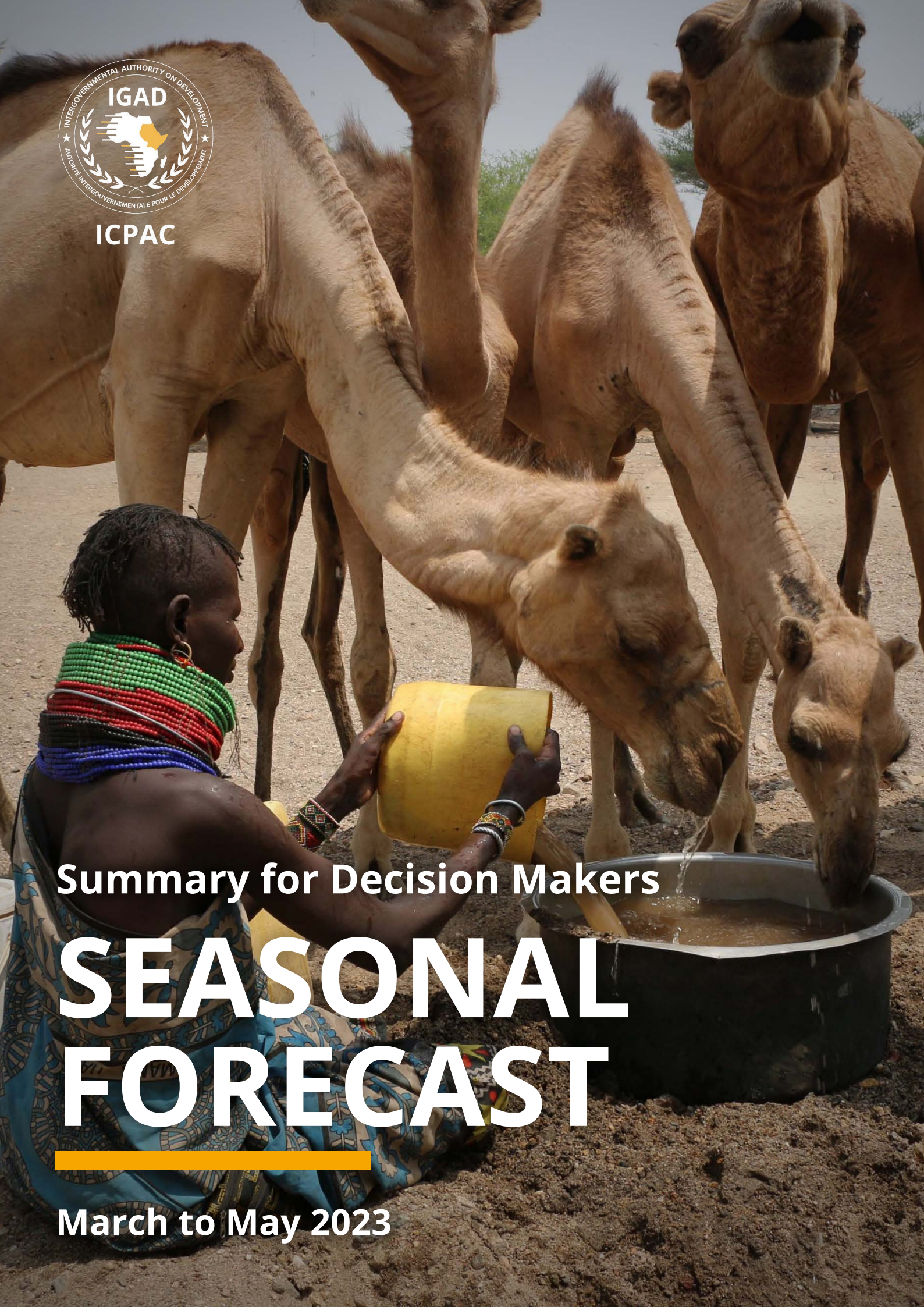


Summary for Decision Makers

SEASONAL FORECAST

March to May 2023

Rainfall and Temperature

The March-April-May (MAM) rainfall constitutes an important season, particularly in the equatorial parts of the region where it contributes up to 60% of the annual total rainfall.

The drier than usual conditions that have persisted from the October to December 2020 season are expected to continue during the March to May 2023 season over the drought affected areas. If this materializes, this will be the 6th failed season over the northern parts of Kenya, southern Ethiopia and southern Somalia.

Some areas are expected to receive above normal rainfall especially over cross- border areas of South Sudan and Ethiopia, north-western Kenya, and few places in Tanzania. The forecast calls for stepping up response for droughts and probable floods in the respective areas of the member states.

Generally, drier than normal rainfall conditions are expected over eastern (Ethiopia, Eritrea, Djibouti, Somalia eastern Kenya) and western (western South Sudan, Uganda, and Rwanda) parts of the region. While wetter than average conditions are expected over cross- border areas of South Sudan and Ethiopia, north-western Kenya, and few places in Tanzania.

Models have no confidence over north-western Kenya, eastern and south-western Uganda, parts of eastern South Sudan, Burundi and northern Tanzania (Fig. 1a). Warmer than average temperatures are expected all over the region with highest probabilities over Sudan, Ethiopia, Kenya, and southern areas of Tanzania (Fig. 1b).

Rainfall onset over parts of Kenya (northern and eastern) and northern Somalia is undefined as the set criteria is not met; (Fig 2a).

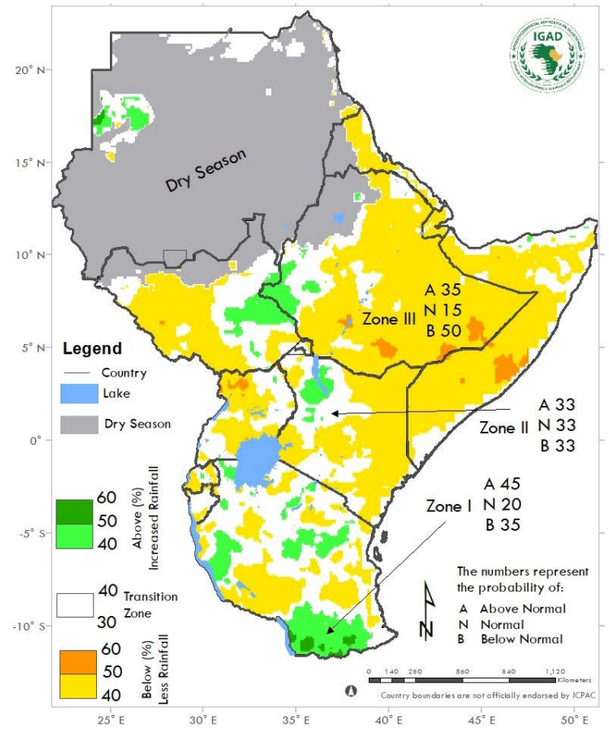
In general, the onset of rainfall progresses northwards, with onset being established over parts of Tanzania, Uganda, southern South Sudan and Ethiopia in March and in April in central to northern South Sudan, parts of Somalia and Ethiopia (Fig.2a).

Furthermore, the rains are expected to start on time over parts of Ethiopia, South Sudan, Uganda, western Kenya, and southern parts of Somalia (Fig. 2b) on average. Delayed onset is predicted over parts of Burundi, Rwanda, north-eastern Tanzania and central parts of Somalia.

How should I use seasonal forecasts? Seasonal forecasts are tailored for planning purposes as they are associated with uncertainties. Therefore, this seasonal forecast should be used in conjunction with weekly and monthly forecasts as well as climate monitoring products issued by ICPAC and National Meteorological and Hydrological Services (NMHSs) of the region.

Seasonal forecast for March to May 2023

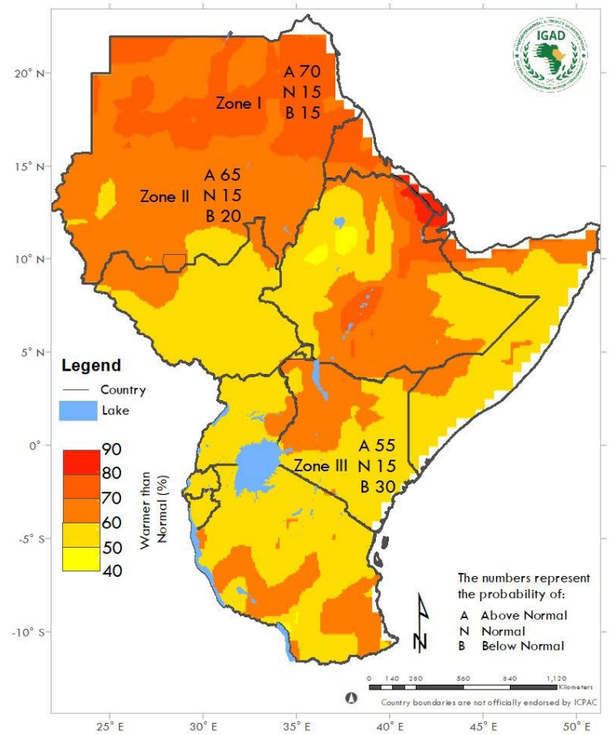
Rainfall Probabilistic Forecast March - May 2023



Rainfall

Figure 1 (a): March - May 2023 rainfall probabilistic forecast

Temperature Probabilistic Forecast for March - May 2023

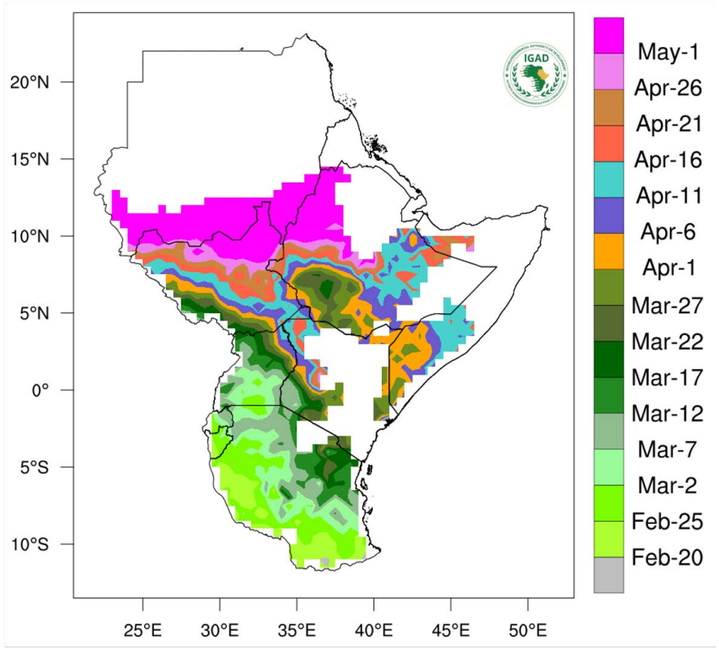


Temperature

Figure 1 (b): March - May 2023 temperature forecast

Below-normal rainfall is expected in most parts of the Greater Horn of Africa (GHA)

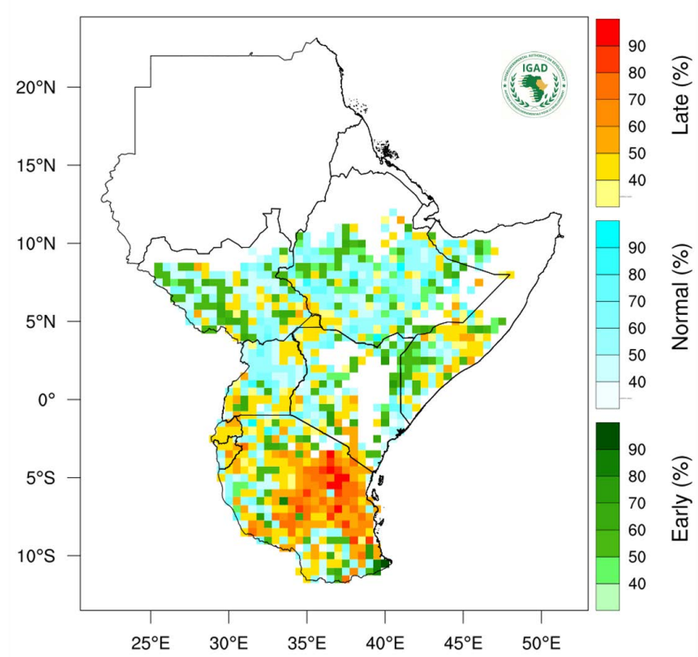
March - May 2023 onset probability



Onset anomaly

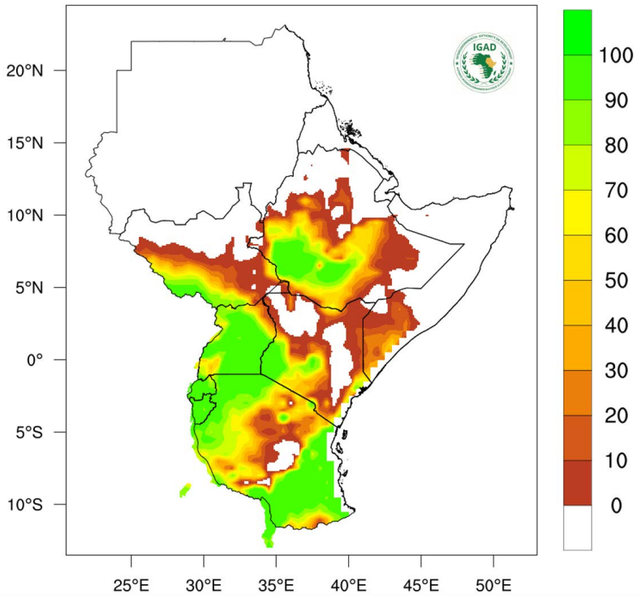
Figure 2 (a): March - May 2023 Onset anomaly

March - May 2023 rainfall onset forecast dates



Onset dates

Figure 2 (b): May - March 2023: Onset dates



March - May 2023 probability of rainfall exceeding 300 mm

Probability of rainfall exceeding 300 mm

High chances of receiving more than 300mm during the MAM season are forecast over north-western and south-eastern Tanzania, Burundi, Rwanda, Uganda, central to western Kenya, south-western Ethiopia, and south-western South Sudan (Fig. 3). Very low chances of exceeding 300 mm are forecast over eastern parts of Kenya, southern Somalia, south-eastern Ethiopia, and central to south eastern South Sudan.

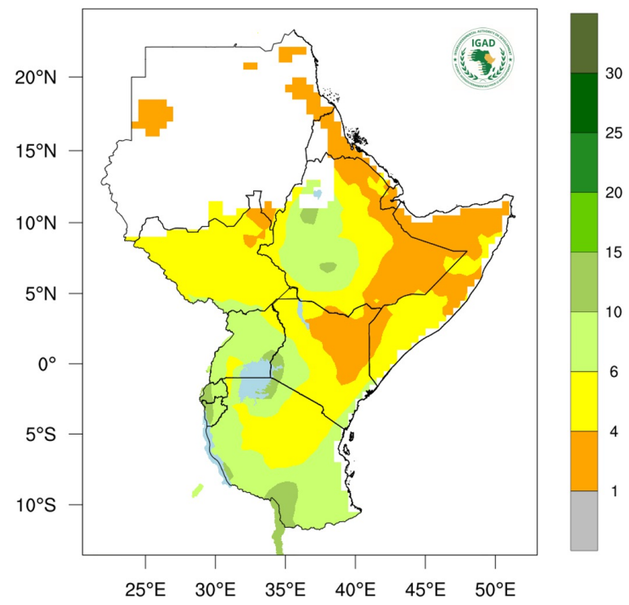


Figure 4 : March - May 2023 maximum number of consecutive wet days

Maximum number of consecutive wet days

Highest number of consecutive wet days (10-15) are expected over western Burundi, Rwanda & Kenya, and southern parts of Tanzania.

March 2023 forecast

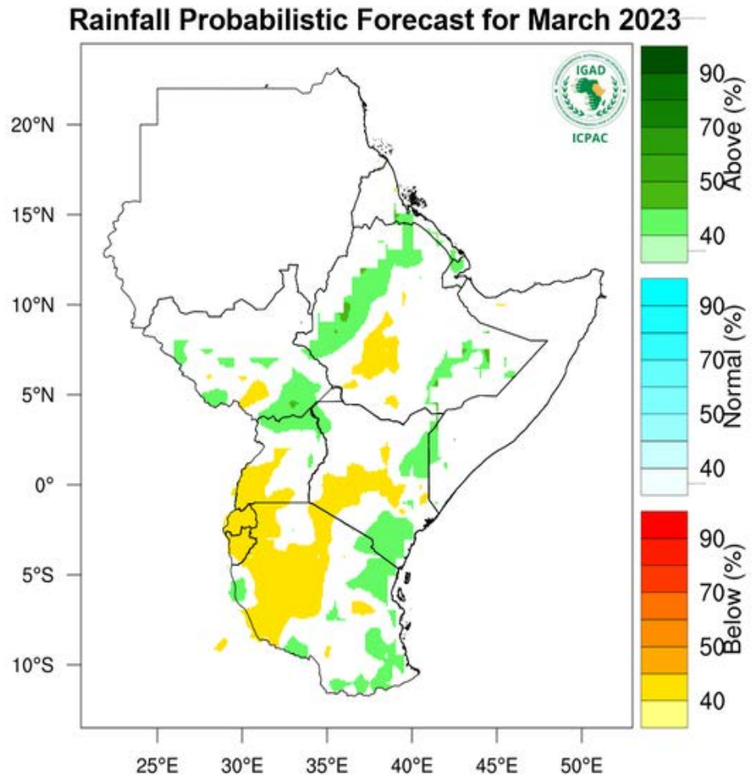


Figure 5 : March rainfall forecast

- Wetter than usual conditions expected over cross border areas of Uganda and South Sudan, parts of Ethiopia, parts of southern and eastern Kenya, and eastern areas of Tanzania.

- Drier than usual conditions expected over central to south-western parts of Kenya, south-western Uganda, Burundi, Rwanda, and Tanzania.

DJIBOUTI

Agriculture and Food Security
Mainly dry

Water and Energy
Less water may be available for agriculture and livestock to the rural communities. Reduced groundwater recharge.

Advisory
- Enhance water harvesting & conservation.
- Promote efficient irrigation practices.
- Increase community awareness on water saving and water quality.

Livestock
Environmental pollution from dead animals due to lack of disposal facilities. Deteriorated pasture, water inadequacy/depletion, high evaporation. Increased livestock movement in search of water and pasture. Increased disease outbreak (PPR, CCPP, CBPP, FMD, Anthrax, Clostridial diseases) around water points and grazing areas. Overgrazing and land degradation in locations around water and pasture. Increased livestock deaths. Decline of livestock productivity- milk, meat, blood. Increased spread of TADs (PPR, CCPP, CBPP, FMD, Anthrax, Clostridial diseases) as animals move in search water and pasture. Further decline of livestock price for those in poor body condition.

Advisory
- Enhance surveillance, treatment and vaccination against expected diseases (LSD, PPR, FMD, HS, CCPP, CBPP etc).
- Support fodder bulking, distribution and accessibility by affected communities.
- Promote conservation of crop residues for use as animal feed.
- Promote destocking where applicable.
- Promote livestock insurance uptake.
- Promote conservation of water- construction, rehabilitation and desilting.

Seasonal forecast for March to May 2023

ETHIOPIA

Disaster Risk Management
Late onset likely to affect planting season. More loss of livestock and displacement of people especially in southern and south-eastern parts of the country. Water scarcity in drought affected areas likely to continue.

Advisory
- Encourage water harvesting at household level.
- Support livestock destocking and cash transfer.
- Activate multi-agency response.

Agriculture and Food Security
Good crop prospects are likely in western part of the country due to predicted normal to above normal rains. Drought conditions in eastern and south eastern part will further deteriorate food security situation which is already dire. Decrease in expected crop production due to drier condition in eastern and south eastern parts where the agricultural season is active.

Advisory
- Disseminate early warning information for early anticipatory/early action to be made at local level and the farming/pastoral community.
- Prepare early for food supply and assistance for eastern and southeast part of Ethiopia (9 zones of Somali, Bore na, part of Guji, bale , and South Omo of SNNP).
- Promote policy level intervention for sustainable resilience programmes in the regions in the longterm.
- Encourage supplementary irrigation practices (provision of pumps, maintenance of irrigation schemes) in the event of prolonged dry spells.

Water
Below average water availability for southern basins. Stable hydropower production due to currently good storage.

Advisory
- Encourage proper water management, water governance and coordination between upstream and downstream.
- Coordinate well for the operation of cascade dams.

Livestock
Increased cattle rustling in Southern Ethiopia. Increased banditry in southern Ethiopia. Displacement and deaths of animal due to floods in crossborder areas of and ET-SSD. Increase in vector born animal diseases in few areas that will receive rain . Environmental pollution from dead animals due to lack of disposal facilities. Deteriorated pasture, water inadequacy/depletion, high evaporation. Increased livestock movement in search of water and pasture. Increased disease outbreak (PPR, CCPP, CBPP, FMD, Anthrax, Clostridial diseases) around water points and grazing areas. Overgrazing and land degradation in locations around water and pasture. Conflict between pastoral communities and with farmers. Increased livestock deaths. Decline of livestock productivity- milk, meat, blood. Increased spread of TADs (PPR, CCPP, CBPP, FMD, Anthrax, Clostridial diseases) as animals move in search water and pasture. Further decline of livestock price for those in poor body condition.

Advisory
- Enhance surveillance, treatment and vaccination against expected diseases (LSD, PPR, FMD, HS, CCPP, CBPP etc).
- Support fodder bulking, distribution and accessibility by affected communities.

- Promote conservation of crop residues for use as animal fee.
- Promote destocking where applicable.
- Promote livestock insurance uptake.
- Promote conservation of water- construction, rehabilitation and desilting.
- Promote peace dialogues- pastoralists, farmers and those on move.

Health

Vector-borne diseases as rivers, streams and ponds will create small pools of mosquito breeding places that favour mosquito propagation and increase in malaria cases. Water-borne and food-borne diseases: Flash floods due to heavy rainfall over western zones likely to destroy waste disposal and WASH system, which consequently affect the quality of potable water. Health problems related to food-borne and water-borne diseases (or diarrheal diseases) will probably be an issue in areas experiencing water scarcity. Children more likely to susceptible to the illnesses and fatalities caused by diarrheal infections.

Advisory

- Conduct health education to the general public using diverse media.
- Create awareness to the existing health system at all levels.
- Monitor closely the occurrence of the health outcomes and their magnitude in areas identified as high risk.

KENYA

Disaster Risk Management

Increase in the number of people in need of humanitarian/food aid from current 4.3M people. Heat stress likely to impact human, wild and domestic animals. Water scarcity for communities and wildlife. School drop-outs expected to increase in drought affected areas.

Advisory

- Continue/enhance relief food distributions and cash transfers.
- Distribute animal feeds and encourage animal off-take.
- Encourage water trucking and rehabilitate water sources.
- Enhance school feeding programs.
- Disseminate climate information and create awareness to support decision making.

Agriculture and Food Security

Lower outbreak of diseases and pests associated with wet weather e.g. aflatoxins. Less weeds hence reduced management of weeds. Moisture stress and likelihood of reduced yields. High food prices. Due to consecutive failed season, this being the 6th, there would be reduced investment in crop farming. Good crop prospects forfew areas forecasted to receive enhanced rains. Less weeds expected hence reduced cost of herbicides/ weeding. Expected conditions not favorable for breeding of Desert Locust.

Advisory

- Urge government to maintain and expand procurement and intervention of food relief for human, livestock and wildlife.
- Encourage soil conservation practices.
- Promote the cultivation of drought tolerant crops.
- Diversify crop production and utilization/consumption.
- Maintain and expand input/production subsidyies
- Import maize and rice to balance market prices.
- Expand water harvesting for domestic and agricultural use.
- Secure pest and disease control inputs in advance.
- Declare drought a national disaster.

Seasonal forecast for March to May 2023

Water

Potential water shortage due to below average inflows to reservoirs and pans and over pumping. Water resource-based conflicts. Disruption of water supplies for irrigation, hydropower due to reduction in water levels in rivers, reservoirs and pans.

Advisory

- Enhance water harvesting and conservation and prepare for water conflict resolution plan.
- Encourage efficient Irrigation practices.
- Increase community awareness on water quality and water borne diseases.

Livestock

Increased cattle rustling. Increased banditry. Increase in vector born animal diseases in few areas that will receive rain. Environmental pollution from dead animals due to lack of disposal facilities. Deteriorated pasture, water inadequacy/depletion, high evaporation. Increased livestock movement in search of water and pasture. Increased disease outbreak (PPR, CCPP, CBPP, FMD, Anthrax, Clostridial diseases) around water points and grazing areas. Overgrazing and land degradation in locations around water and pasture. Conflict between pastoral communities and with farmers. Increased livestock deaths. Decline of livestock productivity-milk, meat, blood. Increased spread of TADs (PPR, CCPP, CBPP, FMD, Anthrax, Clostridial diseases) as animals move in search water and pasture. Further decline of livestock price for those in poor body condition. Competition between wildlife- domestic animals over grazing areas and water.

Advisory

- Downscale the forecast to subnational and local levels for precise community level response targeting.
- Disseminate the advisories to the member state conflict early warning units for timely response.
- Activate cross border and local peace committees early to engage with communities for peaceful coexistence.

SOMALIA

Disaster Risk Management

Increased loss of livestock including those already moved to cross-border areas. Food security and nutrition conditions to worsen. More displacement due to drought.

Advisory

- Urge government to heighten mobilization of resources for response actions.
- Emcourage regional institutions to work with the government to ease drought impacts.

Agriculture and Food Security

Forecasted condition not conducive for desert locust breeding. Reduced crop production due to depressed rains. Reduced water in Shabelle and Juba rivers for irrigation. Reduced labour opportunities. Market prices will remain high. Food insecurity will likely deteriorate.

Advisory

- Government should support and facilitate food import to mitigate against expected crop production gaps.
- Embolden farmers to practice conservation agriculture practices like mulching.
- Urge farmers to plant drought tolerant crop varieties.
- Scale scale up cash and food aid assistance from government and humanitarian agencies the most vulnerable people.
- Avail farm inputs such as fertilizers, seeds and pesticides to farmers on time.
- Government, through the ministry of agriculture, should enhance extension services to farmers include timely delivery of climate information to farmers.

Water

Less water available for agriculture and livestock and the rural communities. Reduction of groundwater table. Migration of people and livestock in search of water.

Advisory

- Enhance water harvesting and conservation practices.
- Increase community awareness on water saving and water quality.
- Plan for resettlement for migrated people.

Livestock

Increase in vector born animal diseases in few areas that will receive rain. Environmental pollution from dead animals due to lack of disposal facilities. Deteriorated pasture, water inadequacy/ depletion, high evaporation. Increased livestock movement in search of water and pasture. Increased disease outbreak (PPR, CCPP, CBPP, FMD, Anthrax, Clostridial diseases) around water points and grazing areas. Overgrazing and land degradation in locations around water and pasture. Conflict between pastoral communities and with farmers. Increased livestock deaths. Decline of livestock productivity—milk, meat, blood. Increased spread of TADs (PPR, CCPP, CBPP, FMD, Anthrax, Clostridial diseases) as animals move in search water and pasture. Further decline of livestock price for those in poor body condition. Competition between wildlife- domestic animals over grazing areas and water.

Advisory

- Enhance surveillance, treatment and vaccination against expected diseases.
- Support fodder bulking, distribution and accessibility by affected communities.
- Promote conservation of crop residues for use as animal feed.
- Promote destocking.
- Promote livestock insurance uptake.
- Promote conservation of water- construction, rehabilitation and desilting.
- Promote peace dialogues- pastoralists, farmers and those on move.

Health

Malnutrition due to Serious food insecurity for animals and humans. Outbreaks of Cholera in many parts of central and southern Somalia due to serious shortage of water Sources. Increased drought-induced internally displaced persons (IDPs) coming into the main urban cities and towns looking for food and water.

Advisory

- Practice cholera preventive measures and case management activities including enhancing surveillance, hygiene promotion, water source chlorination, ORS and Zinc Tablet distribution and capacity building of health workers.
- Distribute food and preposition medical supplies in the regional warehouses.
- Issue cash voucher to drought affected people.

SOUTH SUDAN

Disaster Risk Management

Increased displacement due to flood; parts of the country already flooded. Loss of land for cultivation due to flood.

Advisory

- Urge government to offer financial support to the DRM (Disaster Risk Management) office to enable them manage disasters.
- Promote host family approach to those in flood prone areas.
- Improve early warning systems (strengthen hematic Working Group TWG).
- Recommend multi-sectoral approach to reduce climate and non-climate shocks.

Seasonal forecast for March to May 2023

Agriculture and Food Security

Good crop prospects likely in South Sudan-Ethiopia border due to predicted wetter than average rainfall. Moisture stress anticipated in western part of the country.

Advisory

- Advise farmers to plant early maturing crops in areas forecasted to receive depressed rains (western half of the country).
- Ask agro dealers to avail viable seeds and other farm inputs on time.

Water

Conflict over limited animal watering points. Reduced river and lake water levels leading to low flood risks. Decrease of water levels in the White Nile may impact navigation of large barges.

Advisory

- Enhanced water harvesting and conservation.
- Prepare a water conflict resolution plan.
- Encourage use of medium to small sizes boats and barges.

Livestock

Increased cattle rustling. Increased banditry. Displacement and deaths of animal due to floods in crossborder areas of and Ethiopia-South Sudan. Increase in vector-borne animal diseases in few areas that will receive rain. Environmental pollution from dead animals due to lack of disposal facilities. Deteriorated pasture, water inadequacy/depletion, high evaporation. Increased livestock movement in search of water and pasture. Increased disease outbreak (PPR, CCPP, CBPP, FMD, Anthrax, Clostridial diseases) around water points and grazing areas. Overgrazing and land degradation in locations around water and pasture. Conflict between pastoral communities and with farmers. Increased livestock deaths. Decline of livestock productivity—milk, meat. Increased spread of TADs (PPR, CCPP, CBPP, FMD, Anthrax, Clostridial diseases) as animals move in search water and pasture. Increased tick-borne disease. Further decline of livestock price for those in poor body condition. Competition between wildlife- domestic animals over grazing areas and water.

Advisory

- Enhance surveillance, treatment and vaccination against expected diseases (LSD, PPR, FMD, HS, CCPP, CBPP etc).
- Support fodder bulking, distribution and accessibility by affected communities.
- Promote conservation of crop residues for use as animal feed.
- Promote conservation of water- construction, rehabilitation and desilting.
- Promote peace dialogues- pastoralists, farmers and those on move.

SUDAN

Disaster Risk Management

High temperature likely to cause wildfires. Water canals likely to be filled by soil from dust storms leading water shortage. Dust from dust storms to cause respiratory diseases.

Advisory

- Preposition resources to curb wildfires.
- Rehabilitate irrigation canals.
- Ministry of health to collaborate with other organization in order to manage respiratory diseases.
- Issue early warning information in good time.

Agriculture and Food Security

Mainly dry in Sudan. Conducive for drying of wheat.

Advisory

- Urge farmers to undertake early land preparation in readiness for the main season.

Water and Energy

MAM is not the main rainy season, however, there is currently enough water in reservoirs for different uses. Stable hydropower production.

Advisory

- Encourage proper water management practices, water governance and coordination between upstream and downstream.
- Good coordination is advised for the operation of cascade dams.

Livestock

Deteriorated pasture, water inadequacy/ depletion, high evaporation. Increased livestock movement in search of water and pasture. Increased disease outbreak (PPR, CCPP, CBPP, FMD, Anthrax, Clostridial diseases) around water points and grazing areas. Overgrazing and land degradation in locations around water and pasture. Conflict between pastoral communities and with farmers. Decline of livestock productivity- milk, meat, blood. Increased spread of TADs (PPR, CCPP, CBPP, FMD, Anthrax, Clostridial diseases) as animals move in search water and pasture. Increased tick borne diseases. Further decline of livestock price for those in poor body condition. Competition between wildlife- domestic animals over grazing areas and water.

Advisory

- Enhance surveillance, treatment and vaccination against expected diseases.
- Support fodder bulking, distribution and accessibility by affected communities.
- Promote conservation of crop residues for use as animal feed.
- Promote livestock insurance uptake.
- Promote conservation of water- construction, rehabilitation and desilting.
- Promote peace dialogues- pastoralists, farmers and those on move.

Health

Due to high temperature and dryness, there will be a reduction of flu and cold related illnesses. Scarcity of water will lead the people to store water in open containers, then this container will form mosquitos breeding site, then increased in number of Malaria cases. Meningitis and heat stroke specially in northern region due to dry season, heat and scarcity of the water. Skin and eye diseases due to water scarcity. Cases bronchial asthma expected to increase due to sand storm specially in northern state.

Advisory

- Enhance disease surveillance, immunization campaign against meningitis.
- Provide clean and safe water.
- Avail anti-asthmatic drugs.
- Create awareness on public and personal hygiene parctices.

Seasonal forecast for March to May 2023

UGANDA

Disaster Risk Management

Malaria cases to rise among children. Wildfires are highly likely due to high temperatures. Food security situation and nutrition in Karamoja likely to worsen. Crop production and livestock likely to decline.

Advisory

- Work with UNMA (Uganda National Meteorological Authority) to disseminate the climate information.
- Promote water storage to mitigate water shortage.
- Stock animal foods/work with ministry of finance for resources.
- Develop a national contingency plan for drought.

Agriculture and Food Security

Reduced occurrences of aflatoxins because of reduced moisture content. Poor crop prospects as a result of anticipated moisture stress. This might lead to below average production to crop failures in some parts. Increased food prices.

Advisory

- Relay early warning information to all actors on time.
- Advise farmers to practice soil and water conservation techniques e.g. irrigation, mulching, terracing etc.
- Urge government, through the ministry, to intensify agricultural extension/veterinary services/enhance farmer training on modern agronomic practices including on disease and pest management, seed varieties (early maturing and drought tolerant) early prepositioning of seeds and other agro inputs near agricultural communities etc.
- Recommend humanitarian assistance for the highly food insecure population e.g. Karamoja region.

Water and Energy

Reduced inflows of small valley tanks/dams may lead to water shortages. Downstream hydropower plants may not meet the target power due to below average inflows. Drying of docking places which might affect water transport (ferries).

Advisory

- Coordinate well operation of hydropower systems in cascades.
- Encourage conservation and storage of water as well as rainwater harvesting.
- Encourage use of efficient irrigation system to save on water.

Increased cattle rustling. Increased banditry. Increase in vector-borne animal diseases in few areas that will receive rain. Deteriorated pasture, water inadequacy/ depletion, high evaporation. Increased livestock movement in search of water and pasture. Increased disease outbreak (PPR, CCPP, CBPP, FMD, Anthrax, Clostridial diseases) around water points and grazing areas. Overgrazing and land degradation in locations around water and pasture. Decline of livestock productivity- milk, meat, blood. Increased spread of TADs (PPR, CCPP, CBPP, FMD, Anthrax, Clostridial diseases) as animals move in search water and pasture. Further decline of livestock price for those in poor body condition.

Advisory

- Enhance surveillance, treatment and vaccination against expected diseases.
- Support fodder bulking, distribution and accessibility by affected communities.
- Promote conservation of crop residues for use as animal feed.
- Promote conservation of water- construction, rehabilitation and desilting.
- Promote growing of hydroponic pastures especially for dairy cows.
- Promote peace dialogues- pastoralists, farmers and those on move.

Health

Malnutrition due to poor yield in crop and animal production due to low rainfall. Cholera outbreak in Karamoja expected due to scarcity of water, low sanitation and hygiene status. The districts at high risk are Kotido, Moroto and Nabilatuk Districts.

Advisory

- Expedite the mass mosquito net campaign.
- Enhance malaria surveillance country wide.
- Promote water trucking and distribute food.

BURUNDI

Agriculture and Food Security

Post-harvest losses for last season crop might be experienced especially in areas with normal to early onset. Moisture stress conditions are likely in most parts due to below normal rains.

Advisory

- Promote drought tolerant/short cycle crops varieties.
- Promote irrigations technologies in dry spell prone areas.
- Promote crop diversification.

Water and Energy

Risk of potential conflicts over water (farmers and pastoralists). Low to medium risk of floods.

Advisory

- Enhancee water harvesting and conservation practices.
- Increase community awareness and sensitisation on peaceful use and sharing of water resources.
- Encouarge efficient irrigation practices.

RWANDA

Agriculture and Food Security

Good crop prospects in Western, Northern and Southern parts as rains in these areas are predicted to receive 300mm and above. Drier conditions expected in Eastern parts of Rwanda may cause crop failure and the emergence of some crop pests and diseases (e.g. FAW).

Advisory

- Disseminate seasonal (Season B 2023) forecast on time through NCOF.
- Advise farmers to plant early maturing crops in areas expected to receive depressed rains.
- Recommend regular crop monitoring by farmers to fight pest and diseases.

Seasonal forecast for March to May 2023

- Encourage farmers to join subsidized programs like Small Scale Irrigation Technologies (SSIT) and the National Agricultural Insurance Scheme (NAIS) in order to minimize impacts of drought conditions that may occur in MAM 2023.

Water and Energy

Increased groundwater recharge. Good water availability for productive use.

Advisory

- Encouarge rain water harvesting.
- Boost conjunctive use of water sources.
- Monitor water sources continously.

TANZANIA

Agriculture and Food Security

Conducive environment for pre and post-harvest management.Below normal rainfall will lead to soil moisture deficits which might lead to a reduction in crop production. Late planting especially along the coastal to northern highlands. Increased food prices. Below normal rains favours breeding of crop disease such as fall army worm.

Advisory

- Apply climate smart techniques of conserving soil and water.
- Advise famrer to plant early maturing and drought tolerant crop varieties.
- Encourage proper use of available food at household level.
- Urge government to subsidize food crops in order to reduce food price.
- National grain/food reserve is advised to supply food to the areas with high shortages.
- Advise agro dealers to deliver farm inputs on time.

Water

Increased groundwater recharge. Increased hydropower production. Risk of floods in basins forecasted to receive above average rainfall. Low risk of water related conflicts.

Advisory

- Encourage rain water harvesting and conjunctive use of water sources.
- Monitor water sources continuously.
- Increase community awareness on water quality and water-borne diseases.

ICPAC

Front and back photo| Jane Kiiru | UNOCHA

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