

SAVING
LIVES
CHANGING
LIVES



The Integrated Risk Management Programme (IRMP)

LESSONS FROM MALAWI



Cover picture:

Estelle makes her own compost manure to fertilize her degraded land instead of buying and only using fertilizers

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In May 2018, **Benoit Thiry**, WFP Malawi Country Director, delivered a speech at weather-index insurance payout ceremony in Blantyre. This was the first time that a weather index insurance programme has directly delivered pay-outs at such a large scale in Malawi, breaking new ground in climate risk management.

Foreword

In recent decades, Malawi has been experiencing adverse climatic shocks as most rural farmers still heavily rely on rain-fed agriculture. People's livelihoods have been disrupted in the process fueling the vicious cycle of hunger.

The World Food Programme, with support from the Government of Flanders, is implementing an Integrated Risk Management Programme, reaching over 40,000 smallholder farmers with a wide range of climate-smart interventions.

When people have access to quality and timely agro-advisories, and have the ability to get a buffer against climate shocks with crop insurance or savings, they are building a healthier future for their families and communities.

This approach – when combined and integrated with other interventions – has the potential to be scaled up by the Government of Malawi to provide a pathway out of poverty and transitioning farmers away from subsistence agriculture to surplus producing.

Evidently, we cannot do it alone and we are grateful for the support of the Government of Flanders. Moving forward, WFP Malawi is committed to enhance synergies between programmes while increasing Government capacity and ownership to lead in the design, implementation, and monitoring of integrated resilience-building programmes.

Despite these trying times, we remain steadfast on our quest to achieve Zero Hunger, and dedicated to establish strong partnerships towards achieving the Sustainable Development Goals in Malawi.



Benoit Thiry
WFP Malawi Country Director



Hastings James a member of Chigojo farmers group, which is also a radio listening club, and a VSL member. Thanks to the seasonal forecasts he was getting from the radio he planted early maturing maize variety which boosted his yield. In 2020, he is expected to harvest 50 bags of 50kg of maize compared to an average 20 bags before joining the programme.

Preface

The Government of Flanders has supported WFPs development projects and country programmes in Malawi since 2005.

In line with its priorities, the cooperation of Flanders has been directed towards long term food security and agriculture, health and combating HIV/AIDS, education, sustainable business and sustainable trade. In recent years, WFP could count concretely on Flanders valuable support to activities such addressing food insecurity, strengthening farmer organisations and financing mobile Vulnerability Assessment Monitoring (mVAM).

In 2016, Flanders decided to support the upscaling of the Integrated Risk Management Project that WFP was implementing in Malawi. The Government of Flanders considers that climate change is a factor that will increase inequality in the world. Therefore, it is committed to offer financial and technical support to developing countries to enhance their resilience to the consequences of climate change in their community with a specific focus on building resilience in the sectors of agriculture, job creation, disaster prevention and health.



Mary Hamilton is a IRMP beneficiary in Malawi. Since she joined, her life has dramatically changed. She has bought a new house, sells veggies at the market and bought bicycles. She is raising trees and building check dams with her community pairs.



Samuel Lupiya and his wife, Nefy, are both working hard to protect the environment and have better harvest, thanks to an irrigation system.

"Last year, I planted tomatoes in an irrigated field and made about 100,000 Malawian Kwacha (USD 140) profit," says Samuel.

"I see the improvement in my children. They look healthier. Now we can plan for the future because we don't have to worry each day about what to put on the table," adds Nefy.

1. Introduction

The IRMP within the context of Malawi

With support from the Flemish Government of a total of 2.5 million EUR, WFP Malawi has led the Integrated Risk Management Programme (IRMP), which is a three-year project (2017-2019) implemented in three districts of the southern region of Malawi.

Over the last two decades, Malawi has increasingly been affected by the impacts of more frequent extreme weather events as a result of climate variability and climate change. With livelihoods dependent on rain-fed agriculture¹ and a decreasing natural resource base, the population is highly vulnerable to climate variability and climate change, and food insecurity.

Despite significant development efforts, half of Malawians still live below the national poverty line. In addition, the country has a complex food and nutrition situation with persistent annual food shortages as a result of recurrent seasonal dry spells and flooding episodes derived from El Niño and La Niña, respectively, observed in consecutive bad years. In particular, the southern region of the country has been worst hit with significant delays in the onset of the planting rains and sporadic and prolonged dry spells affecting the region through the crop development period.

The overall objective of the IRMP initiative is to reduce food, nutrition and income insecurity among vulnerable smallholder households in the context of increasing climatic risks and climate variability in three specific districts of southern Malawi: Chikwawa, Blantyre Rural and Mangochi (as shown in figure 1), targeting a total of 40,000 households.

Figure 1
Map of Malawi with the IRMP districts



1. In Malawi, agriculture accounts for approximately 28 percent of the gross domestic product (GDP) and employs 64.1 percent of the country's workforce.

For smallholder farmers whose livelihoods are dependent on rain-fed agriculture, and climate shocks such as prolonged dry spells and floods becoming more frequent and unpredictable, this poses significant and sometimes life-threatening difficulties. Therefore, **improving access to timely and tailored climate and weather information for vulnerable, food insecure communities to strengthen their capacities accompanied by actionable advice is key to deal with the weather and climate uncertainty.** This, in turn, can **inform their decisions on agriculture, food security and livelihoods, contributing to the adoption of new technologies, improved inputs and new cultivation practices** on the farm. In addition, expanding access to risk management mechanisms and strengthening safety nets to cope with climate hazards as well as promoting and facilitating access to financial services can help strengthen their capacities to invest and diversify their livelihoods, making them more productive and climate resilient.

The **IRMP** project builds on decades of experience that WFP has in food and nutrition security and resilience-building programmes in the country, as well as experience since 2014 in implementing climate services and integrated risk management schemes in Malawi under two global programmes known as Global Framework for Climate Services (GFCS) Adaptation Programme for Africa² and the R4 Rural Resilience Initiative.³ It also builds on the existing Food Assistance For Assets (FFA)⁴ programme in the three target districts.

Amongst the main aims behind IRMP was the scaling up to additional districts of the last mile climate services undertaken under the GFCS interventions through an integrated risk management approach.

IRMP's **integrated risk management approach** combines three main activities:

- i) **Strengthen access to timely and tailored climate and weather information through the development of climate service**
- ii) **Mitigate risk through asset creation and weather index-based micro-insurance coverage**
- iii) Improve **access to financial services** through micro credit and savings

Integration of these activities followed a phased approach,⁵ both in terms of geographical targeting and different project components implemented to ensure greater benefits for vulnerable communities. Partnerships were key in ensuring IRMP success and WFP worked with key government stakeholders, NGOs and private sector partners.

IRMP is fully aligned with relevant national policies and strategies on climate change, disaster risk management, agriculture, social protection and resilience. An important outcome of the initiative has been to inform the country's national policies, strategies and planning such as the National Adaptation Plans (NAP), Agriculture Sector Wide Approach (ASWAp) and contribute to the development of the National Framework on Climate Services, among other policy processes and programmes underway.

Table 1 below provides an overview of the main achievements to date within the IRMP programme in the districts of Blantyre Rural, Mangochi and Chikwawa in Southern Malawi.

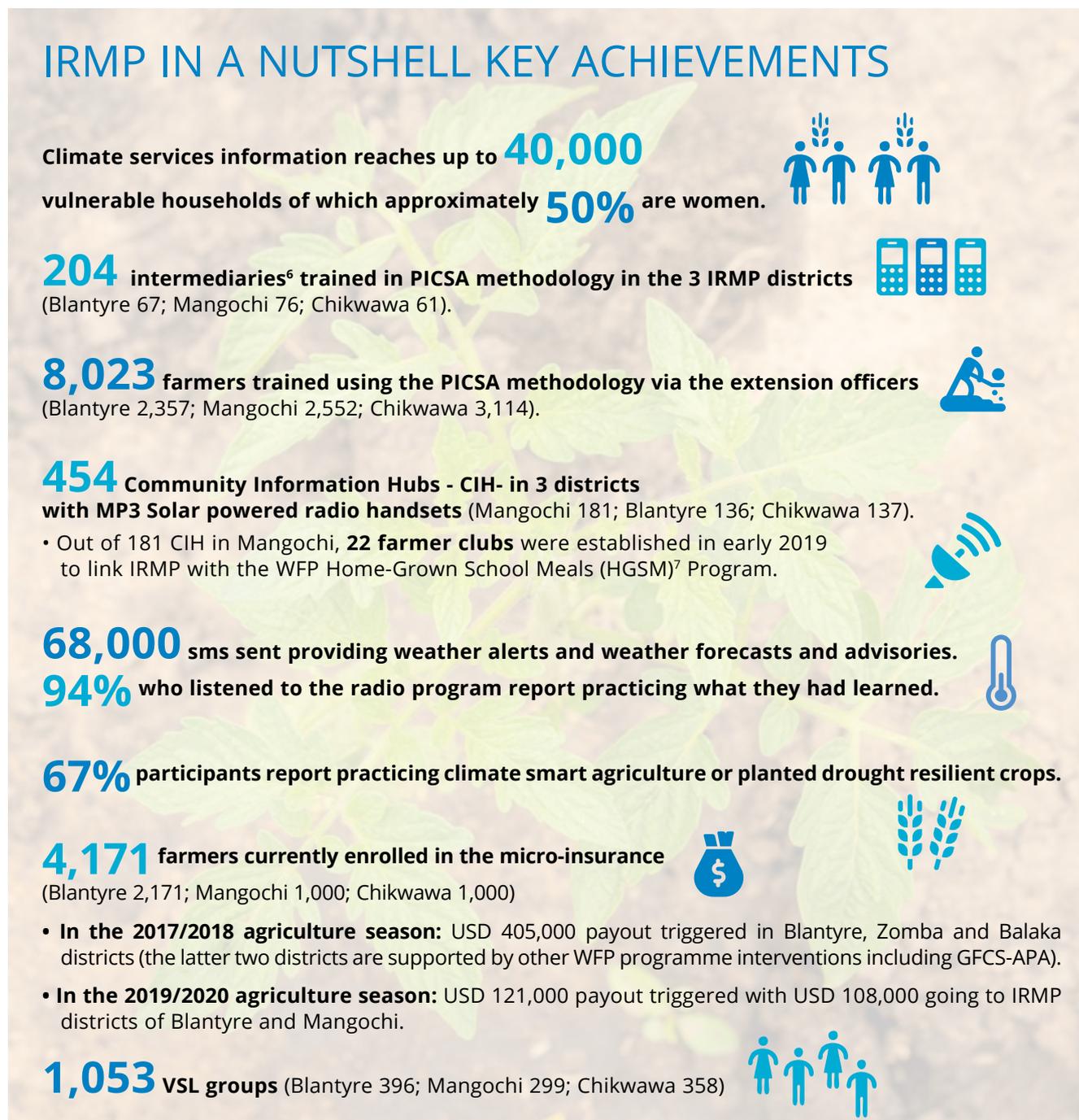
2. GFCS Adaptation Programme for Africa introduced last mile climate services in the Balaka and Zomba districts (2014-2016).

3. The R4 Rural Resilience Initiative is WFP's flagship approach for integrated climate risk management. Further information can be accessed here: <https://www.wfp.org/r4-rural-resilience-initiative>

4. The WFP's Food Assistance for Assets (FFA) initiative addresses immediate food needs through cash, voucher or food transfers, while at the same time it promotes the building or rehabilitation of community and homestead assets.

5. Climate services activities with building capacity of extension officers began in Blantyre and Chikwawa districts in the first year of the programme implementation. In the second year, it scaled up to Mangochi. Similarly, Weather Index Insurance implementation began in Blantyre in the first year of implementation but scaled up to Mangochi and Chikwawa in the second year.

Table 1
Key achievements within the IRMP programme



6. Intermediaries include agricultural extension officers, NGO staff and volunteers that work both with farming communities and staff from DCCMS.

7. This is an innovative approach promoted by WFP which links school feeding programmes with local smallholder farmers to provide school children with food that is safe, diverse, nutritious, and above all local, while giving the chance for local farmers to have a predictable outlet for their products, leading to a stable income, more investments and higher productivity.



Petros Malunga, a smallholder in southern part of Malawi “Elders in the village talk about how dry spells have become more intense and frequent. With my pay-out, I’m bought seeds and worked on my garden which to bring me some benefits and help me get through the year,” he said, whilst digging a trench in a field he irrigated, destined to be planted with sweet potatoes.

2. Key areas of intervention

2.1. STRENGTHENING ACCESS TO CLIMATE SERVICES

By making available more relevant climate information and building the capacity of farmers to understand how it is useful to them, the project improves farmer decision-making with regard to livelihood activities affected by climate variability and extreme weather.

Based on the experience and methodology developed during the GFCS APA I, the IRMP activities under the climate services component were built on community consultations and an initial baseline of information needs in the new districts of Mangochi, Blantyre and Chikwawa. To ensure that information would reach all community members in the targeted districts, the initiative adopted a three-pronged approach that focused on building the capacity of extension workers to understand and communicate climate information, development of tailored radio programmes and using ICT-based platforms (i.e. notably text messaging and a call centre).

Credible, accessible, and actionable climate information contributes to enabling farmers to adopt improved practices, to invest in their soils, and to protect assets in unfavorable seasons. In so doing, farmers will achieve greater food security and improved livelihoods.

2.1.1. Building capacity of Agricultural Extension Officers and farmers

Within the project, **training extension workers involves the use of the Participatory Integrated Climate Services for Agriculture (PICSA)⁸ methodology**, an approach developed by researchers at the University of Reading, UK (a partner of WFP). The PICSA training was already introduced in Malawi through the GFCS APA I project.

PICSA is a participatory agricultural extension and climate services approach that is used by extension workers and other intermediaries to work with farmers starting long before the rainy season to help them assess their current livelihood activities, examine probabilities and risks associated with the climate and weather in their area, and consider different options for crops, livestock, and other livelihoods under their local weather conditions.

The **implementation of PICSA involves two stages**: the **training of trainers** (ToT), i.e. extension officers, and the **training of farmers**. The University of Reading works with the Department of Climate Change and Meteorological Services in Malawi (DCCMS) and WFP to organise five-day PICSA Training of Trainers (ToT) for district-based extension staff that consists of participatory classroom work, field practice as well as feedback and planning. This is done in partnership with the Department of Agriculture Extension Services (DAES) coordinates at the national and district level. DAES mobilizes extension workers (intermediaries) that participate in the ToTs and eventually roll-out the approach to farmers in the targeted districts. A total of 204 agricultural extension officers have been trained in the IRMP programme districts (in Blantyre 67; in Mangochi 76; in Chikwawa 61).

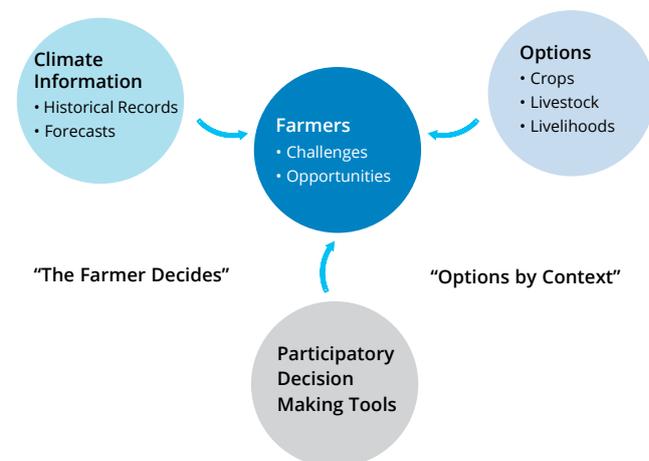
8. PICSA is made up of 12 logical steps that agricultural field staff implement with farmers, starting long before the growing season, then continuing shortly before, during, and after the season. More detailed information on PICSA can be found [here](https://research.reading.ac.uk/picsa/) (https://research.reading.ac.uk/picsa/).

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To ensure long-term sustainability of climate services activities with the use of this participatory approach, a pool of national PICSA experts has been created in Malawi through the PICSA Training of Trainers (ToT).⁹ There are now 27 PICSA Experts. **These experts are able to support any programme in Malawi that has a PICSA component.**

When the seasonal forecast is released just before the beginning of the season, intermediaries (i.e. extension workers) then work with already established farmer groups in WFP's impact areas and reach out to these farmers to revisit their livelihood options (e.g. cropping and livestock choices) and their associated risks based on what is predicted. They use participatory PICSA budget tools, historical climate information,¹⁰ and crop water requirements which help them to make choices on **options (e.g. appropriate crop varieties, suitable agricultural practices, etc) that best suit their contextual circumstances as different farmers have different contexts ('options by context')**. In this regard, **PICSA promotes farmer empowerment as decisions should be made by farmers themselves ('the farmer decides' principle)** and they are responsible for the consequences of the farming decisions they take (as shown in figure 2). During the agricultural season, short-term forecasts and warnings may be used to adjust practices as needed.

Figure 2
The PICSA Approach Diagram



By working with farmers in a participatory manner, extension agents shift their role from delivery of static messages to facilitators of dynamic decision making, creating a new relationship with the farmers they serve.

Madaliso Makondi, an Agriculture Gender Officer explains how "the knowledge gained through PICSA will help me work with women farmers and other vulnerable groups because climate variability and change have a big impact on household-level food security."

Once the seasonal forecasts becomes available, the Ministry of Agriculture Irrigation and Water Development (MoAIWD), WFP, DCCMS and the University of Reading co-facilitate the **Planning and Review Days (P&R)** which is an opportunity to discuss the seasonal forecast and agree on the messaging and advisories for the local communities. The **P&R days' have proved to be successful in supporting the co-development of agro-climatic advisories based on downscaled seasonal forecasts and on how best the extension officers can communicate the forecast to farmers** so that they can make informed choices regarding their livelihoods. The messages range from suggesting specific drought tolerant crops for a dry season to delayed planting if there is a risk of late onset of rains. The P&R are also an opportunity to collect feedback from extension officers on the community trainings and discuss any difficulties they might have encountered in the roll out of PICSA.

9. PICSA Training of Trainers has proved to be very successful and it has also been included in the 'Scaling Up of Modernised Climate Information and Early Warning System (M-CLIMES) Program' - a Green Climate Fund program through UNDP and implemented by the Government of Malawi.

10. Farmers are taught how to calculate probabilities of rainfall start and end dates, total seasonal rainfall, average and maximum temperatures, etc. using historical climate information.

BOX 1

HOW DOES PICSA WORK?

Agricultural extension officers interact with farmers through farmer groups of the area and each farmer begins the process by mapping and allocating the resources available around their households/land (as seen in figure 3 below); they develop seasonal calendars; receive historical information of their area which help them have a better understanding of the local climate conditions; and this helps them develop practices under their local climate conditions.

They are also involved in a participatory budgeting plan on their practices to help them select appropriate enterprises for the season (i.e. when to buy which variety of seeds, which livestock type to raise when to hire labour, how much production can be expected, how much will it be for own consumption, how much to sell at a minimum price to reap a profit from crops, livestock, etc.).

Farmers acquire the skills and a set of tools to improve their decision-making around their food security and livelihoods through the Participatory Integrated Climate Services for Agriculture (PICSA) and capacity building efforts from extension officers (as shown in figure 4 below). Other dissemination channels for the provisioning of such information and agriculture and livelihoods advisories include radio programmes and ICT-based platforms¹¹ (i.e. SMS, 'Mlimi Hotline', 'Beep4Weather') to reach smallholder farmers that are discussed in the following section.

Figure 3

Farmers allocating the resources available around their households/land with a village resource map.



Figure 4

Farmer group with an extension officer working on PICSA.



11. ICT-based platforms are channels for climate services information delivery and are detailed in the section 'Interactive Radio and ICT-based platforms to access climate services'.

A survey conducted in 2019 in the three districts with a sample of 484 participants highlighted how the information received helped them with their planning, decision-making, and attitudes to farming. Farmers also shared information on changes made in their agricultural practices following the PICSA training. **90% of the participants felt more confident in their planning and decision-making, whilst 86% thought they were able to better cope with bad years. Most farmers perceived that the PICSA training had positively impacted their food security (81%) and their income (70%). The vast majority (85%) of respondents made changes following PICSA training.**

Amongst the others, some of the changes that the farmers made included delayed planting based on the seasonal rainfall forecast, use of soil and water conservation measures such (i.e. as manure application, swales construction, etc), use of drought tolerant crops such as sorghum, millet, sweet potatoes. Farmers often explained that the impacts of these changes comprised higher yields, higher income, and greater capacity to cope with the effects of climate and weather-related challenges, including cyclone *Idai*. Most farmers (61%) said that they had shared information about PICSA with other farmers in their area.

2.1.2. Interactive Radio and ICT-based platforms to access climate services

In addition to building capacity of agricultural extension officers, as a second channel to strengthen access to climate and weather information, communities identified radio as a preferred way of receiving information.

WFP partner for the radio component is Farm Radio Trust (FRT) that supports the design of the radio programmes, training of the radio hosts and provides a platform to ensure the integration of the radio service with ICTs (notably text messaging) in all the IRMP districts. Radio programmes are designed in an interactive manner and often have segments with host experts that can answer questions from farmers.

BOX 2

Impact Story from the Field

USING INDIGENOUS KNOWLEDGE TO CONTROL PESTS

Laika James' field was infested by fall armyworms, an insect that has attacked millions of farmers' crops throughout Africa. Laika follows cropping and livelihoods advice she heard on radio and uses an organic treatment with locally available products including sugar and fish. *"The soup attracts ants which in turn will eat the worm. It can possibly save my crop at a very cheap price."* - Laika says. Thus, the radio programmes not only provide agro-climatic advice, but also additional guidance on a range of livelihood topics that help farmers to adjust and re-calibrate their activities accordingly.

Figure 5-6

Organic solution made from a mixture of sugar and fish saved Laika's crop from fall armyworms.



The content of the forecasts and advisories shared in the radio programmes is co-produced through the National Agriculture Content Development Committee (NACDC).¹² The establishment of NACDC was supported by WFP in 2015 under GFCS phase I and it brings together technical specialists from DCCMS, DAES, and other MoAIWD departments, FAO, and international and local NGOs. Downscaled seasonal and sub-seasonal forecasts (i.e. weekly weather forecasts) are provided by DCCMS and these are used to generate locally-relevant agricultural advisories for the radio programme. Weekly weather forecasts are found to be very useful by farmers in making short-term decisions i.e. weeding, planting, fertilizer/manure application, deworming for animals, livestock management, and act as early warning systems to farmers.

NACDC has the flexibility needed to respond to the changing need for agricultural advisories appropriate to the district-level weather situation as the season progresses.

The agro-climatic content that is co-developed for the radio programmes can include messaging related to adapting livelihood activities to seasonal variability, including information on sourcing farm inputs, climate-smart agriculture, harvesting, storage, marketing.

Weekly **radio programmes** (called '*Ulimi ndi Nyengo*', which means '*Climate and Agriculture*') are transmitted through both Zodiac national radio and community radio channels (in areas where there is no national radio coverage) on Fridays and repeated on Monday providing thus a relevant radio service to farmers.

Figure 7
Gladys Phiri broadcasts on "*Ulimi ndi Nyengo*" ("*Climate and Agriculture*") radio programme from Lilongwe.



Given that, baseline studies had shown that women had a low ownership ratio of radios when compared to men, the initiative set up Farmer listening groups (known as Community ICT Hubs -CIH) with participation of several women farmers. Each group is provided with a solar-powered FM/AM radio with a built-in memory card for recording radio broadcasts for those unable to attend the weekly meetings.

Community ICT Hubs meet once a week to receive weekly weather, climate information and agronomic advice through the radio programmes. In turn, they often support the further use and dissemination of such information at community level. For example, this include teaching what they learned from the radio programme to other community members who are not part of the CIH; mobilizing other farmers; asking questions to experts through text messaging via mobile phones, or sending messages to fellow farmers about the agro-advisories shared via the radio. Community meetings at the village level are also a useful venue to pass on messages on climate/weather information and agriculture advice to other fellow farmers. Extension officers are trained together with the farmers and are expected to visit the CIH whenever they are meeting to provide additional agricultural advice and support. Overall, the initiative helped to set up 454 Community ICT Hubs (181 in Mangochi; 136 in Blantyre and 137 in Chikwawa districts).

Out of the 181 ICT hubs in Mangochi, a small pilot involving 22 farmer clubs in this district was established in early 2019 to link IRMP with the WFP Home-Grown School Meals (HGSM)¹³ Programme. This was done to enhance the integration of climate services with Home Grown School Meals so that farmer clubs supplying food to primary schools are also able to access agro-climatic information, with the aim of improving their decision-making ahead of the season.

Figure 8
John Mpakeni recording a radio programme for farmers from the Call Centre in Lilongwe.



12. NACDC reviews a range of agro-climatic content and more lately has also included information on nutrition, health, market, farming practices, pests and disease to respond to requests from communities.

13. This is an innovative approach promoted by WFP which links school feeding programmes with local smallholder farmers to provide school children with food that is safe, diverse, nutritious and local, while giving the chance for local farmers to have a predictable outlet for their products.

BOX 3

Impact Story from the Field

USING WEATHER INFORMATION TO PRODUCE MORE FOOD

Figure 9

Bizwik listening to the radio programme.



Bizwik Nakaya is part of a Community ICT Hub which also spreads the message in village meetings, or other gatherings to inform others who are not in the group. He is cultivating 0.4 hectares of land in a hilly valley of Southern Malawi called Machinjiri. After learning from a radio programme -Ulimi ndi Nyengo -and SMS on better agriculture techniques and climate information, he managed to gradually increase his yield.

'In 2016, I was harvesting around 9 bags of 50 kgs of maize, this was not enough to feed my family for one year. Thanks to what I listen to on the radio, I learned many improved farming techniques like water conservation and pest management', says Bizwik. 'In 2019, I harvested 46 bags of 50 kg of maize. I can say that my family is safe from hunger now'.

Edina Mitembo is a member of Chigojo farmers group in Malawi which is also a Community ICT Hub and at the same time a Village and Savings Loans member. She is a mother of two children that is particularly interested in providing a healthy diet to her children.

On the radio programme, she learned about the nutrition benefits as well as the array of vitamins and minerals that contain sweet potato, in addition to being a cash crop. After taking the decision of cultivating sweet potatoes because of the guidance received on the radio, she harvested about 200 Kg of produce that she used for both household consumption and for sale to other fellow farmers.

Figure 10

Edina is a woman farmer that benefits from the radio programme.



Figure 11

Provision of climate services information



Samuel Lupiya and his wife **Nefy** are both working hard to have a better harvest thanks to an irrigation system set up in the village of Mposa.

'Thanks to my participation in a Community ICT Hub where I received weather information and agriculture advice through the radio, and then I decided to act on it, I planted tomatoes in an irrigated field and made about 100,000 Malawian Kwacha (USD 140) profit' - says Samuel.

In addition to radio programmes, 'push' and 'on demand' text messages (the latter also known as the 'Beep4Weather' service) help to improve the reach of radio services and provide further advice to farmers in an interactive manner.

The 'push' SMS platform is used to send two different types of messages: (i) to create awareness of the 'Ulimi ndi Nyengo' radio programme and the 'Beep4Weather' service; and (ii) to give tips on specific agricultural practices and technologies according to the seasonal forecasts and local contexts. This set up is also supported by a **telephone call centre (known as the 'Mlimi Hotline')**¹⁴ at FRT Headquarters. The tips provided through SMS are short statements that encourage farmers to consult their local extension workers and provide the hotline number for further information.

Examples of 'push' SMS sent:

1. Every farmer should plan their activities well for this rain-fed farming season. Listen to the 'Ulimi ndi Nyengo' program on Zodiak radio. Every Friday 2.30pm and Mondays 10.30 am.
2. Knowing the short-term forecasts helps a farmer to decide on how to protect crops or livestock from pests, parasites and diseases. Listen to weather segments in the Ulimi ndi Nyengo program on Zodiak radio.
3. Using water harvesting and storage technologies supports farming during dry spells. Consult your local extension worker for more advisory support.

The **on-demand service known as 'Beep for Weather' (B4W)** provides free, automated forecasts to farmers on request. Farmers leave a missed call ("beep") which prompts an interactive voice response system to phone back, free of charge. Farmers then listen to a recorded message with the same (or similar) weather report and advisory service broadcast by the radio station.

A Short Messaging Service Platform is used to disseminate information to recipients with access to a mobile device that can receive messages through the client's Mobile Network Operator's message centre. The messages pushed via SMS platform are also developed by the NACDC. FRT hosts the ICT (SMS) platform and has entered agreement with Airtel Malawi and Telecom Network Malawi (TNM). The project beneficiaries register their names and phone numbers with FRT to receive this service.

BOX 4

Impact Story from the Field

STORING BETTER THE GRAIN

Stone Mkwepu is a member of Chigojo farmer's group, which is also a radio listening club in Blantyre District, southern Malawi.

'In the radio programme, I got particularly interested in the hermetic grain storage technology commonly known as PICS bags', says Stone. Since he is using these hermetic bags, his grain is now safe from infestations. 'This has two benefits for me. First, I am not using chemicals for conservation. Second, I am able to keep my maize for a longer period of time and I only sell the crop when I can make sure it is sold for a good price in the market'- said Stone. In the past, Stone used to lose 40% of his harvest because of poor post-harvest handling. This is now reduced to close to zero.

Market information and post-harvest handling techniques are also part of the advisories that is co-developed at the NACDC for the radio programmes.

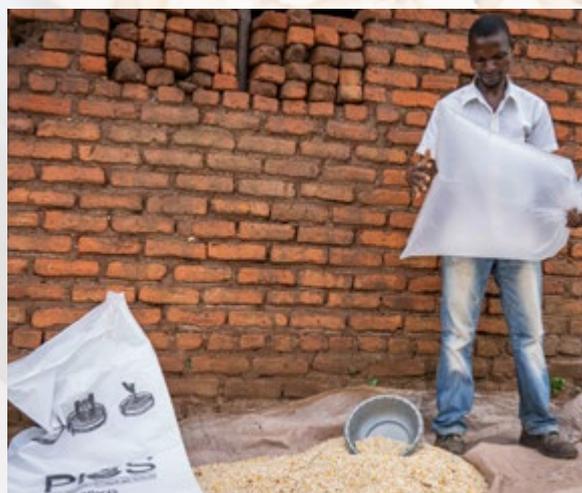


Figure 12
Hermetic bags, a new grain storage technology that has helped to reduce losses after harvest.

14. The call centre 'Mlimi Hotline' is staffed with agricultural extension officers. Farmers from radio listening clubs can call for further information and advice on crop, animal production, pests and disease control and other cross-cutting issues including nutrition, and marketing.

Since the first radio programmes started in 2017, the number of people listening has grown to more than 700,000 listeners. Over 70% of SMSs received from farmers are from Community ICT Hubs with the majority recognizing how information shared through the radio programmes is helping them gain new knowledge and information.

Linking extension officers to Community ICT Hubs has helped to bridge the shortage of extension officers as farmers are now able to access the radio service and get supplementary weather information and advice through the radio programmes.

Table 2

Key achievements based on monitoring data from 2019 on the interactive radio programme and ICT-based platform (SMS)

Frequency of ICT hub meetings	95.1% of the ICT hubs meet at least once per week to access information through radio programmes
Knowledge acquired through radio programme	99% respondents indicated that their knowledge on climate information has increased on: <ul style="list-style-type: none"> • 79% knowledge on drought resistant crops • 76% knowledge on climate smart agriculture • 53.5% knowledge on disaster risk management
Knowledge put into practice	94% respondents practiced what they learnt on the radio programme. <ul style="list-style-type: none"> • 67% indicated they practice climate smart agriculture • 63% drought resilient crops • 35% disaster risk management • 17% drought resilient livestock - small stocks and small ruminants i.e. chicken, goats, sheep, rabbits.
Radio programme	88 % respondents indicated the radio programmes on climate services are very good and show satisfaction with the information shared: <ul style="list-style-type: none"> • 2017: 52 radio programmes broadcast. • 2018: 55 new radio programmes broadcast. • 2019: 42 new radio programmes and 42 repeats.
Use of mobile phone to access weather and climate information	<ul style="list-style-type: none"> • 64% respondents did not use mobile phone to access weather and climate services • 36% use their mobile phones to access information.

Figure 13

Elizabeth Ngayaye, from the southern part of Malawi, has been receiving climate and weather information through radio and the agriculture extension officer.



She has also been participating in PICSA meetings and training. Through these, she can follow the seasonal calendar and weather forecasts which help her make better farming decisions. Now on the same surface of land she is able to produce 5,000 kg of groundnuts compared to 3,250 kg before. Groundnut is a cash crop which is helping her in terms of food security and additional income.

'I also practise crop rotation which helps me improve land fertility and pest management. Apart from maize, I also grow groundnuts, pigeon peas and cassava', she says.

BOX 5

TESTING THE USEFULNESS OF A PICSA APP FOR EXTENSION OFFICERS AND FARMERS

Figure 14

Women farmer testing the PICSA app with a tablet during the PICSA training



With IRMP, a new digital approach has been tested within the PICSA training. In July 2018, 21 extension officers from the district of Mangochi were provided with tablets equipped with the PICSA app (as shown in figure 14 below) developed by the University of Reading, UK, and to trial their use within the PICSA training with support from the lead app developer towards the integration of technology within the training sessions. It provided an opportunity to share ideas, feedback, and suggestions for improvement.

Some of the positive lessons of this trial with the PICSA app that farmers reported were that i) it was a faster process with the app; ii) they could finish on time; iii) the budget calculations were easier to conduct; iv) there was less to carry around (instead of books); v) they could take photos for reporting; vi) farmers believed the messages on the screens; vii) they found that it was a good mechanism for reporting; viii) it can be used by farmers who have not been to school; and ix) the use of tablets with the PICSA app can increase participation of farmers in climate services activities.

As a result of this trial with the app, a WhatsApp group was created and a link provided in the app that users could tap to open WhatsApp and join directly. This proved an effective way to invite additional users. Budget printing and sharing had been identified as a crucial feature and had become more pertinent as many of the extension workers had now worked to create participatory budgets on the tablet with farmers, and wanted to have a way to share back (as shown in figure 15).

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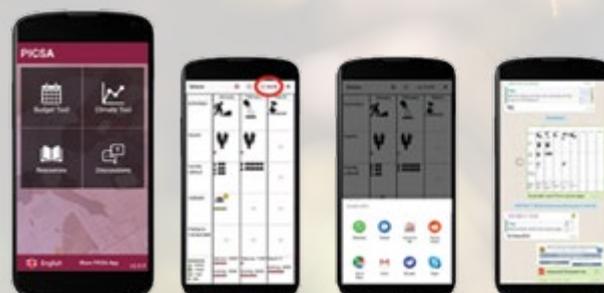
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Some of the disadvantages that farmers noted were: i) further training was required; ii) there were not enough tablets for the group of farmers who tested the app; iii) it was harder and a slower process for older people; iv) not all farmers owned smartphones, and therefore it was hard to learn for some of them; and v) women farmers were less experienced with the use of technology, among others.

The feedback received from farmers was useful to further refine the development of the PICSA app in the future and for exploring additional functionality of the PICSA app.

Figure 15

Sharing a participatory budget via social sharing, app screens and the output posted in WhatsApp group



2.2. MITIGATE RISK THROUGH ASSET CREATION AND WEATHER INDEX-BASED MICRO-INSURANCE COVERAGE

The *risk mitigation mechanism* is provided in the form of weather index-based insurance coverage to self-selected FFA participants. The mechanism operates as an insurance-for-assets scheme targeting FFA participants who receive insurance premiums in exchange for their work in constructing community assets (e.g. swales, shallow wells, vegetable gardens,¹⁵ tree nurseries, check dams, trenches, compost production, etc) to support watershed management. FFA participants willing to participate in the insurance scheme work for 14 days on specific asset creation projects (e.g. construct a water trench of 20 meters) in exchange for the insurance premium. For example, in Blantyre district, FFA participants now work for 12 days and make cash contributions for the remaining 2 days to receive the weather-index insurance coverage.

In Malawi, WFP has worked on the development of microinsurance products since 2014 and integrated them into its food assistance programmes. The micro-insurance product is designed with technical support from Columbia University's International Research Institute (IRI) and provided through the Insurance Association of Malawi¹⁶ with NICO¹⁷ insurance being the lead underwriter. **Just like the other interventions, microinsurance is not conceived as a standalone tool, but as part of a comprehensive risk management approach.**

Based on monitoring data from 2019, **micro-insurance was provided to 2,000 farmers in Blantyre Rural District on a pilot basis in the 2017/18 season, and then expanded to a total of 4,171 farmers across all three districts (Chikwawa 1,000, Mangochi 1,000 and Blantyre Rural 2,171) in the 2018/2019 season.**

The seasonal outlook for 2017/2018 season was one of the worst years in Malawi with the insurance triggering significant pay-outs for participating households in Blantyre due to unfavorable weather conditions (i.e. prolonged dry spells). The situation was aggravated by the fall armyworm infestations that caused significant yield losses - particularly for maize - the staple food in the country. All the insured farmers in Blantyre received pay-out in April ranging approximately USD 35 - USD 65.

Figure 16
Cathreen Thomas insures her crops against adverse weather (i.e. drought).



Cathreen Thomas insured her crops against dry spells. Cathreen received a pay-out of 38,000 Malawi Kwacha (USD 55) as compensation for the dry spells she experienced. *'It was a relief for my family. I used the pay-out to buy seeds which I planted in my newly irrigated fields. I had never heard about weather insurance. I only knew about vehicle insurance. Last year, I harvested ten bags of maize, but this year, it did not rain for twenty-five days'* -she says. Cathreen received a pay-out of 38,000 Malawi Kwacha (US\$ 55) as compensation for the dry spells she experienced. Vulnerable smallholder farmers like Cathreen can pay for weather-index insurance through their labour. Farmers are required to create assets that contribute to improving their capacity to cope with weather shocks, like irrigation systems.

15. Vegetable gardens have provided dietary diversification and provided much needed additional income for beneficiaries.

16. The Insurance Association of Malawi is composed of local insurance service providers sharing risk.

17. NICO General Insurance is the leading insurance company in Malawi which has previous experience in index-based insurance having dealt in a World Bank project before. The company's background in the World Bank project has eased the need for seeking the regulatory approval from the Reserve Bank of Malawi who regulates the financial services sector in the country. The company is also an important member of a grouping of Insurance Market players in Malawi who make key decisions in the insurance market (Insurance Association of Malawi).

The timely insurance pay-out received in 2017-2018 by farmers allowed them to purchase food (and in some cases agricultural inputs), providing them with the energy needed to prepare and plant their winter gardens. These farmers reported they had a good understanding of the insurance scheme, though they also expressed the desire for insurance to cover floods and pests in addition to dry spells.

The most prevalent risk in the selected project areas is dry spells, and the micro-insurance product was designed to address drought. Even though in the 2017-2018 season a prolonged dry spell triggered the microinsurance payouts, crop losses in recent years have been caused also by floods and pests. For example the fall Armyworm infestation in 2017/2018 and the floods in early 2019 that washed away many community assets, particularly in Chikwawa district.

To address multiple hazards, the Area Yield Insurance product was rolled out on a trial basis outside the IRMP district areas (i.e. Balaka, Phalombe and Zomba). Lessons will be drawn from this trial to design a better product and upscale it to more districts.

Figure 17
Maluso VSL group sharing in Somba village, Malawi. Blantyre District.



2.3. ACCESS TO FINANCIAL SERVICES THROUGH MICRO-CREDIT AND SAVINGS

Financial services activities mostly focus on the creation and training of Village Savings and Loan (VSL) groups, which enables farmers to contribute in shares and serves as a social fund (e.g. illness, funerals). VSL members contribute small amounts of money each week (up to a maximum amount agreed by the group) which are put into two separate funds: a savings fund and a social fund. Individual contributions are recorded. The money accumulated in the savings fund can be loaned out to individuals for agreed income-generating activities, both through investments in productive and non-productive assets. These creditors are expected to repay the loan with interest, thus increasing the amount of money in the savings fund. Money from the social fund can be loaned to individual members to help cover the cost of emergencies such as those caused by illness or death of a household member or they can also decide to engage in a small-scale group business (e.g. mushroom production, bee keeping, etc) to generate income as a group.

After an agreed period of time (often coinciding with the start of the agricultural season), the money in the savings fund is shared out to the members according to the amount of their own individual contributions. Over time, once a VSL has developed sufficient experience, it is expected that the IRMP partner micro-finance institutions (FISD Fund,¹⁸ CUMO Microfinance Limited)¹⁹ provide formal credit services to the VSL members. The provision of formal credit services by micro-finance institutions for VSL members recently started in Mangochi and Chikwawa Districts.

VSLs provide a means to strengthen the capacities of smallholder farmers (particularly women) to invest and diversify their livelihoods becoming more resilient in the face of uncertain weather conditions. There are a total number of 1,053 participants that are part of VSL groups within the IRMP districts: 396 in Blantyre 396; 299 in Mangochi 299 and 358 in Chikwawa.

18. Foundation for Irrigation and Sustainable Development (FISD) is an NGO with expertise in irrigation and water development that supports with sensitization, targeting, registration, monitoring and implementation of disaster risk reduction activities under the FFA programme and provides supervision and monitoring of activities at district level. There is also the FISD Fund, which is the policy-holder for the insurance and implements the VSL activities in the IRMP.
19. CUMO Microfinance Limited (CUMO) is one of the leading providers of rural microfinance services in Malawi delivering facilitated savings (VSL), loans and insurance services to rural people of Malawi. CUMO has been acting as policy holder for the insurance product and supported the facilitation of savings and linking farmers to formal credit.

Implementation of asset creation activities through the FFA programme with microinsurance coverage, and VSL activities has been timely, though late

payments made to farmers under the FFA program affected their ability to save and invest in the VSLs.

BOX 6

EMPOWERING WOMEN THROUGH THE VILLAGE SAVINGS AND LOANS GROUPS

Members use the loans to build their houses, for small-scale business development opportunities, paying school fees, buying livestock or inputs for their agricultural activity, such as fertilizers. The purchase of roofing sheets for a house, for example (an item commonly purchased with VSL share-out money), helps to prevent the spoilage of stored grain and seed due to leaking thatch, and also avoids the need for women to spend time in re-thatching the house on a regular basis, potentially making women's labour available for other productive purposes. The ways in which households choose to spend their share-out money appears to reflect their level of resilience and needs at the time, e.g. the most vulnerable households spend their money on food, whereas those who are more resilient may choose to spend their money on productive assets and to support livelihood diversification.



Figure 18
Mary Hamilton is an IRMP beneficiary in Malawi and she is part of a VSL group.

Since she joined the IRMP programme, her life has dramatically changed. She has bought a new house, sells veggies at the market and bought bicycles. She is raising trees and building check dams with her community pairs.



Figure 19
Rose Ibu is a member of a Village and Saving Loans Group - a community micro-credit scheme.

Micro-savings and loans have boosted Rose's business and is now making more money using loans and returns from the group she has invested in.. With the first pay-out, she bought 4 chickens which multiplied to 26 chickens. When she needs to, she sells some of the chickens to pay things like her children's school fees.

One of the challenges that some women farmers have reported is the fact that household assets had been seized by the VSL in lieu of payment on defaulted loans. Members from one VSL explained how they had learned that creditors must only take out loans for productive, income-generating activities (rather than consumption) and that the VSL needs to be more cautious in loaning out money (i.e. to balance against the desire to loan out all the savings so that it can earn interest). However, monitoring data suggests that this was not a common practice.

Feedback from farmers show that the VSLs are important for household financial planning and in dealing with shocks caused by illness, death and other emergencies. Farmers save what they can afford and they know when they will receive the money from the share-out. They can borrow money from the social fund to deal with medical expenses and funerals; or they can take out a loan if they want to invest in income-generating activities.

Examples of other activities under this component include training on business, financial literacy and management, sensitization meetings, building capacity of key national and district stakeholders as well as village agents, testing of mobile banking services in selected locations.

How does IRMP work for a farmer like Mary?

CLIMATE SERVICES COMPONENT

Weather and Climate Information

Mary receives tailored weather and agronomic information through the extension officer and the PICSA trainings, and the weekly radio programme. She is part of a Community ICT Hub where she can receive seasonal weather forecasts and agro-advisories for the agricultural season. If she has any questions, she can ask her local extension agent or send a message for clarification. Mary uses this information to make decisions for her family's income, food and livelihood activities.

RISK REDUCTION COMPONENT

FFA programme

After 20 days of work creating assets such as compost making, planting trees, and restoring riverbanks, Mary receives 50 Kg of maize, 10 kg of pulses and 2Kg of vegetable oil – or the cash equivalent. These assets help to reduce her risk to climatic shocks.

RISK TRANSFER COMPONENT

Weather-indexed insurance

Having learned about weather-indexed insurance on the radio, Mary decides to work for additional days on her asset creation projects (e.g. check dams). This work purchases her insurance premium. Mary knows she will receive compensation in case of insufficient rainfall and a poor harvest due to drought episodes.



Mary is a IRMP beneficiary in Malawi. Since she joined, her life has dramatically changed. She is empowered with regards to livelihood decisions, she is more resilient in the face of a changing climate and her overall life has improved.

RISK RESERVES AND PRUDENT RISK TAKING COMPONENT

Microcredit and Savings

If Mary requires additional credit, she is able to use her savings history to take out a loan to develop a small-scale business and invest in a more climate-sensitive livelihood. She is also able to develop a group business with her VSL group (e.g. mushroom production or bee-keeping) that brings group income. She has bought a new house, sells veggies at the market and bought bicycles. She is also raising trees and build check dams with her community peers. Mary receives a text message that the agricultural season will be bad, and decides to save some money in her Village Savings and Loans group. At the end of the year, the dividends are shared amongst members, and she uses her share to buy a goat.



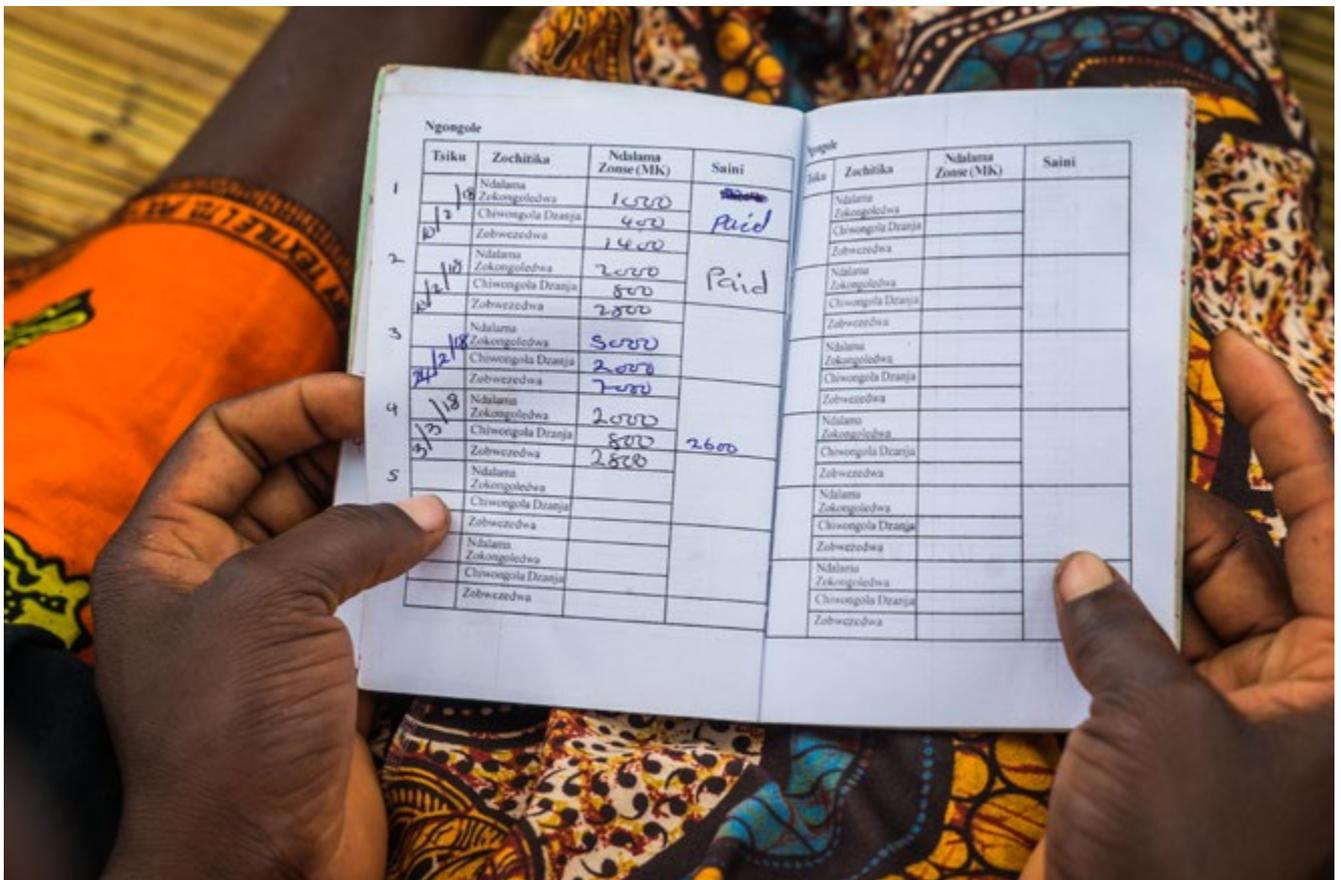
Petros Malunga, a smallholder in southern part of Malawi “Elders in the village talk about how dry spells have become more intense and frequent. With my pay-out, I’m bought seeds and worked on my garden which to bring me some benefits and help me get through the year,” he said, whilst digging a trench in a field he irrigated, destined to be planted with sweet potatoes.

3. Concluding remarks and lessons learned

Through the IRMP and its integration with other WFP programme’s interventions, the project has reached over 40,000 smallholder farmers with better information and a range of climate-smart interventions that help improve their food and income security. Gradually, vulnerable communities are strengthening their capacities to manage and prepare for uncertain climatic conditions and strengthening their food security in the process.

The IRMP design has been particularly innovative in combining climate services with risk management strategies for those most vulnerable through asset creation and micro-insurance coverage, access to financial services and micro-credit.

The delivery of tailored climate and weather information, together with advisories, through the different channels has been helpful to smallholders’ farmers and has informed changes to their traditional practices as a result. While beneficiaries made their own choices about which IRMP components they were interested in, those who chose an integrated package of support benefitted from a powerful combination of knowledge and resources made available at the right time to allow them to plan ahead the forthcoming agricultural season and make informed choices to adapt their strategies to climate variability. This ability to plan ahead is a key aspect of resilience.



Maluso VSL group sharing in Somba village, Malawi. Blantyre District.



Maluso VSL group sharing in Somba village, Malawi. Blantyre District.

Given that demand for financial services among smallholder farmers has been very high and that the current VSL model is broadly sustainable, another positive outcome of the IRMP initiative is that this will most likely continue after the end of the project without the need for external assistance.

The partnership with DCCMS under the GFCS APA initiative and the IRMP has led to improved seasonal and sub-seasonal forecasts and the initiative has successfully contributed to strengthen capacities at national level and is contributing to the establishment of the National Framework for Climate Services²⁰ to support the long-term sustainability of climate service provision in Malawi.

Furthermore, the collaboration with different stakeholders (including DCCMS, the Ministry of Agriculture Irrigation and Water Development, and other key ministries) in the co-development of climate services products with the needs of farmers in mind has helped to create an enabling environment for the success of the rest of project activities.

While a lot has been achieved, there are also several lessons learnt that needs to inform future interventions to ensure they become fully sustainable and that supports greater resilience of vulnerable communities. Overall, the combination or layering of the different climate risk management strategies used at household level will require better targeting of the various IRMP activities at the GVH²¹ level.

20. WFP/IRMP has contributed to the National Framework for Climate Services initiative, which is coordinated by DCCMS and it has been established through the GFCS-APA II project. The NFCS aims to provide a national framework to improve the availability and use of tailored weather and climate services for different sectors in Malawi.

21. GVH refers to Group Village Headman, a cluster of villages supervised by one headman.

The emerging demand for climate services among smallholder farmers and their future provision and use will depend on DCCMS ability to continue producing timely, accurate and downscaled seasonal and sub-seasonal weather forecasts and on the processes of co-production of advisories disseminated via the different channels (i.e. extension officers, radio programmes and ICT-based platforms).

While dissemination of climate and weather information and advisories has been very successful, the number of extension officers per district remains low and affects the number of people they can reach across the target districts, considering also the wide distances between communities and lack of resources for transportation. Their capacity to scale up both the PICSA approach and their support to the Community ICT Hubs is therefore constrained. To address this, potential solutions include the identification and training of additional intermediaries that could support the work done by the extension officers (i.e. lead farmers, Red Cross volunteers, NGOs, etc). The sustainability of the PICSA approach will also depend on its integration within day-to-day extension services activities, rather than being seen as a separate activity.

SMS messages have proved to be very effective as a mechanism to prompt people to seek out additional information from existing sources such as the radio programmes. Further investments are needed to address technical issues linked to the ICT platform through which SMS are sent to farmers, including solving network and power problems (i.e. recharging), support greater mobile ownership, and future interventions need to focus on the development of specific visual or audio products for areas where illiteracy rates remain high. To scale up the uptake and use of ICT platforms, including Mlimi Hotline, SMS services, and 'Beep4Weather', there is a need for further awareness raising on what they are, services provided and how to access them as many farmers are still not aware of them.

Future demand for insurance services will be closely linked to farmers' trust in the insurance provider, the type of insurance provided and their ability to ultimately pay for the insurance premium themselves. For this to happen, future interventions will need to promote better understanding of the insurance mechanism, clear and timely communication on whether or not payout is triggered and clear explanation on why and a timely transfer of funds when farmers are eligible for a payout. As noted above, given communities vulnerability to several hazards, the current design of the index-based insurance mechanism focusing solely on drought may not be the most appropriate. An important area of expansion in the future is therefore the possibility of testing and rolling out a hybrid insurance product in the coming seasons in response to the farmer's needs.



Doreen Msowoya, Agriculture Extension Officer in Malawi, conducts PICSA lessons for farmers.



Edina Mitembo, a member of Chigojo farmers group in Malawi which is also a radio listening club and a VSL member. Edina is a mother of two particularly interested in providing a healthy diet to her 2 children. On the radio programme, she learned about the benefits of the local sweet potato cultivation. It is nutritive full of vitamin A and can also be a cash crop. She will harvest about 200kg of sweet potatoe. She will keep some for household consumption and sell some to make money.



Photocredits for all the pictures:
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The Integrated Risk Management Programme (IRMP)

LESSONS FROM MALAWI



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