to the global inventory of measures and best practices for implementation of farmers' rights which was conducted by the ITPGRFA Secretariat

	<p>and the Expert group on Farmers’ Rights of the Treaty. The case study is published on the Treaty website https://www.fao.org/plant-treaty/areas-of-work/farmers-rights/inventory-on-frs/news-detail/en/c/823926/</p> <p>4.2. Various Treaty tools have been translated into Portuguese and disseminated to stakeholders in Mozambique, including the standard reporting template and a number of general Treaty implementation educational presentations.</p> <p>4.3. See also products/tools reported under results 5.6, 5.8 and 5.9.</p>
Two capacity building and policy guidance workshops <small>Error! Bookmark not defined.</small>	<p>4.4. Two virtual regional Treaty capacity building workshops were held in early-April 2021. A total of 124 people participated from across the three countries and at regional and international levels. Portuguese interpretation was provided for participants joining from Mozambique.</p> <p>4.5. The first virtual workshop “Rescuing, restoring and protecting seed systems in emergencies: enhancing national and regional strategies in southern Africa” (attended by 78 participants) took place on 8 April 2021 and was opened by the Secretary of the ITPGRFA. It included presentations and discussions on the draft national strategies that had been developed under the project and identified the next steps for their further development and harmonization.</p> <p>4.6. The second virtual workshop “International Plant Treaty: implementation, reporting and farmers’ rights”(attended by 46 participants) was held on 12 April 2021. It included training on farmers’ rights and national reporting in the Treaty.</p>
Development of additional innovative communication tool to reinforce Treaty capacity building ¹¹	4.7. (See result 5.5)
Modular training programme on resilient seed systems methodology, including ITPGRFA ¹²	4.8. A regional modular training programme on resilient seed systems, including aspects related to implementing the ITPGRFA was delivered by the Alliance of Bioversity International and CIAT (see also result 6.7) in Malawi. Project partners (38 people) were trained using a methodology that combines participatory tools with climate and crop modeling tools, whose application can be used to design strategies to access and use crops and crop varieties more effectively. This enabled the participants (researchers, gene bank managers and farmers) to attempt to gain access to potentially useful plant genetic resources through the multilateral system of the

¹¹ Subactivity listed under activity 4 of the updated workplan as agreed through Amendment #1.

¹² Subactivity listed under activity 2 of the Phase II workplan as agreed through Amendment #2.

	<p>ITPGRFA. Twenty farmers were also trained on assessing available crop diversity in the community and on establishing community seed banks (see 6.7).</p> <p>4.9. Participants were trained on:</p> <ul style="list-style-type: none"> • introduction to resilient seed systems; • climate change analysis and identification of germplasm; • germplasm acquisition; • field-testing; • seed production and distribution; • germplasm conservation; • participatory evaluation; and • knowledge sharing and communication. <p>4.10. Two field visits to project communities in Malawi were conducted as part of the training. One included a practical exercise with farmers on trait identification and ranking of crops/varieties based on key variables (e.g., capacity to tolerate heat/drought/strong winds). The second field visit focused on conservation of agrobiodiversity, trends, threats and opportunities using a five-cell analysis tool with farmers.</p>
Capacity building on Treaty implementation ¹²	<p>4.11. A session was held as part of the project inception workshop to identify the capacity needs of the project countries in relation to Treaty implementation. The following priority areas were identified and targeted capacity building initiatives delivered accordingly:</p> <ul style="list-style-type: none"> • ratification support (Mozambique) • farmer’s rights and • compliance reporting. <p>4.12. Support to Mozambique to take forward ratification of the Treaty was provided, including supporting a representative from Mozambique to participate in the Eighth Session of the Governing Body (see result 6.11). The country’s ratification efforts accelerated during the project period and in October 2020, FAO received Mozambique’s ITPGRFA instrument of ratification. The country became a full Contracting Party of the Treaty in December 2020. The participation of Mozambique in the Eighth Session of the Governing Body (GB-8) was a catalyst for the country moving forward with the ratification of the Treaty. Three representatives (one from each project country) were supported to participate in GB-8 (Italy) and GB-9 (India) as reported under 6.11 as part of capacity development for Treaty implementation.</p>

	<p>4.13. As reported under result 4.4, targeted capacity building was delivered on farmers' rights and compliance issues.</p> <p>4.14. In Zimbabwe, 143 people, including extension agents and other government stakeholders, NGOs and development partners, were reached through inception meetings, capacity building workshops, field days and trainings.</p> <p>4.15. In Malawi, 73 lead farmers, 12 agriculture extension officers and 8 research technicians were reached through various capacity development initiatives relevant to Treaty implementation.</p>
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Activity area 5: Communication and awareness-raising on the impact of extreme weather events on local seed systems	
Planned activities	Results achieved
Raising awareness on assessing and addressing biodiversity loss of PGRFA in disaster contexts and on PGFRA strategies/action plans at community, national, regional and international levels ¹³	<p>5.1. The project was featured on global platforms and by news outlets, including through an article in the newsletter of Welthungerhilfe (https://www.welthungerhilfe.de/welternaehrung/rubriken/klima-ressourcen/lokales-saatgut-ueber-naturkatastrophen-retten/) and publication of articles on the FAO and Treaty webpages (http://www.fao.org/plant-treaty/news/news-detail/en/c/1305962/ and http://www.fao.org/emergencies/fao-in-action/stories/stories-detail/en/c/1301895/).</p> <p>5.2. At national levels, all three countries produced and disseminated communication products to raise awareness on PGFRA strategies/action plans. Activities delivered included television broadcasts, web articles, field days and national workshops.</p>
Lessons learned knowledge product ¹⁵	<p>5.3. A lessons-learned virtual workshop took place with project partners and the Treaty Secretariat. The key lessons learned from the project were documented and shared with project partners and have informed the development of the Treaty's other emergency projects.</p> <p>5.4. An infographic has been developed (see result 5.7) in consultation with project partners based on lessons learned and provides a summary of steps to be taken following disasters, both to conserve the seed diversity that is left or at risk of</p>

¹³ General activity mentioned under Activity 5 of the original project document and subactivity listed under Activity 2 of the Phase II workplan as agreed through Amendment #2.

	<p>disappearing and to find and retrieve new suitable planting materials for farming communities.</p> <p>5.5. Furthermore, in May 2023, the Treaty’s Funding Committee welcomed the proposal of the Treaty and the Global Crop Diversity Trust to undertake a lessons learned exercise based upon the experiences of the Cyclone Idai emergency project and others to further inform the operations of the Treaty and Trust’s joint Emergency Reserve, and to responses to emergency disaster situations affecting PGRFA more generally. This is expected to take place in early 2024.</p>
"Treaty talks" podcast ¹⁴	<p>5.6. A podcast (https://bit.ly/Treaty-Talks-Ep1) on Farmers’ Rights served as a capacity development tool for both International Treaty implementation and raising visibility of the project. It was promoted at international, regional and project country level and reached an estimated 40 people.</p>
Final glossy project publication ¹⁴	<p>5.7. A 36-page glossy publication was produced towards the end of the project and is attached as an Annex to the report.</p>
Communication products for GB-9 side event: one poster and one video on seed systems in disaster contexts ¹⁴	<p>5.8. A series of posters were produced and disseminated at Ninth Session of the Governing Body (GB-9). An infographic was also produced “Rescuing, restoring and protecting seed systems in emergencies” https://youtu.be/RxO28TQmfl.</p> <p>5.9. A video on seed systems in disaster contexts was produced and screened at GB-9 which was attended by over 700 people and shared by FAO on social media: https://www.fao.org/3/cb7949en/cb7949en.pd. At the time of writing it had been viewed over 450 times.</p>
Facilitators' and farmers' "Resilient Seed Systems" training handbook produced in English and Portuguese ¹⁴	<p>5.10. Bioversity International’s facilitators' and farmers' "Resilient Seed Systems" training handbook was produced in English and disseminated to project partners.</p> <p>5.11. The Portuguese version was intended for distribution in Mozambique; however, it was not produced as the FAO Country Office in Mozambique already had a community seed bank product in place which they preferred to use and distribute in Mozambique.</p>

¹⁴ Sub-activity listed under activity 4 of the updated Phase II workplan as agreed through Amendment #3

Activity area 6: Project coordination, regional coordination, monitoring, evaluation and learning	
Planned activities	Results achieved
Project inception workshop ¹⁵	<p>6.1. A four-day project inception meeting was organized in Cape Town from 28 to 31 October 2019. A total of 22 people participated from national gene banks and the FAO country offices in Malawi, Mozambique, Zimbabwe, as well as representatives from the FAO Subregional Office in Southern Africa and the Plant Treaty.</p> <p>6.2. At this meeting, project plans, tools and approaches were developed and harmonized for baseline assessments, and national and regional strategy development.</p> <p>6.3. A representative from the Nepal Agricultural Research Council participated virtually, presenting a study, entitled “Rebuilding Local Seed System after 2015 Nepal Earthquake: Rescue Collection, Conservation and Repatriation”, and lessons learned to inform the plans under the Cyclone Idai project.</p> <p>6.4. The inception meeting proved to be extremely valuable to the successful implementation of the project, especially because it was the first and only face-to-face meeting that could be held between project partners during the 2019–2022 period due to the onset of COVID-19 in early 2020.</p>
Regional monitoring and coordination ¹⁶	<p>6.5. Regular project monitoring and coordination took place in collaboration between the Treaty, national gene banks and FAO regional and national offices as reported under results 1.6, 1.7, 6.1, 6.8 and 6.9.</p> <p>6.6. Furthermore, progress was monitored through a reporting cycle established through Letters of Agreement with the key partners of the project, who submitted project reports at regular intervals, as well as through the provision of reports and updates to the resource partner.</p>
Regional in-person meeting Malawi ¹⁶	<p>6.7. The Malawi Plant Genetic Resources Centre, under the Department of Agriculture Research Services in Malawi, hosted a four-day regional training workshop from 14 to 17 June 2022 with 38 participants, of whom 20 women. The training was organized as part of the Cyclone Idai project implemented in Malawi, Mozambique and Zimbabwe and was designed and facilitated by the Alliance of Bioversity International and CIAT. It focused on “Developing Resilient Seed Systems.” The training was delivered through two classroom work and practical field sessions in a</p>

¹⁵ General activity mentioned under Activity 6 of the original project document

¹⁶ Subactivity listed under Activity 4 of the Phase II workplan as agreed through Amendment #2.

	<p>community in Mwankhundi Village, Traditional Authority Chisamba in Salima District. The field session involved training of 20 farmers (of whom 11 women) and focused on assessing available crop diversity in the community and on establishing community seed banks. The exercise involved dividing the farmers into groups based on gender to ensure the preferences and perspectives of women were obtained. It was attended by participants from Malawi, Mozambique, Zimbabwe¹⁷ and the International Treaty. Also see results 4.8–4.10.</p>
<p>Regional in-person meeting and learning exchange Mozambique ¹⁶</p>	<p>6.8. A regional in-person workshop on harmonization of national strategies on PGRFA in Malawi, Mozambique and Zimbabwe was held between 23 and 27 August 2022 in Maputo, Mozambique. The workshop was organized by the gene banks of Mozambique in collaboration with the national gene banks of Malawi and Zimbabwe with technical support from the Secretariat of the ITPGRFA.</p> <p>6.9. The event was attended by 35 participants representing the Ministry of Agriculture and Rural Development, Ministry of Land and Environment, Ministry of Science, Technology and Higher Education, Eduardo Mondlane University, Agriculture Research Institute, Laboratory of Biotechnology , Gene banks, Early Warning Disaster Management, Centre of Socio-economic Studies, National Farmers’ Association, representatives from Malawi, Zimbabwe and SADC Plant Genetic Resources Centre as well as from the Secretariat of ITPGRFA.</p> <p>6.10. A number of priorities were identified at the meeting and discussed as part of the exit strategy for the project, including:</p> <ul style="list-style-type: none"> • How farmers’ varieties are recognized. • How PGRFA issues can be mainstreamed into disaster risk plans (national, regional and international levels). • How to develop and disseminate standard assessment tools at a regional level. • What the opportunities are for universities/research institutions and gene banks to work together. • How to implement the strategies developed under the project – legal frameworks, resource mobilization and communication.

¹⁷ Activity deferred to phase II listed under Activity 4 of the updated workplan as agreed through Amendment #3.

Participation in GB-8 ¹⁸ and GB-9 ¹⁹	6.11. One representative from each of the three project countries were supported to participate in two sessions of the Treaty’s Governing Body (total of six people): GB-8 in November 2019 in Rome, Italy, and GB-9 in October 2022 in Delhi, India.
Side events at GB-8 and GB-9 ¹⁹	<p>6.12. Two side events were organized at GB-8 and GB-9 of the Governing Body of the International Treaty that featured the Cyclone Idai project.</p> <p>6.13. The GB-8 side event “<i>Cyclone Idai: Regional PGRFA Response Strategy and Reconstruction of Local Seed Systems in Zimbabwe, Malawi and Mozambique</i>” was held at the beginning of the project, on 13 November 2019 in Rome, Italy. It highlighted the key issues arising from Cyclone Idai impacting local seed systems in Malawi, Mozambique and Zimbabwe and how the project would address them.</p> <p>6.14. The GB-9 side event “<i>Safeguarding Crop Diversity in an Unpredictable World</i>” was held on 19 September 2022 in Delhi, India and featured a panel discussion on the response of and lessons learned from the Cyclone Idai project.</p> <p>6.15. The events were attended by approximately 100 people in total and raised awareness of the impact of extreme weather events on PGRFA and local seed systems and of the Government of Germany-funded Cyclone Idai project.</p>

¹⁸ Activity listed under Activity 5 of the workplan contained in the original project document.

¹⁹ Activity listed under Activity 4 of the updated workplan as agreed through Amendment #3.

E. FOLLOW-UP ACTIONS

A number of follow-up actions were identified to reinforce and leverage the work that has been undertaken:

1. Undertake analysis on how farmers' varieties are recognized including in national and regional strategies.
2. Take the project results and learnings to scale by replicating similar initiatives in other countries and regions.
3. Produce and disseminate the standard assessment tools developed under the project within the region and more widely.
4. Support countries to implement the strategies developed, including giving attention to legal frameworks, resource mobilization and communication matters.
5. Transition coordination to SPGRC and consider supporting a regional PGRFA practitioners' event to build on the collaboration developed under the project and disseminate learnings to a wider audience.