

# General Template of the Annual Performance Report (APR)

*Reference Number (FP002): Saving Lives and Protecting Agriculture based Livelihoods in Malawi: Scaling Up the Use of Modernized Climate Information and Early Warning Systems*  
**UNDP**

*Annual Reporting Period Covered in this Report:  
(From 01-01-2019 to 31-12-2019)*

**Sections in this report:**

- Section 1: General Information
- Section 2: Implementation Progress
- Section 3: Financial Information
- Section 4: Report on Environmental and Social Safeguards & Gender
- Section 5: Annexes
- Section 6: Attachments

SUBMITTED BY	
<i>Mr. Benjamin Larroquette Regional Technical Advisor</i>	<i>28 February 2020 Date</i>
<i>Please indicate if this report has been shared with the relevant NDA(s) for this Funded Activity (Yes/No)</i>	<i>Date of submission to NDA 28 February 2020</i>

<b>SECTION 1: GENERAL INFORMATION</b>	
This section provides general information on the funded activity.	
<b>1. Funded Activity Title:</b>	<i>Saving Lives and Protecting Agriculture based Livelihoods in Malawi: Scaling Up the Use of Modernized Climate Information and Early Warning Systems</i>
<b>2. Funding Proposal Number:</b>	<i>(FP002)</i>
<b>3. Date of Board approval - Board Meeting Number:</b>	11/5/2015  <i>B.11</i>
<b>4. Accredited Entity:</b>	<i>UNDP</i>
<b>5. Focal Point of the Accredited Entity for this Project:</b>	<i>Mr. Benjamin Larroquette</i> Regional Technical Advisor, UNDP Regional Service Centre for Africa, <a href="mailto:benjamin.larroquette@undp.org">benjamin.larroquette@undp.org</a> +919786293578
<b>6. Executing Entity(ies):</b>	<i>Department of Disaster Management Affairs</i>
<b>7. Implementation Period:</b>	<i>From: 6/28/2017</i>  <i>To: 6/28/2023</i>
<b>8. Current year of Implementation:</b>	<i>year 3</i>
<b>9. Date of Submission of the Report:</b>	2/28/2020
<b>10. Annual Reporting period covered in this report:</b>	<i>From: 1/1/2019</i>  <i>To: 12/31/2019</i>
<b>11. Total Project Budget<sup>1</sup>:</b>	<b>16,264,545.00</b>
<b>12. Total amount of GCF Proceeds Approved:</b>	<b>12,294,545.00</b>
<b>13. Total amount of GCF Proceeds disbursed (cumulative) to the Accredited Entity:</b>	<b>8,250,163</b>

<sup>1</sup> Total project budget including co-financing as reflected in the relevant Funded Activity Agreement.

## SECTION 2: IMPLEMENTATION PROGRESS

### 2.1 OVERALL (SUMMARY) PROJECT PROGRESS *(less than one (1) page).*

The project made considerable progress and achieved most of its targets for 2019. Although, the progress was temporarily halted as some of the project focal points were temporarily reassigned to respond to flooding from Cyclone Idai which hit Malawi in March 2019, and delays owing to post- election demonstrations following national elections in May 2019, progress remained largely on track owing to increased implementation support during this period from the Executing Agency. Programme delivery and utilization of the funds has been on schedule, leading to receipt of the third disbursement from GCF. The progress under the project across three outputs is summarized below:

**Output1.** Progress was made towards automating and expanding existing hydro-met network through installation of additional equipment for the generation of climate information that will eventually be used by the project beneficiaries. In the year 2019, 33 Automated Weather Stations, 8 lighting detection sensors, 2 lake-based weather buoys and a weather data integration and processing system were installed. The procurement of the 37 hydrological stations was completed and 15 hydro-stations were also installed. Barring one, all the project targets in relation to installation hydro-met equipment have been achieved. The expanded coverage of hydro-met infrastructure has improved the capacity of the hydro-met department to generate reliable and locations specific weather advisories and forecasts to vulnerable communities as well as the general public. A total number of 105 hydro-met staff (that included 14 women) were trained in operation, maintenance and calibration of the newly acquired equipment. 13 staff from DCCMS (including 3 women staff) were trained in data modelling and forecasting. DCCMS was supported in the digitization of rainfall data from year 1990 to 2019, enhancing seasonal rainfall forecasting capabilities of the department. The capacity of hydro-met staff to operate and maintain the newly installed equipment and use data for improved forecasting has improved through various training.

**Output 2.** Steady progress was made towards the development and dissemination of climate/weather products for vulnerable communities, specifically smallholder farmers, fishers and flood-prone communities. An exercise was conducted in 6 districts to profile lead farmers, resulting in the establishment of a database of 13,707 number of farmers (that including 6,4218 women farmers), that takes the total number of farmers registered since the launch of the project to 18,980 in 10 districts. A total number of 291 officials in 10 districts were trained as experts and intermediary trainers to develop tools, products and deliver climate services to smallholder farmers. Seasonal forecasts were provided to 183,702 farmers (including 50,000 women farmers) in 10 districts through the PICSA approach<sup>2</sup>, a well-tested methodology for helping farmers take informed decisions based on observed and projected weather and climate information. Monthly agro-met and livestock advisories were developed and disseminated to 10,527 smallholder farmers in 10 districts through mobile short messaging services (SMS). A database of 2,329 fish traders that includes 754 women engaged in fish trading was created which is in addition to the database that was created in 2018 for 6,066 fishermen and fish processors. People those who are registered in the database will be receiving weather advisories related to fishing activities 4,486 people (that includes 1250 women) involved in fishing activities and 996 members of 88 fishing village committees in 4 project districts were trained in weather hazards and safety. Standard weather alerts were developed for fishers and fish-processors. Development of flood and water resource modelling to manage flood risks progressed steadily. Following the procurement of hydro-stations, officers from Department of Water Resources were trained in operation and maintenance of the newly acquired equipment. Two river catchments were identified for trialing of a flood forecasting system. A consultant has been hired to provide technical support to the Department of Water Resources (DWR) in the establishment of system. 15 data collection platforms were constructed, and 15 hydro-stations were installed to monitor river level. The data from the stations will feed into the development of the flood forecasting system. A sitting and installation plan was drawn up for the installation of 22 hydro-station targeting flood prone rivers in northern Malawi, which will be part of the integrated flood forecasting system.

<sup>2</sup> Participatory Integrated Climate Services for Agriculture (PICSA)

**Output 3.** Good progress was made in relation to strengthening community's capacities to interpret and apply weather/climate information. 208 people (that includes 134 women) from the district and village civil protection committees, who are in the forefront of disaster response from 8 flood prone districts, were trained in climate change and disaster risk management. These courses were specifically developed for the frontline disaster managers working at the district and sub-district levels. 20 officials and teachers were trained in climate change and disaster risk reduction who will lead the development of disaster preparedness and response plans in schools and raise the awareness of children on climate change and DRR. A comprehensive assessment was conducted in 8 districts to identify flood prone rivers and communities and better understand issues related to monitoring and dissemination of flood warnings. Based on the assessment findings, a TOR was developed and advertised seeking consultancy services to establish a community-led flood early warning system that will benefit more than 100,000 people in 8 districts. A prototype of emergency operation center was developed and procurement for construction of the prototype was completed. A nation-wide flood and disaster awareness campaign was launched by the Department of Disaster Management through radio and television that reached millions of people across Malawi.

The key achievements of the project have been summarized below:

- Installation of 33 Automated Weather Stations completed
- A lighting detection system was installed that included of 8 lighting detection sensors
- A weather data integration and processing system was installed at the headquarters of DCCMS
- 2 lake-based weather buoys were installed
- 13 DCCMS staff were trained in improved seasonal forecasting,
- 12 DCCMS staff trained in the O & M and factory assembly of AWS
- 9 DCCMS staff trained in the O & M and factory assembly of lake buoys
- 12 DCCMS staff trained in the use of weather data processing and integration system
- 15 DCCMS staff were trained in the O&M and factory installation of lightening detection system.
- 37 hydro-stations and accessories were procured, and 15 hydro-stations were installed in the central region of Malawi
- 57 DWR staff were trained in the O & M of hydro-stations and instrumentation
- Technical support obtained for DWR to establish a flood forecasting system in 2 river catchments
- PISCA approach was scaled up to 6 new districts taking the total number of districts to 10
- A total of 264 agriculture extension staff were trained in PISCA approach refresher training in
- Downscaling of 2019-2010 seasonal forecast to district level was completed for 29 districts in Malawi and disseminated to the district officials in 14 districts
- Seasonal forecast was provided to 16,702 lead farmers and 167,020 small holder farmers through PISCA approach in 10 districts
- Profiling of fish-traders completed
- 4,486 fishermen and 996 members of fishing village committees were trained in weather hazards and safety.
- Weather advisories for people involved in fishing and fish processors were drafted
- Scoping mission completed to identify and map partners, locations and communities for the implementation of community-based flood early warning system in 8 districts
- Awareness program on flood and disasters was launched through television and radio.
- Tailored courses on climate change and disaster risk reduction were developed and 208 people at district and sub-district level were trained in the courses.
- A prototype for the Emergency Operation Centre (EOC) was developed and contract awarded for the construction of the EOC in one district.

In addition to establishing an Impact Evaluation framework and baseline to evaluate project impact in relation to the theory of change, the project has also conducted a survey to understand the effectiveness and usefulness of the PISCA approach. A survey conducted in the four districts where PISCA was implemented indicates that an overwhelmingly (98%) of the farmers who received PISCA training confided that the training made them confident

in planning and making decisions about farming and livelihood. 68% of the farmers received the training reported improvement in the household food security while 89% reported improved income from farming activities.

Overall, the project made good progress during the reporting period, although some implementation delays were encountered due to national elections and post-election demonstrations that affected normal functioning of the project partners. Heavy rainfall in the first week of March 2019 caused widespread flooding in the Southern region of Malawi affecting 15 districts and 870,000 people, rightfully diverting the attention of DoDMA towards emergency response and recovery. The UNDP Project Coordination Unit (PCU) and Country Office (CO) remained engaged with the project partners and provided necessary support for timely implementation of project activities.

Overall the project is on course to meet its targets and has not experienced any major delays. However, the implementation of community-based flood early warning system in 8 districts and flood forecasting system in 2 river catchments were delayed. The proposals received in response to the call for application for establishment of CBEWS were found to be technically inadequate, hence the process had to be relaunched.

## 2.2 Performance against the GCF Investment Criteria (summary) (max two (2) pages).

*Provide a narrative report describing the progress on the funded activity's performance against [the GCF investment criteria framework](#). The performance should be compared against the initial assessment provided in the Board-approved Funding Proposal (section E). The list of the investment criteria as per the current framework is provided below.*

### 2.2.1 Impact Potential (max one (1) page).

The project is expected to directly benefit 1.4 million beneficiaries and enhance coverage of hydro-meteorological observation network and improve the frequency and timeliness of flood warning. It was also estimated that the project could potentially save 18 lives a year through improved weather/climate forecasting. It was also estimated that the project interventions will result in an annual benefit of US\$3.8 million to the agricultural sector. The project contributes to the achievement of GCF strategic-level impacts through increased resilience and enhanced livelihoods of the most vulnerable people, communities and regions; and increased resilience of infrastructure and the built environment to climate change threats. The project will contribute to the achievement of GCF indicator of the reduction in the number of people affected by climate-related disasters in Malawi with a specific focus on different vulnerable groups.

The project is on track to meeting the impact potential targets and indicators. The procurement and installation of hydro-met infrastructure and equipment has been completed that includes 33 automated weather stations, a lightning detection and thunder alert system, 2 lake-based weather buoys, 15 automated hydrological water level stations and a weather data visualisation and integration system. The impact potential of the expanded hydro-met equipment is far reaching. The lightning detection and thunder alert system covers the entire geographical area of Malawi and enabled DCCMS to detect severe weather with pinpoint accuracy. This is a critical capacity for DCCMS to track lightning strikes and thunderstorms in real time and warn communities and people at risk to take precautionary action in the face of these risks. The addition of automated weather stations will greatly improve the geographical coverage. Additional data transmitted from the new weather stations will assist DCCMS to improve its national and sub-national forecasts and reduce forecast errors that will benefit multiple stakeholders including smallholder farmers who comprise almost 90% of the country's population and depend on rain-fed agriculture. The data generated from 2 lake-based weather buoys is vital to develop safety advisories, which will include information on wind and wave for thousands of people who are dependent on fishing. The installation of 15 automated hydro-level stations has already improved the capacity of DWR to monitor river levels in the Central region of Malawi which will be further enhanced by installation of 22 additional stations in Northern Malawi, which will lead to establishment of an integrated flood monitoring and forecasting system benefitting millions of people.

The PICSA approach that aimed at enabling farmers to make informed decision based on observed and projected seasonal forecast in their area was scaled up to 6 new districts in 2019, taking the total number of districts covered under this initiative to 10. A total of 183 702 small-holder farmers in four districts received seasonal weather ahead of the cropping season. This initiative will be expanded to 4 more districts benefitting close to 200,000 small-holder farmers in 14 districts, who will be receiving weather advisories to better plan their farming activities. A survey was

conducted to evaluate the effectiveness and usefulness of the approach which showed very positive results. Majority of the farmers who were trained in the PICSA approach reported increases in farm income, improved food security and making positive changes to their crop enterprises. More than 5,000 fishermen and fish-processors in 4 lake shore districts were sensitized about weather hazards and safety. A data base of fishers, fish-processors and traders has been created who will be receiving weather advisories through different channels. A SMS-based platform is being designed to provide daily and weekly advisories to members of Beach Village Committees, which act as intermediaries between the fishing communities and Department of Fisheries to further disseminate weather advisories to the communities. The draft advisories containing weather parameters useful for fishers and fish-processors were developed through a consultative process. More than 30,000 people involved in fishing and fish processing will be benefitting from this initiative. Following the review of current and past Community Based Flood Early Warning projects (CBFEWS) and initiatives implemented by different stakeholders in Malawi a full-fledged scoping mission was conducted in 8 districts to establish a community-based flood early warning system. A tender was launched to establish the system which would potentially benefit 115,000 people in 8 districts with flood early warnings. The expansion of flood forecasting system that has a potential to benefit 1.4 million people is on track. A network of hydro-stations in the Central and Northern Malawi is being established, which will be linked to an integrated flood forecasting system. The installation and linking of hydro-stations in the Central province was completed in 2019.

### 2.2.2 Paradigm shift potential (max one (1) page).

The key element for the paradigm shift is the creation of a demand-based model for development and dissemination of climate and agriculture related information and services for vulnerable communities, including small-holder farmers, fishers and flood prone communities. The project is on track to contribute towards this paradigm shift.

The addition of AWSs and Hydro-stations have improved the collection of hydro-met data from a wider geographical area. The total geographical area covered by AWS has increased from 21% to 38 % with the addition of 33 new AWSs. Similarly, the total geographical area covered by hydrological water level stations has increased from 28% to 65%. The lightning detection system covers 100% of the geographical area of Malawi. The improved coverage has contributed to systematic collection of meteorological and hydrological data which will improve the forecast quality. The improved coverage has already enabled DWR to monitor water levels in the key rivers in the Central region of Malawi. Digitization of weather data enabled DCCMS to generate district specific seasonal forecasts with greater accuracy, which is now being used by thousands of small-holder farmers in 10 districts. The approach to installation of the hydro-met equipment is also unique to the Malawi context. The installations were done following a nationwide survey to identify gaps in the existing observation network, assessment of potential environmental and social impacts related to the installation of equipment and a series of community meetings to ensure safety of the equipment. The data collected from the enhance observation system will feed into weather forecasting models and once linked to a dissemination system will benefit a large section of the vulnerable population of Malawi. The newly installed weather data integration and processing system has enabled the forecasters in the department to integrate numerical weather products with satellite-based information and created a user-friendly platform to process and disseminate weather information. The investments brought about a positive change and the hydro-met departments and they are now confident in their capability to generate timely and reliable weather information for vulnerable communities. With the expansion of the infrastructure and through capacity building of hydro-met staff the project has created the potential for replication and scale of these impacts to other parts of the country.

There is now a better understanding among government partners at national and district levels respecting the climate information needs of the project beneficiaries, including the kind of weather information the communities currently receive vis-à-vis their needs, issues around accessing and understanding the messages their usefulness. The information has helped the project partners to devise appropriate strategies to reach the vulnerable communities with the much-needed information. For example, fishers want information on wind speed, direction and wave conditions on an hourly basis to help them decide on their fishing schedules, while fish-processors who are predominately women require information on precipitation, wind and sun light to plan their activities which revolve around solar-drying of fish. In rural markets characterized by small margins, severe or unpredictable weather can wreak havoc on the profit potential of smallholders and fishers. Similarly, smallholder farmers wished to know

locations specific rainfall projection and the impact of the projected weather on their crops. Access to information remains a big challenge in Malawi due to low penetration of mobile network, with for example many fishing villages beyond the reach of mobile phone network. The ownership of smart phones among farmers and fishers is relatively low and a sizeable number of people have issues charging their phones regularly due to access to electricity. The information derived from the studies has informed the project partners in designing strategies and tools to formulate and disseminate information to vulnerable communities. The approach to dissemination of weather information to farmers has undergone a big change with district extension workers trained as expert trainers to provide information to the lead-farmers in the communities, who in turn take the information to fellow farmers in their communities. The approach of working with farmers has enhanced the confidence of extension workers to talk about livelihoods and farming with communities and resulting in enhanced social standing in their communities. The project is on course to deliver transformative change in how people in Malawi use climate and weather information to make decisions and informed choices that affect their livelihoods and lives. The flood forecasting system which is under development will be complemented by standard operating procedures for flood monitoring, forecasting and warning dissemination. The operating procedures will lay down institutional responsibilities with regard to flood monitoring, forecasting and warning dissemination and communications strategies that include the effective issuance and packaging of early warnings, as well as the creation of tailored communications products and outreach efforts to bring about a change in how targeted beneficiaries apply weather data to inform decisions that directly impact on their lives and livelihoods.

Community-led flood forecasting will also have system-wide impacts by demonstrating that the communities can monitor the river levels at upstream locations and alert downstream communities about an impending flood and/or rising water levels. The initiative will be complemented through raising the awareness of communities on flood hazards as well as implementation of flood risk reduction and management measures that includes community level vulnerability and risk assessments, and development of local level flood risk management measures. The community owned and managed initiative is expected to bring about a change in the approach to flood management. The project is on track to induce a paradigm shift in the climate-informed national risk reduction and early warning strategies which will catalyse and scale up the use of climate-risk information and approaches across all government sectors.

The institutional coordination among partner agencies has increased many folds through the implementation of the project. DCCMS took a lead role in training staff from Department of Fisheries on climate change and weather hazards. The development of weather advisories for fishers and fish-processors was jointly drafted by DOF and DCCM. Similarly, experts from DCCMS, DAES and NASFAM worked together and produced agro-met advisories for farmers in 10 districts. A joint team comprising of DoDMA, DCCMS and DWR undertook a scoping mission and produced a technical report that informed development of a terms of reference for establishing community-based flood early warning system in 8 districts. A joint team comprising of experts from the partner agencies spear-headed the dissemination of seasonal forecasts in 14 districts and facilitated development of sector specific response plans. The vertical coordination between national and sub-national offices and structures has been further strengthened as the project requires the national agencies to work with the sub-national systems. During the reporting period, a number of capacity building activities were conducted for the sub-national staff that includes training of district and sub-district level staff on DRM and climate change in 8 districts and training of agriculture extension officers in PICSA approach in 10 districts. The project through enhanced coordination and synergies among the various agencies has enabled linkages across DRM and climate change adaptation sector.

### **2.2.3 Sustainable development potential (max one (1) page).**

The project is on course to deliver sustainable development benefits to vulnerable communities. The economic co-benefits of the project are already visible for farmers who were reached with seasonal forecasts in 2019 and reported increases in agricultural income owing to better application of weather data to guide their crop production. This initiative is directly linked to capacity building of DCCMS office that was supported to generate reliable and area specific forecasts through training (use of historical climate record to produce climate summaries, including such as start and length of rainy season and duration of dry spells) and digitization of weather data (that assisted DCCMS to produce time series graphs and tables). More than 150,000 farmers were reached in 2019 with seasonal forecast

which will have a positive impact on their livelihood and income. The expansion of the hydro-met infrastructure will reduce disaster related losses by providing flood alerts and inclement weather warnings. The scaling up of the flood monitoring and forecasting systems to flood prone rivers in the Central and Northern region will benefit a large number of people who will have access to flood alerts.

The project is on course to provide economic co-benefits to the fishing sector through provision of tailored weather information which will improve management strategies linked to fishing, fish processing and trading. The installation of lake-based weather buoys was completed, and the buoys are now transmitting data to DCCMS which will be used for wind and wave modelling. The lake is also a source of water for both domestic use in major urban areas and for agricultural irrigation. While collected weather, wave and current data will be used for early warning purposes for lake users, the data in relation to water quality parameters such as salinity, turbidity and dissolved oxygen will be used to monitor their changing levels and consequent effects on fisheries and health.

The lightning detection sensors and system that was installed by the project tracks thunderstorms and provides thunderstorm and lightning alerts. The information from buoys and LDS is critical to generate alerts for fishers who currently do not have access to information on inclement weather which often results in fatal accidents in the lake. The fish-processors value weekly / ten-day weather forecast to better plan their activities. It has been reported by the fish-processors that, they often incur financial loss due to rainy/cloudy weather. Since the fish processors are dependent on the weather (sun and wind) they incur financial losses when adverse weather conditions prevent them from drying the fish. Hence by providing weekly weather forecast the project is expected to prevent and reduce economic losses.

The social benefits of the project are already visible following the streamlining of climate information services. The community perception towards agriculture extension service has received a positive boost with the extension workers reporting a high degree of confidence in their capacity to deliver extension services to the farmers. Similarly, lead farmers have reported enhanced social standing in their communities for being able to provide weather advisories to fellow farmers in their communities. The extension workers and farmers reported that the agro-met forecast that was provided to them was timely and accurate which is a critical indicator of their trust in hydro-met agencies. The confidence of the hydro-met agencies to generate timely and area specific weather information has been positive following the expansion of the infrastructure and training.

The project is on track to provide environmental co-benefits. The expansion of hydro-met infrastructure will generate information for better management of floods and drought. The expanded meteorology infrastructure has already enhanced the capacity of DCCMS to monitor the weather conditions across the country. Similarly, water level monitoring has improved through installation of hydro-stations. The small holder farmers in 10 districts now have access to weather information to adapt their practices in relation to land, water and crop management.

The project has additionally focussed on co-benefits pertaining to gender aspects. During the reporting period a total of 264 agriculture extension workers (28% % of whom are women) were trained in the PICSA methodology. Out of the 16,702 lead farmers trained on how to interpret and use seasonal forecast information in farm decision making 53 % are women which will, consequently, empower women farmers to increasingly participate in farm decision making. The project has also trained a number of female staff from hydro-met agencies on the operation and maintenance of the equipment.

#### **2.2.4 Needs of the recipient (max one (1) page).**

The needs of the recipient remained unchanged during the reporting period. The project is aligned to the GoM's strategy including the Malawi Growth and Development Strategy III, and the National (Climate) Adaptation Programme of Action. The project has invested in supporting GoM's strategies to upgrade the hydro-met observation networks and upscale the capacity of hydro-met agencies in operation and maintenance, analysis, interpretation and packaging of weather and climate data for vulnerable sectors. The support provided through the project to the hydro-met agencies, including the expansion of the hydro-met infrastructure and capacity building of the hydro-met staff



in O&M, was highly appreciated by government partners. The expansion of the hydro-met infrastructure has already enhanced the temporal and spatial weather observation capability of DCCMS and DWR which is critical for generating area specific and reliable weather information and warnings. In order to ensure seamless functioning of the equipment, relevant staff from the departments were trained in O & M and calibration.

Development of tailored weather products that meet the needs of project beneficiaries and access to these products are in high demand. Seasonal forecasts were made available to farmers through an approach that delivers the information directly to smallholder farmer. Farmers also receive short-term agro-met advisories on their cell phones through SMS. The drafting of the weather advisories of farmers and fishers was informed by the weather needs assessment conducted in collaboration with a representative sample of farmers and fishers. The project approach to developing products and information that meets the need of the beneficiaries and strengthening the extension services and various dissemination channels to ensure 'last mile delivery' is well appreciated by project stakeholders.

Capacity building of the vulnerable communities to receive and act upon the information/warning is a key component of the project and the project has already made progress towards building the capacity of the communities. Members of Village Protection Committees, who are frontline disaster managers were trained in climate change and disaster management. Through an outreach program people involved in fishing activities and member of village committees in the fishing communities were trained on weather hazard and safety. Through a scoping mission capacity building needs of flood vulnerable communities were assessed and the community-based disaster preparedness initiative in the 8 flood prone districts will include capacity building activities to enable the communities to effectively respond to a flood early warning. The capacity building activities include practical aspects of flood risk management i.e., evacuation planning, development of local level risk maps and implementation of risk reduction plans. The decisions makers and managers in 14 districts were provided with seasonal forecast and its likely implication on key sectors, following which management strategies were developed to deal with climate hazards such as flooding and drought which was received very well.

In order to ensure that the project is meeting the impact potential and needs of the recipient an Impact evaluation framework was developed to evaluate the impact of the project based on the theory of change and a robust baseline was established for subsequent quantitative and qualitative impact evaluation studies i.e. at midterm and end line. The development of impact evaluation framework was closely supported by the Independent Evaluation Unit of GCF through the Learning-Oriented Real-Time Impact Assessment (LORTA) programme. An impact evaluation of the PICSA approach will be conducted in June 2020 to evaluate the effectiveness of the initiative.

### **2.2.5 Country Ownership (max one (1) page).**

The project was designed and developed with full ownership of the GoM through series of consultations with stakeholders working in the space of climate information and early warning systems. Stakeholder consultations were held with government agencies, UN partners, NGOs, CSOs and private sector actors, culminating in a concept note and full proposal. The project is built on achievements and learnings from ongoing and past projects supported by UNDP and other bilateral partners. The NDA played a critical role in the development of the project.

During the reporting period, the participating agencies remained highly committed in the implementation of the project led by DoDMA that provided adequate coordination support to the project. The high rate of budget utilization and achievement of key milestones during the year 2019 are testimony of the commitment of the project partners to the project. Inter-agency coordination led to the successful implementation of many project activities including co-production and dissemination of weather advisories that required various agencies to work together. Additionally, the implementing partners committed considerable staff time to implement project activities.

The project progress was reviewed periodically by the Project Technical Committee comprising of technical specialists and advisors from project partners and the committee provided technical guidance in relation to various components of the project. The progress under the project was also presented to the Technical Committee on Climate Change and Disaster Management, which is chaired by the Chief Secretary to the Office of the President and

Cabinet and comprised of all Heads of Government Ministries and co-opted non-government stakeholders working in the area of climate change and disaster risk reduction in Malawi.

The project also worked with UN partners including WFP and FAO to down-scale the national seasonal forecast for the 2019-2020 rainfall season at district and sub-district levels.

### **2.2.6 Efficiency and Effectiveness (max one (1) page).**

The project partners contributed to the implementation of the project through co-financing support which was specifically used for supporting activities related to project including conducting training of agriculture extension officers in dissemination of agro-met forecasts to small holder farmers, development and dissemination of agro-met advisories to project beneficiaries, installation of hydro-met equipment, digitization of meteorological data and production and dissemination of downscaled seasonal weather forecasts, assessment of community level flood early warning systems, assessment of disaster risk reduction needs of schools in targeted project districts and training of project stakeholders on disaster and climate risk management. The co-financing support underlines the commitment of the partners to the project. Furthermore, UNDP has funded additional co-financing for an amount of \$100,000 in 2019 which is on top of the agreed FAA activities/budget for co-finance. This additional funding was used to procure a 25KW solar standby power system to support the seamless operations of DCCMS which houses a number of servers and critical systems that require uninterrupted power supply.

The project has invested a huge amount of resources to expand coverage of the hydro-met infrastructure. The cost of O & M of the newly installed infrastructure is minimal as they are under warranty and, in the event of break-down, can be serviced quickly by national hydro-met staff who were trained in O & M. While it is expected that, following the closure of the project, the regular O & M of the equipment will be carried out by the respective agencies through their departmental budgets. The project will explore the potential of private sector contributions to the upkeep of the infrastructure in return for receipt of tailored climate services. This will be done in 2020 through the assessment of the climate information needs of the private sector which will inform development of tailored and value-added products to meet their requirements. This will potentially generate revenue and support the project in the long run. Following the installation of all the equipment, an operation and maintenance plan will be developed to sustain the functioning of hydro-met equipment beyond the project period.

The project uses the existing systems and networks of partners to implement project activities which not only reduce transactional costs but also strengthen existing networks and systems. The project reached more than 150,000 farmers in 10 districts through the existing network of DAES and NASFAM. Similarly, the community outreach unit within DoF has been capacitated with by provision of IT and communication equipment and training to produce materials and information for fishers and fishing communities. The frontline staff of DoDMA and members of village and area disaster protection committees were trained in climate change and disaster management using the existing government structure. As stated earlier the courses were specifically designed for the frontline staff and a cadre of staff were trained as trainers to impart training at the district and sub-district level.

Over the next 18 months, the project will trial dissemination systems for lighting alerts and alerts/advisories for fishing sector and explore the possibility of collecting user fees to sustain the services beyond the project.

2.3 PROJECT OUTPUTS IMPLEMENTATION STATUS <sup>3</sup>			
Project Output	Project Activity	Status <sup>4</sup>	Implementation progress (%) <sup>5</sup>
<b>Output 1: Capacity of hydro-met networks and staff enhanced to generate climate-related data and forecast extreme weather and climate change</b>	<b>Project Activity 1.1 Expanding coverage of Meteorological and hydrological infrastructure</b>		Activity Started - progress on track
	<p>The project supported the expansion and scale-up of the hydro-met infrastructure through procurement and installation of 33 automated weather stations, a lightening detection system including 8 sensors spread across Malawi, 2 lake-based weather buoys and a weather data integration and processing system. The installation of the equipment was completed following a series of meetings with community to sensitize them about the project in general and use and safe keeping of equipment. Community sensitization meetings were held at all the locations prior to the installation of the AWSs which was attended by village heads and community representatives including women, youth and faith-based groups. 5 AWSs were installed by the supplier in partnership with engineers from DCCMS that capacitated the DCCMs engineers to install and commission the equipment, following which the rest of the AWSs were installed by DCCMS engineers. All the AWSs are operational and sending weather data to the central server located at the DCCMS headquarters. The LDS comprises of 8 sensors, a server and a visualization system. The sensors were installed by the supplier with DCCMS staff and then connected to the server and visualisation system, following which the entire system was handed over the DCCMS. The 2 lake-based weather buoys were also installed by the suppliers in collaboration with number of agencies (DCCMS, DOF, DWR and Marine Police) and following community sensitization. The weather data integration and processing system includes two servers, six monitors, software and other peripherals. Following the installation of the system, DCCMS staff were trained to operate the system as a weather information processing tool, more specifically to enable integration of numerical weather products with satellite-based information and local observations for accurate and timely prediction of weather forecasts and warnings.</p>	<ul style="list-style-type: none"> <li>Regular O &amp; M of Automated Weather Stations, Lake Buoys and Lighting Detection Sensors</li> <li>Continue sensitization of the communities to minimize vandalism of equipment</li> <li>Implement recommendations of social and environment management plan pertaining to the hydro-met infrastructure.</li> </ul>	<b>75%</b>
	<b>Project Activity 1.2 Capacity-building of hydro-met staff on O&amp;M, data modelling, and forecasting.</b>		Activity Started - progress on track

<sup>3</sup> Outputs and Activities reported here should be aligned with the Activities in the Logic Framework and Implementation Timetable of the project.

<sup>4</sup> Activity Not Yet Due; Activity Started -ahead of schedule; Activity started – progress on track; Activity started but progress delayed; Activity start is delayed.

<sup>5</sup> Implementation progress on a cumulative basis as of the date of the report.

	<p>A series of training were completed to build capacity of hydro-met staff on O&amp;M, data modelling and forecasting. 24 f technical staff from DCCMS and DWR were 'factory trained' in the assembly and installation of hydro-met equipment. Following which in-country trainings on operation and maintenance were conducted for staff of DCCMS and DWR. The number of staff who were 'factory trained' and receive in-country training is listed below;</p> <ul style="list-style-type: none"> <li>• 6 Number of DCCMS staff 'factory trained' in the installation and assembly of AWS in South Africa</li> <li>• 6 Number of DCCMS staff trained in O&amp;M of AWS in Malawi</li> <li>• 3 Number of DCCMS staff trained in installation and assembly of lake buoys in Germany</li> <li>• 3 Number of DCCMS staff trained in the operating system of the LDS in Germany</li> <li>• 12 Number of DCCMS staff trained in the operation of LDS system in Malawi</li> <li>• 6 Number of DCCMS staff trained in the system administration of Synergy Web system in France</li> <li>• 6 Number of DCCMS staff trained in the operation of the Synergy web system in Malawi</li> <li>• 6 Number of DWR staff 'factory trained' in the assembly and installation of hydrological water level stations</li> <li>• 51 Number of DWR staff trained in the O&amp;M and installation of hydrological water level systems in Malawi.</li> </ul> <p>A total of 13 staff from DCCMS were trained in production of seasonal forecast by using R-Insta statistics package which facilitates the generation of summaries such as the start and length of rainy season or the duration of the dry spell using data from weather stations. This has facilitated DCCMS to produce downscaled seasonal forecast at district and sub-district level for the use of various sectors. During the reporting period DCCMS was through the support to 6,850 years of rainfall data that number 2.500,000 entries into CLIMSOFT software. This has ensured that there are no temporal data gaps from year 2000 onwards. This has improved the DCCMS capacity to produce more reliable and area specific seasonal projections. A 25 KW solar standby power system was procured to support the seamless operations of DCCMS which houses a number of servers and critical systems that require uninterrupted power supply. The specifications for the power back up system were developed following a detailed load assessment of the DCCMS.</p>	<ul style="list-style-type: none"> <li>• Capacity building and training of DCCMS staff for tailored product development for fishers and farmers</li> <li>• Development of an alert dissemination system for thunderstorm and lighting</li> <li>• Training of staff at DWR in flood forecast and water resource modelling</li> </ul>	
<p><b>Output 2: Tailored climate information/products and decision-support platforms developed</b></p>	<p><b>Project Activity 2.1. Develop tailored weather/climate based agricultural advisories for 14 food insecure districts and disseminate through ICT/mobile, print, and radio channels</b></p> <p>PICSA approach was scaled out to 6 new districts, taking the total number of districts covered under the approach to 10. A survey was conducted in 6 new districts and information relating to the crops grown and livestock kept by the farmers were collected. The information was entered into the database that was established in 2018, taking the total number of farmers profiled to 18,980 out of which 40% are women. A total number of 27 officials that included</p>	<p>Activity Started - progress on track</p>	<p><b>40%</b></p>
		<ul style="list-style-type: none"> <li>• Scaling out of PICSA approach to 4 new districts</li> <li>• Training of 120 additional agriculture extension workers in PICSA approach</li> <li>• Training of 4,000 lead farmers in PICSA approach</li> <li>• Dissemination of seasonal forecast to 200,000 farmers in 14 project districts</li> </ul>	

<p><i>and disseminated for agriculture, fisheries, and flood risk management</i></p>	<p>7 women staff drawn from the districts were trained as expert trainers in the PICSA approach taking the number of expert trainers to 60. Intermediary and refresher trainings were conducted in 6 districts and 4 districts respectively covering 264 extension workers of whom 28 % are women who in-turn trained 16, 702 lead farmers of whom 53 % are women) in interpretation of historical climate data, seasonal forecast and short-term forecast information and facilitated planning sessions with farmers to develop management options in the context of the seasonal forecast. The lead farmers further disseminated the information to 167,020 number of small-holder farmers in their communities for making farm decisions based on the projected seasonal weather forecast for their area. The PICSA training manual was translated from English to Chichewa language and used in the training programs. Short term weather forecasts were provided to 10,527 farmers in 10 districts through mobile text messaging services (SMS). DCCMS was supported to downscale seasonal forecast for all the 29 districts in Malawi. The forecast predicts weather anomalies at monthly intervals up to 7 months (October to April) and contains information on start and length of rainy season, duration of dry spells and monthly rainfall projections. Besides, disseminating the seasonal forecast to the small-holder farmers in 10 districts the project supported the dissemination of the information to district officials and stakeholders in 14 district and facilitated the development of sector specific plans in light of the seasonal forecast.</p>	<ul style="list-style-type: none"> <li>• Development of short-term and medium term agro-met advisories for farmers</li> <li>• Development and dissemination of seasonal forecasts for farmers</li> </ul>	
<p><b><i>Project Activity 2.2 Develop and disseminate tailored warnings and advisories for fishing communities of Mangochi, Salima, Nkhata Bay and Nkhotakhota around Lake Malawi</i></b></p>		<p>Activity Started - progress on track</p>	<p>25%</p>
<p>A profiling exercise was successfully conducted to establish a data base of 2329 number of fish traders. This database was established in addition to the database of 6,975 fishers and processors which was established in 2018. The information collected through the exercise will help DoF to design strategies to reach fishermen, fish processors and fish traders with weather information/alerts tailored to their needs.</p> <p>A lighting detection system was installed that detects thunderstorms and lightning strikes in real time. A dissemination system is being designed to link the LDS system with a SMS based dissemination systems to alert fishers and lakeshore. 2 lake-based weather buoys were procured and installed in Lake Malawi to collect weather, wave and wind information in the lake which is vital for developing weather advisories for lakeshore communities. Besides, the buoys collect water quality data including salinity, turbidity and dissolved oxygen that has an effect on the fish population in the lake. The information on water quality parameters will be used to monitor their changing levels and consequent effect on fisheries.</p> <p>Drafting of the weather advisories for fishers and fish-processors was completed and a SMS based platform is being set up to provide regular weather updates/advisories to the target audience. DOF conducted an awareness campaign to educate the fishing communities about hazardous weather and promote safety in the lake. The campaign reached 4486</p>		<ul style="list-style-type: none"> <li>• Establish and test systems / platform for development and dissemination of climate / weather information for fishers and other players in fishing business.</li> <li>• Continue capacity building of the capacitate the Community Outreach Unit to interpret, package and disseminate weather/climate information for the fishing communities.</li> <li>• Establishment of a system for regular information sharing between DoF and DCCMS on the water quality of the lake</li> <li>• Development and dissemination of awareness products to improve safety of the fishers in the Lake</li> </ul>	

	<p>number of people in four districts. 926 number of people who are members of the beach village committees responsible for implementation of fisheries extension programs, were also reached through the awareness and training campaign. The capacity of the community outreach unit of the DOF, which is responsible for the designing and implementation of outreach programs in the fishing communities was strengthened. 26 staff from DoF that includes staff from the community outreach unit were trained in climate change, its implications on the fishing sector and safety of fishers. IT and communication equipment were provided to the unit which will be used for developing campaign materials to promote safety in the lake and relevant products for the fishing communities. The procurement of a boat to support the operation of DOF was completed. The boat will mainly be used for maintenance of weather/wave buoy installed on lake Malawi and implementation of fishing regulations.</p>		
<p><b><i>Project Activity 2.3. Develop and deploy the flood and water resource modelling and decision support system to enhance coverage for disaster risk and water resource management</i></b></p>		<p><i>Activity Started - progress delayed</i></p>	<p><b>25%</b></p>
	<p>Steady progress has been made with regard to improving monitoring of river levels in the northern and central regions of Malawi. Procurement of the 37 hydro-met systems was completed following which, a tender was lunched for the construction of data collection platforms (DCPs) to host the systems. During the reporting period, 15 DCPS were constructed and 15 systems were hosted in the DCPs to monitor water levels of major flood prone rivers in the Central region of Malawi. 6 staff from DWR were ‘factory trained’ in the assembly and installation of hydro-stations in Germany. The supplier of hydro-stations also conducted a training in Malawi on installation, O &amp; M and commissioning of the equipment and associated telemetry system which was attended by 51 number of DWR officials that included staff from the districts. The project intends to expand the flood forecasting functionality of the Operational Decision Support System (ODSS) to river basin catchments in the central and northern region of Malawi which was installed as part of Shire River Basin Management Programme (SRBMP) by world bank. Following a review of the system it was decided to expand the flood forecasting functionality of ODSS (through incorporating weather forecasts and automating monitoring data from AWS and hydrological sensors), in a phased manner. In the first phase the system will be expanded to cover two river catchments (Linthipe and Bua) in the Central region of Malawi. A consultant has been hired to support DWR in this endeavour which includes development, calibration and operationalization of hydrological models, configuration of a flood alert dissemination system, evaluation and integration of the system into the existing ODSS platform. There is a need for digitization of water level data to develop various flood models. A training was conducted by DWR for its staff to interpret water level graphs and charts, record peak water levels, calculate and record monthly mean water level, create files and archive the files in the HYDSTRA which is a data management system for building and maintain time series data used by DWR.</p>	<ul style="list-style-type: none"> <li>• Construction of 22 additional data collection platforms</li> <li>• Installation of 22 hydro station</li> <li>• Development of protocols for flood monitoring (by both communities and DWR), forecasting and warning and tailored flood EWS products for vulnerable communities</li> <li>• Establishment of a flood monitoring and forecasting system in two river catchments</li> <li>• Training of relevant staff in the operation and maintenance of the flood forecasting system</li> <li>• Digitization of hydrological data.</li> </ul>	

	<p><b>Project Activity 2.4. Enable a demand-based model for climate information and services stimulating private sector engagement</b></p> <p>The project has progressed well in the use of existing mobile platforms for dissemination of agro-met advisories by supporting NASFAM to use FRONTLINE SMS services. During the reporting NASFAM agro-met advisory to 4377 farmers though through the Frontline platform. DAES used the platform to disseminate agro-met advisories to farmers and reached 6150 number of farmers in 5 districts. Two new SMS platforms are being established to disseminate lightning/thunderstorm alerts and weather advisories/warnings to fish processors and fishers. The engagements with telecom sectors will be strengthened for cost effectively dissemination of climate and weather advisory.</p> <p>The expansion of infrastructure has enhanced the confidence of DCCMs to produce and package tailored advisories for private sector. While capacity building of the DCCMs in data modelling and forecasting continues in 2020, a study is planned to gauge the agro-climate needs of micro and small enterprises (MSEs) involved in agriculture and fishing businesses which will inform development of value-added products for the MSEs. This will potentially catalyse engagement of MSEs in the project and create an opportunity for revenue creation for DCCMS.</p>	<p><i>Activity Started - progress on track</i></p> <p><b>25%</b></p> <ul style="list-style-type: none"> <li>• Strengthen engagement of NASFAM/DAES with mobile service providers on distribution services and ways to reduce costs, bulk SMS</li> <li>• Dissemination of seasonal forecasts to 10,000 farmers in 14 districts through mobile platforms</li> <li>• Development of mobile plat forms for dissemination of weather information and alerts to fishers</li> <li>• Conduct research to understand weather /climate information needs of private sector in Malawi including a market feasibility study to assess the demand and willingness –to-pay for climate services.</li> </ul>
	<p><b>Project Activity 2.5. Knowledge sharing and management for development, dissemination, and use of EWs and CI to enhance resilience</b></p>	<p><i>Activity Started - progress on track</i></p> <p><b>25%</b></p>
<p><b>Output 3: Communities capacities strengthened for use of EWS/CI in preparedness for and response to climate related disasters</b></p>	<p>A number of radio and television programs and skits were developed in local languages and English on climate and flood risk management and broadcasted throughout the country. DOF produced IEC materials on weather hazards and safety that were used extensive in the awareness campaign conducted by DOF in 4 lakeshore districts. The community outreach unit of DOF was supported to develop awareness materials through provision of IT and communication equipment including laptops, desktops, printers, scanners and digital cameras. Staff capacity building of the DCCMS progressed well with provision training to staff on how to manage, access and use weather/climate information and in statistical analysis of these data. The downscaled seasonal forecasts were produced by DCCMS and then translated in a local national language (Chichewa). The products were then printed and disseminated widely. Climate forecasts including historical rainfall information, rainfall projections for the 2019-2020 farming season and farming and</p>	<ul style="list-style-type: none"> <li>• Development of short-term crop and season specific weather and agriculture information packages for smallholder farmers including women engaged in farming in 14 districts</li> <li>• Development and dissemination of seasonal forecasts in 14 districts through different media including radio, telecom platforms, print media and meetings</li> <li>• 14 number of training covering 320 extension workers in 14 project districts in the interpretation and dissemination of agriculture information</li> <li>• Development and dissemination of awareness messages and weather products for fishers and farmers</li> </ul>

	<p>livelihood options for farmers based on the projections were jointly developed and disseminated to extension workers and smallholder farmers in 10 districts as part of the PICSA initiative. The PICSA manual was translated from English to Chichewa and used extensively in the training of extension workers and lead farmers. Three tailored courses were developed for frontline disaster managers a DRM training manual was translated from English to Chichewa, printed and disseminated widely. The project supported the review and finalization of the DRM communication strategy to create awareness on disaster risks and promote positive behaviours to mitigate the risks.</p> <p>A team of six officials from the Department of Agricultural Extension, National Smallholders Farmers’ Association of Malawi, the Department of Climate Change and Meteorological Services and UNDP Malawi visited Kenya, to understand how climate information is packaged and disseminated to farmers and other stakeholder to help them in their farming decisions. The team learnt best practices, experiences and challenges from a diverse group of experts how to bring together different tools and systems in disseminating weather and climate information that could potentially help farmers to manage weather risks to maximize productivity.</p> <p>A government to government exchange visit was supported through the project. A team comprising of 10 senior officers from DoDMA was hosted by the National Disaster Management Centre of South Africa. The purpose of the exchange visit for the Malawi delegate was to learn best practices in relation to flood risk management. The team also visited an Emergency Operation Center to get a first-hand knowledge about the operations of an EOC especially the command and control facilities and equipment and tools and systems used for disaster management.</p>		
	<p><b>Project Activity 3.1. Scale-up community-based EWS in flood-disaster prone areas of Karonga, Salima, Dedza, Nkhatakota, Nkhata Bay, Rumphi, Phalombe and Zomba</b></p>	<p>Activity Started - progress on track</p>	<p><b>25%</b></p>
	<p>One of the objectives of this specific component is to scale-up community based early warning systems in flood-disaster prone through awareness raising on flood hazards and vulnerabilities, installation of automated rainfall and hydrological monitoring and telemetry system and implementation of flood risk reduction and management measures that includes community level vulnerability and risk assessments, development and implementation of local level flood risk management measures.</p> <p>Good progress was registered in the implementation of the activity. A technical team comprising of experts from DCCMS, DWR and DODMA conducted a comprehensive</p>	<ul style="list-style-type: none"> <li>• Procurement of a firm for the establishment of CBEWS project in 8 districts</li> <li>• Installation of low-cost flood monitoring and telemetry system in 33 locations</li> <li>• Flood calibration and establishment of alert thresholds at identified locations</li> <li>• Training of the local communities in the O&amp;M of the system.</li> <li>• Broadcasting of radio programs on DRM and Climate Change to raise awareness of communities on hazards and vulnerabilities</li> <li>• Establish and train village and inter-district alliances (up-stream and down-stream) in flood risk management</li> </ul>	



	<p>assessment covering 8 districts that identified flood prone rivers and communities, potential locations for the instalment of flood alert systems. The team also drafted specifications for a low-cost, easily maintainable and reliable telemetry system for monitoring the river levels and the dissemination flood alerts. Based on the information obtained from the technical report a term of reference was prepared for the establishment of a community-based flood early warning systems. A request for proposals was launched to select a suitable firm which will be responsible to design appropriate CBEWS, as well as provide suitable, low cost and simple solutions on how best to measure river levels at upstream locations, and generate alerts to the downstream communities about an impending flood and/or rapidly rising water levels. The firm will be responsible for supply, transportation, assembly and installation of the CBEWS systems/equipment at identified locations. The firm will also be responsible for calibration of flood warnings based on water levels at upstream locations and development of a telemetry system to automatically alert people in the downstream locations. The implementation of risk reduction measures at the community level will be done following the installation of the flood monitoring and telemetry system. A partnership strategy to implement the CBEWS project is being finalized in consultations with the authorities.</p> <p>In order to enhance the awareness of communities on hazard and vulnerability a range of radio and TV programs and skits were developed that includes 18 radio jingles/skits, 5 TV jingles and skits. A nationwide awareness campaign was conducted using TV and Radio that reached millions of people across the country.</p>		
<p><b><i>Project Activity 3.2. Capacity development of national, district and community level actors on disaster and climate risk management</i></b></p>		<p><i>Activity Started - progress on track</i></p>	<p><b>25%</b></p>
	<p>Good progress was registered under this activity that includes strengthening the emergency operation centres and capacity building of state, district and community level actors on disaster and climate risk management.</p> <p>The project partnered with Malawi University of Science and Technology (MUST), which is a premier academic institution in Malawi for the development of tailored short courses for frontline disaster managers and train cadre of government officers as expert trainers to impart the training. As a result, a one-week course containing 3 modules was developed. A team comprising of 20 officials from various departments were trained as expert trainers by the MUST. The expert trainers conducted a series of training for selected members of area and village civil protection committees who are responsible for managing emergencies and coordination of DRM initiatives at that level. A total number of 208 people were trained under this initiative to effectively lead risk reduction initiative in their communities.</p>	<ul style="list-style-type: none"> <li>• Establish 3 district EOCs 3 E, including training and procurement of materials communications equipment and office supplies</li> <li>• Support establishment of school-based DRM programs</li> <li>• Training of frontline DRM managers and capacity building of district councils to lead and implement risk reduction program.</li> </ul>	

	<p>Under the school DRM programme,20 number of school staff from selected districts were trained in the DRM and climate change, following which an exposure visit was organized to schools that are already implementing DRM activities that includes afforestation programs, and awareness raising of communities on climate change, sanitation and hygiene through songs and music. The initiative will continue and schools in the project districts will be supported to implement school-based DRM initiatives.</p> <p>A prototype of an emergency operation centre was designed following consultations with various stakeholders. Procurement was completed to construct the prototype in one of the hazard prone districts, which will be equipped with IT and emergency communication equipment to enable the district authorities to better coordinate a disaster response. The EOC will act as the disaster coordination hub at the district level.</p>	
--	--	--

## 2.4 PROGRESS UPDATE ON THE LOGIC FRAMEWORK INDICATORS<sup>6</sup>

### 2.4.1 PROGRESS UPDATE ON FUND-LEVEL IMPACT INDICATORS OF THE LOGIC FRAMEWORK

<i>Fund-level impact Core indicators<sup>7</sup></i>	<i>Baseline</i>	<i>Current value<sup>8</sup></i>	<i>Target (mid-term)</i>	<i>Target (final)</i>	<i>Remarks (including changes<sup>9</sup>, if any)</i>
<b>A1.0 Increased resilience and enhanced livelihoods of the most vulnerable people, communities, and regions: Total number of direct and indirect beneficiaries (% of whom is female)</b>	Total (912,600) of which 30% female)	1,678,552	Total (1,500,000 of which 40% female)	Total (3,000,000 of which 50% female)	The number includes people those are indirectly benefitting from improved forecasting system due to enhanced hydro-met coverage and direct beneficiaries of PICSA. The number also includes people reached through various awareness campaigns.
	238,000 (direct)	421,702(direct)	500,000 (direct)	1,600,000 (direct)	The increase in direct beneficiaries is attributed to 183,702 (53% females) farmers reached through PICSA initiative in 10 districts.
	675,000 (indirect)	1,256,850 (indirect)	1,000,000 (indirect)	1,400,000 (indirect)	The number of indirect beneficiaries has increased due to the enhanced hydro-met coverage. The figure also includes people who were reached through various awareness campaigns.
<b>A1.0 Increased resilience and enhanced livelihoods of the most vulnerable people, communities, and regions: Percentage of beneficiaries relative to total population in Malawi</b>	6%	10.3%	9%	18%	The increase in percentage is attributed to increase in direct beneficiaries as explained above.

### 2.4.2 PROGRESS UPDATE ON PROJECT/PROGRAMME LEVEL INDICATORS OF THE LOGIC FRAMEWORK<sup>10</sup>

<i>Project/Programme indicators (Mitigation/Adaptation)</i>	<i>Baseline</i>	<i>Current value<sup>11</sup></i>	<i>Target (mid-term)</i>	<i>Target (final)</i>	<i>Remarks (including changes<sup>12</sup>, if any)</i>
<b>A7.0 Strengthened adaptive capacity and reduced exposure to climate risks</b>					

<sup>6</sup> Per the approved methodology in and the Logic Framework in the Funding Proposal, please provide an update on the relevant indicators.

<sup>7</sup> As per the relevant indicators established in the Funding Proposal and the Performance Measurement Framework, including all indicators approved by the Board and relevant updates agreed with GCF, if applicable.

<sup>8</sup> As of 31 December, of the relevant year.

<sup>9</sup> Related to the approved indicators and targets in the Logic Framework.

<sup>10</sup> As per the relevant indicators established in the Funding Proposal and the Performance Measurement Framework, including relevant updates agreed with GCF, if applicable.

<sup>11</sup> As of 31 December, of the relevant calendar year.

<sup>12</sup> Related to the approved indicators and targets in the Logic Framework.

Number of males and females reached by climate-related early warning systems and other risk reduction measures established/strengthened.	238,000 (of which 30% female)	421,702 (of which 30% female)	500,000 (of which 40% female)	1,600,000 (of which 50% female)	During the reporting period 16,702 lead farmers were trained in the interpretation of historical climate data, seasonal forecast and short-term forecast information and facilitated planning sessions with 183,702 farmers to develop management options in the context of the seasonal forecast
<b>1. Capacity of hydromet networks and staff enhanced to generate climate-related data and forecast extreme weather and climate change</b>					
Percentage of national coverage of climate monitoring network (fully operational)	AWS– 21% national coverage Hydrological stations– 28% national coverage Number of lightening detection sensors (5) - 71% Number of lake-based buoys - 0%	AWS– 38.5 % national coverage  Hydrological stations– 65%  Number of lighting detection sensors (8) - 100%  Lake buoys- 40% coverage.	AWS– 32% national coverage  Hydrological stations– 49% national coverage  Number of lightning detection sensors (7) - 100%  Number of lake-based buoys (2) - 40%	AWS– 32% national coverage  Hydrological stations– 49% national coverage  Number of lightning detection sensors (7) - 100%  Number of lake-based buoys (2) - 40%	31 AWSs are installed through the support of the project. In addition to that, 11 AWSs were installed through a project funded by Trans-African Hydro-Meteorological Observatory increasing the overall AWS coverage to 38.5%  15 hydrological stations were installed in 2019. Additionally, 11 hydrological stations were installed through another project (Malawi Flood and Emergency Recovery project) thus increasing the national coverage to 65%  A lighting detection system comprising of 8 sensors, a server and a visualisation system was installed in 2019 which covers entire Malawi. 2 lake-based weather buoys were installed in 2019 to monitor weather parameters, wave heights and water quality in the lake.
Number of trained personnel that are proficient with generation of EWS/CI and related activities	0	13 officials trained in EWS/CI and 92 officials trained in O & M	105	50	A total number of 13 staff were trained in development of seasonal forecast. In addition to that 92 number of staff were trained in operation and maintained of the hydro-met equipment.
<b>2. Tailored climate information/products and decision-support platforms developed and disseminated for agriculture, fisheries, and flood risk management</b>					

Percentage of population with access to tailored climate information and early warnings for agriculture, fisheries and flood risk management in the 21 target districts (disaggregated by sex)	2% (of which 30% women)	3% (of which 30% women)	6% (of which 40% women)	12% (of which 50% women)	The increase in the percentage is due to the number of farmers directly reached with climate information through PICSA initiative.
Percentage of population in targeted districts that are satisfied by level and quality of services provided by DCICs and other district level information sources	0	80%	10%	25%	<p>Majority of the extension workers and 80% of the lead farmers who were trained by the district agriculture officers expressed satisfaction with the PICSA training.</p> <p>Majority of the people who were trained by DoDMA in DRM and Climate Change expressed satisfaction with the training.</p> <p>Majority of the district officials who received seasonal forecasts by the Project team expressed satisfaction with the information.</p>
Assessments of private sector engagement and market feasibility for tailored products developed	0	0	1	2	The first assessment will be conducted in 2020.
<b>3. Communities capacities strengthened for use of EWS/CI in preparedness for and response to climate related disasters</b>					
Number of males and females reached by community-based automated early warning systems and other risk reduction measures established	0	0	75,000 (of which 50% are women)	115,000 (of which 50% women)	The CBEWS will be initiated in 2020 which will include establishment of 33 low cost flood warning system in 8 districts.
Number of district and community level actors in targeted communities that show increased knowledge and use of EWS/DRM	0	230 (of which 30% are female)	100 (of which 30% are women)	300 (of which 50% are women)	208 members of area and village civils protection committees were trained in DRM, climate change and emergency management. 22 experts from various departments were trained as expert trainers in DRM.

## 2.5 IMPLEMENTATION CHALLENGES AND LESSONS LEARNED

The implementation challenges faced during the last reporting period, including measures adopted and lessons learned are outlined in the table below.

Challenge encountered	Type <sup>13</sup>	Measures adopted	Impact on the project implementation <sup>14</sup>	Lessons learned and Other Remarks
Implementation delays were encountered during the lead up to the national elections and demonstrations proceeding the elections that affected the normal functioning of the government.	Implementation	UNDP remains engaged with the project stakeholders through bilateral meetings to make up for the lost time and provided necessary support for implementation of the project activities on a timely manner.	Moderate	UNDP and project partners need to put together a plan to manage implementation delays caused due to unexpected turn of events.
Malawi was hit by two rounds of floods in 2019. The first flooding occurred in January. A State of National Disaster was declared by the Government, following heavy rains in March. The flood response diverted the attention of DoDMA from the implementation of the project to emergency management.	Implementation	The PCU stepped in and assumed the project management role and ensured smooth running of the project.	Moderate	Elaborate discussions were held with DoDMA to manage similar situations in future that includes engagement of additional DoDMA staff in the project who could be delegated project management functions in the absence of regular managers.
Lack of capacity of the project partners in monitoring project progress in relation to the targets and delay in submission of liquidation and financial reports	Implementation	The AE conducted a monitoring and evaluation training to capacitate the project partners in various monitoring techniques and tools. A training was also conducted for the financial focal points drawn from the project partners to expedite submission of financial reports.	Moderate	Regular engagement of with project partners to remind them of the project targets and providing support in drafting work plans to progressively achieve the targets.

## 2.6 REPORT ON CHANGES DURING IMPLEMENTATION (include actual and expected changes)

The procurement of technical services for installation of community-based flood early warning system was delayed owing to lack of bidders. The bid will be re-launched in the first quarter of 2020 and the implementation of the activity is expected to commence in April 2020. Upscaling of the flood forecasting system got back on track following a brief delay owing to delay in procurement of hydro-station. The procurement of hydro-stations was completed in 2019, following which 15 hydro-stations were installed and a consultant hired to assist DWR in the upscaling of the flood forecasting system. No major changes have occurred during the implementation period that could influence the overall outcome of the project.

<sup>13</sup> Implementation; Legal; Financial; Environmental/Social; Political; Procurement; Other; AML/CFT; Sanctions; Prohibited Practices.

<sup>14</sup> Minor/Solved; Moderate; High.

### SECTION 3: FINANCIAL INFORMATION

			GCF Financing Only	
			CUMULATIVE THROUGH TO THE END OF THIS REPORTING PERIOD	FOR THE CURRENT REPORTING PERIOD
			USD	USD
<b>3.1.1</b>	<b>Opening Fund balance</b>			
		Opening balance <sup>1</sup>		4,533,129.26
<b>3.1.2</b>	<b>Funded Activity Inflows</b>			
a		Funded Activity Proceeds from GCF to AE:		
i.		Grant Instrument	8,250,163.00	2,540,848.00
ii.		Loan Instrument		
iii.		Equity Instrument		
iv.		Guarantee Instrument		
b		Reflowed funds to the AE		
c	Investment & Other Income			
<b>Total Inflows</b>			<b>8,250,163.00</b>	<b>2,540,848.00</b>
<b>3.1.3</b>	<b>Funded Activity Outflows</b>			
a	Amount used for the Funded Activity	Grant expenditure	4,956,907.18	3,747,187.44
b		Loan disbursed or used <sup>2</sup>		
c		Equity paid		
d		Guarantees exercised		
<b>Sub-total Funded Activity Outflows</b>			<b>4,956,907.18</b>	<b>3,747,187.44</b>
a	Reflowed Funds	Reflowed funds paid to GCF		
<b>Sub-total Reflowed Funds</b>			-	-
<b>Total Outflows</b>			<b>4,956,907.18</b>	<b>3,747,187.44</b>
<b>3.1.4</b>	<b>Closing Balance</b>			<b>3,326,789.82</b>
				3,326,789.82

1/ Opening balance should correspond to the closing balance of the prior reporting period

2/ Loan disbursed or used by the AE out of GCF Proceeds

**SECTION 4: REPORT PROJECT SPECIFIC ON ENVIRONMENTAL AND SOCIAL SAFEGUARDS & GENDER**

**4.1 IMPLEMENTATION OF ENVIRONMENTAL AND SOCIAL SAFEGUARDS AND GENDER ELEMENTS**  
(max 1 page)

The project was approved with a Low risk categorization, which remained unchanged; no new risks were identified and there were no changes to the originally identified risks

*Status of compliance with applicable laws and regulations and the conditions and covenants under FAA*

Applicable laws and regulations/conditions and covenants	Status of compliance
<p><b>FAA Clause 6.01</b> This Agreement shall enter into effect on the date upon which the Fund dispatches to the Accredited Entity a notice of its acceptance of the evidence specified below (“Effective Date”): (a) A duly authorized and executed copy of this Agreement by the Accredited Entity; (b) A certificate issued by the Accredited Entity’s most senior legal officer, in a form and substance satisfactory to the Fund, certifying that this Agreement entered into by the Accredited Entity has been duly authorized or ratified by all necessary corporate actions, duly executed and delivered on behalf of the Accredited Entity, and is legally binding and enforceable upon the Accredited Entity in accordance with its terms; (c) A certificate confirming the availability of the Accredited Entity’s co-financing for the Funded Activity in the amount specified in the Funding Proposal; and (d) An indicative disbursement schedule by the Accredited Entity indicating month and year for the disbursement of the GCF Proceeds by the Fund to the GCF Account for the implementation of the Funded Activity.</p>	<p>FAA clause 6.01 has been fulfilled as of 28 June 2017.</p>
<p><b>FAA Clause 8.01</b> The obligation of the Fund to disburse GCF Proceeds in connection with the Funded Activity under this Agreement shall be subject to the following conditions having been fulfilled to the satisfaction, in form and substance, of the Fund: (a) Conditions precedent to first disbursement: (i) Effectiveness of this Agreement; and (ii) Delivery to the Fund by the Accredited Entity of an executed copy of the Subsidiary Agreement, in the form of a Project Document, between the Accredited Entity and the Executing Entity.  (b) General conditions for all disbursements: (i) Other than in relation to the first disbursement, submission of evidence to the Fund by the Accredited Entity that at least seventy per cent (70%) of the funds previously disbursed have been spent for Eligible Expenditures; (ii) Other than in relation to the first disbursement, submission by the Accredited Entity of APRs and financial information in accordance with the AMA; (iii) Delivery of a Request for Disbursement, in accordance with the template attached hereto (Schedule 6), by the Accredited Entity, signed by the person or persons authorized to do so, within thirty (30) calendar days prior to the date on which the disbursement is requested to be made, which date of disbursement shall not be later than the Closing Date; and</p>	<p>FAA clause 8.01(a) and (b) (iii – iv) for first disbursement was submitted and fulfilled as of 25 August 2017.</p> <p>FAA clause 8.01 (b) for second disbursement was submitted and fulfilled as of 2 November 2018.</p> <p>FAA clause 8.01 (b) for third disbursement was submitted and fulfilled as of 12<sup>th</sup> November 2019.</p> <p>FAA clause 8.01 (b) for fourth disbursement will be submitted at the third disbursement request period.</p>



<p>(iv) Delivery by the Accredited Entity of evidence, satisfactory to the Fund, of the authority of the person or persons authorized to sign each Request for Disbursement and the authenticated specimen signature of each such person.</p>	
<p><b>FAA Clause 9.02</b> In addition to Clause 18.02 of the AMA, the Accredited Entity covenants that as from the Effective Date of this Agreement it shall:</p> <p>(a) Upon request by the Fund, inform the Fund on the status of the co-financing funds that have been disbursed and applied to the implementation of the Project activities;</p> <p>(b) Continuously screen and monitor potential environmental and social risks and impacts arising from the Funded Activity using the social and environmental screening procedure and template provided by the Accredited Entity to the Fund, before the Approval Decision was taken, for the relevant Funded Activity; and</p> <p>(c) Ensure that the Executing Entity shall acquire all land and rights in respect of land that are required to carry out the Funded Activity, and shall promptly furnish to the GCF, upon its request, evidence satisfactory to the GCF, that such land and rights in respect of the land are available for the purposes of the Funded Activity.</p>	<p>FAA Clause 9.02</p> <p>(a) Please refer to the financial information reporting parts of the APR for the information on the status of co-finance materialisation (disbursement/application).</p> <p>(b) UNDP is continuously screening and monitoring potential environmental and social risks and impacts throughout the implementation of the project. The social and environmental screening procedure is being regularly reviewed and assessed against evolving conditions. Any change in the risk rating or assessment will be communicated to the GCF Sec.</p> <p>(c) The land in which the project will be carried out is government-owned or belongs to government institutions. In the case that the private-owned land is used by the project, letters of consent will be collected.</p>
<p><b>FAA Clause 9.03</b> Pursuant to Clause 23.04 of the AMA, the Accredited Entity shall inform the Fund, in the final APR, which steps it intends to take in relation to the durable assets and/or equipment purchased with the GCF Proceeds to implement the Funded Activity.</p>	<p>FAA Clause 9.03 is noted and will be fulfilled during the final APR period.</p>
<p>Environment Management Act of 1996; Sections 24-29 relating to Environmental Impact Assessment Audit and Monitoring, and Environmental and Social Impact Assessment process is guided by Environmental Impact Assessment Guidelines of 1997.</p>	<p>In accordance with the law Environmental and Social Screening (ESS) was done at all the sites identified for installation of Hydro-met equipment that includes Automated Weather Stations, Lake-based weather buoys, sensors for the lightning detection system and hydrological stations. The screening concluded that the project will not have significant adverse environmental and social impacts and categorized the project as C and recommended the project to proceed with the installation of the equipment. In line with the recommendations of the EADa generic environmental and social management and monitoring plans (ESMPs) were developed for anticipated environmental and social impacts arising from installation of hydro-met and other weather station equipment.</p>

As indicated earlier, the environmental and social screening was done for all the hydro-met sites. In line with the recommendations of the EAD an ESMP plan was completed for managing, minimizing, mitigating negative impacts and enhancing positive impacts and also monitoring the environmental and social impacts associated with the various phases of the project. The plan was prepared by an expert after determining the compatibility of the proposed facility and evaluation of the local environmental conditions. The report was also informed by desk study of relevant documents, particularly EADs and UNDPs Environmental and Social Screening reports and extensive field visits. The report examines in detail likely adverse environmental and social aspects and associated impacts and provides and recommends an ESMP framework with mechanisms for monitoring and evaluating compliance and environmental performance. The plan also recommends a grievance redressal mechanism to ensure grievances, concerns and problems related to the project, or related contracts that are not respecting the project's social and environmental standards are effectively addressed.

(i) activities implemented during the reporting period, including monitoring	(ii) outputs during the reporting period	(iii) key environmental, social and gender issues, risks and impacts addressed during implementation	(iv) any pending key environmental, social and gender issues needing accredited entity's actions and GCF attention
<ol style="list-style-type: none"> <li>1. Project monitoring activities undertaken by the PCU conducted regular monitoring visits during implementation of various project activities that included the following; Training of agriculture extension workers and lead farmers in PICSA (implemented by DCCMS, DAES and NASFAM)</li> <li>2. Development of weather advisories for project beneficiaries (implemented by DoF and DAES/NASFAM)</li> <li>3. Scoping study conducted by DoDMA for the establishment of community-based flood forecasting system and review of the ODSS flood forecasting system implemented by DWR</li> <li>4. A monitoring and evaluation training was conducted by the PCU for the project partners to build their capacity to measure the progress under the project using various M&amp; E tools.</li> <li>5. An interim evaluation of the PICSA initiative was also conducted to evaluate the effectiveness of the approach and gauge users satisfaction.</li> <li>6. Following the completion of the ESMP study recommendations including the recommended grievance mechanism and strategies and plans to mitigate the potential environmental and social impacts was presented to all the stakeholders.</li> <li>7. A series of community sensitization workshops were conducted preceding the installation of hydro-met equipment to brief the local communities about the</li> </ol>	<p>The project is on track to achieve its outputs. The progress towards achieving different outputs were explained at length in section 2.</p> <p>The completion of a generic ESMP for the project was one of the major milestones achieved during the reporting period.</p>	<p>The ESMP report identifies key risks related to the project that includes potential vandalism of the installed equipment, minimal impact on the flora and fauna and surface water.</p> <p>In line with the recommendations of ESMP Community consultations were organized at sites involving community leaders and members of the communities prior to the installation of AWSs and lake-based weather buoys.</p> <p>The project oriented the partners responsible for installation of hydro-met equipment to confine bush and land clearing activities limited to installation sites.</p> <p>The project conducted a range of assessments keeping in view the gender specific weather information needs of different beneficiaries. The project also conducted a workshop for stakeholders to develop strategies and plans to meet the gender related targets of the project.</p> <p>The project also trained a number of women on delivering climate/weather services to project beneficiaries (please refer to section 4.2 for additional information)</p>	<p>In year 2020 a project level grievance redressal mechanism will be established, and the project will continue implementing ESMP recommendations.</p>

project and the equipment and minimize vandalism.			
---	--	--	--

Information below in this sub-section should be provided for all projects regardless of the E&S risk category for the project

*Implementation of the stakeholder engagement plan*

(i) activities implemented during the reporting period	(ii) dates and venues of engagement activities	(iii) information shared with stakeholders	(iv) outputs including issues addressed during the reporting period
<i>The National Disaster Preparedness and Relief Technical Committee which is chaired by the Principal Secretary of DoDMA and comprised of Senior Officials from key government departments, NGOs, academia, UN agencies and development partners met 7 times in 2019 to review the progress under the project and provided necessary guidance and directions for efficient project implementation.</i>	Office of the Vice President, Lilongwe. The Committee met seven times in 2019.	The stakeholders were informed about progress made under the project.	Project progress was reviewed by the Committee.
<i>The technical committee on Climate Change and Disaster Risk Management headed by Director, EAD and composed of specialists from government and non-government agencies met five times in 2019 to provide technical guidance respecting to different components of the project</i>	Environmental Affairs Department. The committee met five times in 2019	The progress under the project was presented to the Committee and guidance was sought with regard to implementation of specific project activities	Various project strategies and plans related to the project were validated.
<i>A series of meetings were held with a telecom provider and a provider of low-cost mobile technology and a radio station</i>	Telecom provider office and Project Coordination Unit, Lilongwe in March, April and November	Discussion with telecom provider centred around provision of subsidized rates for transmission of data from hydro-met equipment to various servers and system.  Mobile technology provider was consulted to discuss the architecture of a warning dissemination system for lightings and inclement weather  2 TV and 2 Radio stations were consulted in relation to launching an awareness campaign on DRM and climate change	A agreement was reached between DCCMS and telecom provider to transmit weather data from AWS to DCCMS server.  Mobile technology provider proposed a technical solution which is being reviewed by DCCMS.  An awareness campaign on flood and lighting hazards was launched using the radio and TV
<i>Meetings were held with the Implementation partner and all the responsible parties at least once in two months to discuss about project issues and progresses</i>	Project Coordination Unit, Lilongwe	Discussions centred around project implementation issues and progress towards delivery of project outputs	The meetings helped the project to stay on track and deliver on time.

<p><i>Coordination meetings were held with UN World Food Programme and Food and Agriculture Organisation of UN to strategize downscaling of seasonal forecast and implementation of PICSA</i></p>	<p>Project Coordination Unit, September and November</p>	<p>To coordinate UN support for the development and dissemination of downscaled forecast and avoid overlaps and coordinate on PICSA</p>	<p>UN supported the development of downscaled forecasts for 29 districts and PICSA was implemented in a coordinated fashion</p>
<p><i>Implementation of the grievance redress mechanism</i></p>			
<p>(i) description of issues/complaints received during the reporting period</p>	<p>(ii) status of addressing issues/complaints</p>		
<p>NA</p>	<p>NA</p>		

## 4.2 GENDER ACTION PLAN

Following the approval of the project a gender analysis for the project was completed to identify key gender issues in relation to accessing climate and early warning information and services. Based on the analysis a Gender Action Plan was developed outlining entry points for gender-responsive action to be taken under different components of the project. The project is on track to achieving the intended outcomes outlined under the gender plan. One of the objectives of the project is to build the capacity of women staff in the operation and maintenance of various hydro-met equipment procured under the project. A deliberate attempt was made to include maximum number of qualified women staff in the O & M training and during the reporting period 6 women staff were trained in O&M. In addition to that 8 women staff were trained in the installation of hydro-stations. Similarly, involvement and capacity building of women in the development of climate and weather products is an important objective of the gender action plan. 3 women staff from DCCMS were trained in new techniques to generate seasonal forecasts. 11 women staff were engaged in digitization of hydro-met data and were gainfully employed by the project which is in line with the project goal to promote employment opportunities for women as well as men.

In Malawi the contribution of women to the agriculture sector is invaluable. Not only the women are integral part of the agriculture extension services but also account for 70 percent of the labour force in the agriculture sector. The project aims to enhance the access women to climate/weather information by providing training to extension workers (that includes women extension workers) to effectively disseminate climate information among small-holder farmers. During the reporting period a total of 7 women were trained as expert trainers and 73 women were trained as intermediary trainers (accounts for 28% of the extension workers trained in PICSA) to disseminate seasonal forecast to farmers with the aim to build the capacity of women staff who can play a key / leading role in the scale out of PICSA over the duration of the project .

More than 8000 women lead farmers (accounts for more than 50% of the lead farmers trained) were trained in use of seasonal forecast for making farming and livestock decision. It is estimated that close to 50,000 number of women farmers were reached with seasonal forecast information in 10 districts (accounts for 30% of the total farmers reached). Similarly, women play an important role in the fishing sector. Fish processing and drying is an activity mainly done by women who have limited access to weather/climate information. The project intends to provide weekly weather forecasts to fish-processors to plan their activities which revolve around solar-drying of fish. During the reporting period a campaign was conducted to educate the fishing communities about hazardous weather and promote safety in the lake. The campaign reached 1,250 women in the fishing communities in four districts. Similarly, a large number of women members of the beach village committees responsible for implementation of fisheries extension programs, were also reached through the awareness and training campaign. In order to improve disaster preparedness and response capacities at the sub-national level, trainings were conducted for area and village protection committees that comprises of women members. In order to ensure the project partners, stay focused on the implementation of the gender action plan, the project the stakeholders were sensitized about the gender action plan through a training session in 2019.

The progress towards implementation of the gender action plan is summarized below;

### 4.2.1 PROGRESS ON IMPLEMENTING THE PROJECT-LEVEL GENDER ACTION PLAN SUBMITTED WITH THE FUNDING PROPOSAL.

Objective	Actions	Indicator	Targets	Budget	Responsible Institutions	Report on Annual Progress
<b>Output 1: Expansion of networks that generate climate-related data to save lives and safeguard livelihoods from extreme climate events</b>						
Activity 1.1: Expanding coverage of meteorological and hydrological infrastructure through installation of AWS, hydrological monitoring stations and sensors, lightning detection systems, and lake-based buoys.	Promote O&M employment for women as well as men. (using networks, social media, etc.).	Number/percentage of trained personnel installing infrastructure by sex and age group.	Number of women trained —	12,000	DCCMS DWR DAES	8 women staff were engaged in the installation of hydro-met equipment.  11 number of women were trained and engaged in hydro-met data digitization conducted by DCCMS and DWR.
Activity 1.2: Capacity-building of hydro-met staff on O&M, data	Ensure participation of women and men in O&M, data modelling,	Number/percent participants trained in O&M, data modelling, forecasting, CI (and	4women trained	12,000	UNDP DCCMS DODMA DAES	6 women staff from DCCMS and DWR were trained in O&M of hydro-met equipment

modelling, and forecasting.	forecasting, training for staff from DCCMS, DWR and the Malawi Defence Force  Promote training for women (in sciences, physics) through university, college, school networks	related) training by sex, age group  Participant perception of quality of training (meeting needs, learning style, etc.) by sex, age group.  Evidence of promotion of training/careers for women (in STEM towards climate information/disaster reduction (e.g. career talks and mentorship programs in the targeted districts, websites, social media, mentions in newspapers, radio, expert visits to districts, schools, tv, etc.)	90% Women receiving training are satisfied  10 women advance carriers in CI and disaster reduction	5,000  7,500	UNDP NASFAM DCCMS DAES	3 women staff of DCCMS were trained in R-INSTA for analysis and development of seasonal forecasts
<b>Objective</b>	<b>Action</b>	<b>Indicator</b>	<b>Targets</b>	<b>Budget</b>	<b>Responsible Institutions</b>	<b>Report on Annual Progress</b>
<b>Output 2: Development and dissemination of products and platforms for climate-related information/services for vulnerable communities and livelihoods</b>						
Activity 2.1: Develop tailored weather/climate based agricultural advisories for 14 food insecure districts and disseminate through ICT/mobile, print, and radio channels.	Assess means in which women, men access weather/climate (and other information) to tailor climate information outreach in ways that women will use as well as men. (e.g. women may not have time, be in a place to listen to radio). (This can also build on the work done under the Norway-funded GFCS in Balaka and Nsanje community sensitization on climate)	Number/percentage of participants by sex, age group participating in needs assessment on accessing weather/climate information.  Number/percentage of participants by sex, age group actively involved in decision-making (i.e. representation, voice) in development,	30% women participate in assessments  30% women participate in testing and tailoring of CIs/WIs	15,000  20,000	DCCMS NASFAM DAES DODMA  DCCMS DAES NASFAM	A total number of 6,418 women farmers were registered in the database who will be receiving weather and climate information through different channels  The project trained 16,702 lead farmers that of which 56% are women on how to use Climate Information in farm decision making using Participatory Integrated Climate Agriculture Services In Agriculture (PICSA) methodology with support from University of Reading

	<p>Ensure women are actively represented, have voice, and are participating - as well as men in developing, testing, tailoring modes of outreach and feedback, including the 3-2-1 (used by DAES), NASFAM (two-way system) advisory services inclusion of weather climate information and any other system.</p> <p>Integrate resilience building approaches (e.g. Gender Action Learning Systems/GALS) into community-based and gender-responsive participatory initiatives and sensitisation, e.g. facilitating dialogues with farmers, communities, schools, women, and faith-based groups.</p> <p>Integrate resilience building approaches (e.g. GALS) into capacity building at the district and community levels to provide intermediary support (Extension workers and NASFAM lead farmers) for the interpretation and adoption of new</p>	<p>testing, and tailoring modes of outreach and feedback (e.g. related to 3-2-1, etc.)</p> <p>Evidence of training of community-based facilitators (by sex/age group) across project area who can incorporate resilience building approaches (e.g. Gender Action Learning Systems/GALS which NASFAM is already championing) into community-based dialogues with farmers, communities' farmers, schools, women, faith-based groups, etc.</p> <p>Number/distribution of community-based dialogues incorporating resilience building approaches (e.g. Oxfam GALS) by type of group and project site (e.g. farmer group, women's group, faith-based groups, schools, etc.)</p> <p>Evidence of integration of resilience building approaches (e.g. GALS) into capacity building at district and community levels (e.g. training of trainers, incorporation modules into other district training, extension exercises.</p>	<p>50 women empowered to incorporate resilience building approach</p> <p>50 women empowered to incorporate resilience building into community dialogue</p> <p>2 types of training to empower women to integrate resilience building at district and community level</p>	<p>5,000</p> <p>5,000</p> <p>10,000</p>	<p>DAES DODMA DCCMS</p> <p>NASFAM DAES DODMA UNDP</p> <p>DCCMS DAES UNDP NASFAM</p>	<p>An estimated number of 50,000 female farmers in 10 districts accessed seasonal forecasts.</p> <p>1,250 number of women in the fishing villages were reached with climate information for resilience building.</p> <p>134 women frontline disaster managers were trained in DRM, Climate Change and disaster response and coordination in 8 districts.</p>
--	--	--	---	---	---	--

	<p>products and information, including coproduction of materials and information products.</p> <p>Work with local women and men in participatory mapping (to augment other mapping techniques) to highlight important aspects that may not come out in terms of use, crops that are perceived as important to women, men (perhaps in relation to household food security as opposed to marketability, etc.) that don't come out from other techniques. Map out agricultural areas, farming systems, crops, fishing areas, livestock grazing, etc. from women's men's perspective in target districts and communities</p>	<p>Evidence of participatory mapping with women, men (e.g. mapping exercises conducted with women, men; actual maps recorded; women's and men's maps used to support other mapping techniques, inclusion of mapping exercise, results in reports, etc.).</p>	<p>10</p>	<p>10,000</p>	<p>NASFAM</p>	
--	--	--	-----------	---------------	---------------	--



<p>Activity 2.2: Develop and disseminate tailored warnings and advisories for fishing communities of Mangochi, Salima, Nkhata Bay and Nkhotakhota around Lake Malawi.</p>	<p>Build on needs assessments in Activity 2.1 above to identify and implement most effective ways of communicating warnings and advisories to women and men in fishing communities as well as gender-responsive and socially inclusive messaging.</p> <p>Build this learning into training for extension workers and others working on community outreach</p>	<p>Number of people in fishing communities by sex and age group reporting receipt of warnings, advisories.</p> <p>Quality of warning/advisory of information reported by sex/age group of fishing community members.</p> <p>Evidence of gender and social inclusion issues incorporated into training for extension workers, search and rescue, and other stakeholders (e.g. in curricula, materials, reports).</p>	<p>20% of women report receiving warning</p> <p>90% women satisfied with warning</p> <p>2 products that includes issues related to gender</p>	<p>10,000</p> <p>10,000</p> <p>10,000</p>	<p>NASFAM DWR DAES</p>	<p>7 women from DOF trained in climate change and production and packaging of weather information.</p> <p>The drafting and development of weather advisories for fishers and farmers were informed by the gender disaggregated data and information collected through various surveys</p> <p>754 women fish traders were profiled who will be receiving weather advisories</p> <p>1,250 number of women in 4 lakeshore districts were trained in weather hazards and safety.</p>
<p>Activity 2.3: Develop and deploy the flood and water resource modelling and decision support system to enhance coverage for disaster risk and water resource management.</p>	<p>Ensure dissemination systems and communication channels are established in a way that is gender responsive and socially inclusive.</p>	<p>Evidence of gender-responsive and socially inclusive dissemination system and communication channels (e.g. reports, feedback from users, etc.).</p>	<p>1 system established which is gender responsive</p>	<p>20,000</p>	<p>DODMA NASFAM DCCMS</p>	<p>The platforms and systems that will be developed for dissemination of CI/WIs will analyse gender specific access barriers to ensure that warning and advisories reach the most vulnerable communities including women.</p>
<p>Activity 2.4: Enable a demand-based model for climate information and services stimulating private sector engagement.</p>	<p>In addressing legal and institutional barriers, and the promotion of market development of tailored products, ensure all policy reviews, cost benefit analyses, and market feasibility studies are gender-responsive and socially inclusive, incorporating</p>	<p>Evidence of gender-responsive legal and institutional mechanisms (e.g. gender-responsive and socially inclusive language in documents; supporting capacity building/training on implementing these policies in gender-responsive manner, e.g. gender budgeting, gendered</p>	<p>1 report that takes into account gender responsive institutional mechanism</p>	<p>10,000</p>	<p>LUANAR-Bachelor and Masters in Gender and Development</p>	

	design elements that allow for understanding needs and constraints of different groups of people (e.g. women, youth, people living with disabilities, etc.).	workplans, reports, etc.).				
Activity 2.5: Knowledge sharing and management for development, dissemination, and use of EWS and CI to enhance resilience	Build on Norway-funded GFCS in Balaka and Nsanje, community sensitization on climate through organizing, e.g. of annual World Met Day: awareness campaign in schools, faith based organisations, farmer groups, colleges, and communities; and support for District Climate Centres, highlighting gender and social inclusion related factors (norms, land, assets, youth and climate information/youth as CI intermediaries), etc. – could be a different focus each year).  Document and share examples and case studies of successful gender-responsive EWS and CI with senior government and political leaders	Numbers/percent by type of knowledge sharing/communication product (e.g. policy brief, pamphlet, video, etc.) that consider gender responsiveness and social inclusiveness in design and implementation (e.g. tailoring of messages, medium used, message, etc.).  Numbers of people reached by awareness campaigns by sex, age group and type of campaign/activity.	2 gender sensitive products  20% women reached by awareness campaigns	10,000  10,000	NASFAM DCCMS DODMA UNDP DAES	The project supported translation of the PICSA manual from English to two local languages (Chichewa and Tumbuka) to enhance communities understanding of climate information, early warning systems thereby building community resilience to climate risks , especially that of women who are responsible for imparting PICSA trainings.
<b>Objective</b>	<b>Action</b>	<b>Indicator</b>	<b>Targets</b>	<b>Budget</b>	<b>Responsible Institutions</b>	<b>Report on Annual Progress</b>
<b>Output 3: Strengthening communities capacities for use of EWS/CI in preparedness for response to climate related disasters</b>						
Activity 3.1: Scale-up community-based EWS in flood-disaster prone areas of	Ensure awareness raising workshops and other training (O&M, etc.) are gender-	Number/percentage of participants in awareness raising workshops and O&M and other related	30% women reached through awareness	10,000	DODMA NASFAM UNDP DAES	A national wide awareness campaign was launched in 2019 through development and dissemination of

Karonga, Salima, Dedza, Nkhotakota, Nkhata Bay, Rumphu, Phalombe and Zomba Budget: TBC	responsive/socially inclusive (e.g. tailored to women's and men's needs and challenges)	training by sex and age group.	s programs			radio and TV skits and programs which has reached a wide number of people including women in Malawi.
Activity 3.2: Capacity development of national, district and community level actors on disaster and climate risk management Budget: TBC	Identify lessons and experiences that incorporated gender responsive and socially inclusive approaches (e.g. including people living with disabilities, youth, addressing gendered barriers, etc.) to disaster and climate risk management through, e.g. community learning platforms) between similar communities and include in training as case studies.	Evidence that training has integrated gender and social inclusion issues (e.g. language, issues, case studies, constraints, mix of female/male facilitators, etc.) included in training curricula, materials, approach.  Number/percentage of participants in training (e.g. EOC) and other related training (DoDMA), etc. by sex and age group.	2 training manuals nitrated gender and social inclusion  30% women participate in related training	10,000  10,000	DAES NASFAM UNDP DCCMS DoDMA	A training module tailored for frontline disaster managers was developed that takes into account gender dimensions in disaster risk reduction and climate change.  A DRM training manual was translated from English to two local languages, printed and disseminated to relevant stakeholders that includes gender aspects in DRM. 4 DRM practitioners were trained as trainers to impart tailor made DRM course at district and sub-district level.  134 women who are frontline disaster responders from Civil Protection Committees in 8 districts were trained in DRM, climate change and disaster response

#### 4.3 PLANNED ACTIVITIES ON ENVIRONMENTAL AND SOCIAL SAFEGUARDS

The following are list of activities on environmental and social safeguards;

- Set up a grievance redressal mechanism in order to identify and address disputes related to implementation of the M-CLIMES project as early as possible
- Implement recommendations of ESMP plan to minimize and mitigate the potential negative impact of the project including training project stakeholders on the ESMP recommendations to ensure adherence Train contractors and department of water resources staff on limiting/ minimizing the impact on natural habitat;
- Training the construction workers on occupation safety and health hazards to ensure their welfare
- Continue community sensitizations at hydro-met sites to limit potential vandalism of the installed equipment.
- Continue screening and monitoring potential environmental and social risks and impacts throughout the implementation of the project.

#### 4.4 PLANNED ACTIVITIES ON GENDER ELEMENTS

In order to support implementation of the gender action plan and monitor the progress, the project will continue to work with the Department of Gender.

The following are non-exhaustive list of activities on gender elements that will take place in 2020:

- Training of female extension workers in 4 new districts as intermediary trainers to disseminate seasonal forecast to farmers. The objective of the activity is to build the capacity of women staff who can play a key / leading role in the scale out of PICSA over the duration of the project.
- Continue training of qualified women staff in hydro-met agencies on data modelling and production of CI/WI that includes short course in in agro-meteorology, marine meteorology and meteorological instrumentation for improved capacity in the provision of climate services for DRM, agriculture and fisheries; courses include introduction to coastal meteorology, numerical weather prediction for forecasting, automated instruments maintenance and calibration.
- Conduct training of qualified women in forecasting using Model Output Statistics (MOS) and flash-flood guidance system manipulation
- ICT capacity building activities for improved systems management and performance, automation of services; includes R, PYTHON Programming and user interface development, Linux scripting, server systems management (6 officers) and, computer course for observers.
- Development gender sensitive CI/WI information dissemination systems for fish-processors
- Continue dissemination of CI/WI to vulnerable communities, especially women. The project intends to provide agro-met advisories to 75,000 women farmers.

## SECTION 5: ANNEXES

Annex 1. [Updated implementation timetable for the Funded Activity.](#)

## SECTION 6: ATTACHMENTS