



REPUBLIC OF KENYA
MINISTRY OF ENVIRONMENT, CLIMATE CHANGE AND FORESTRY
KENYA METEOROLOGICAL DEPARTMENT
NAKURU COUNTY
SECTOR ADVISORIES FOR OCTOBER – NOVEMBER - DECEMBER 2024
Date of issue: 13th September 2024

SUMMARY OF OCTOBER - DECEMBER 2024 SEASONAL RAINFALL OUTLOOK

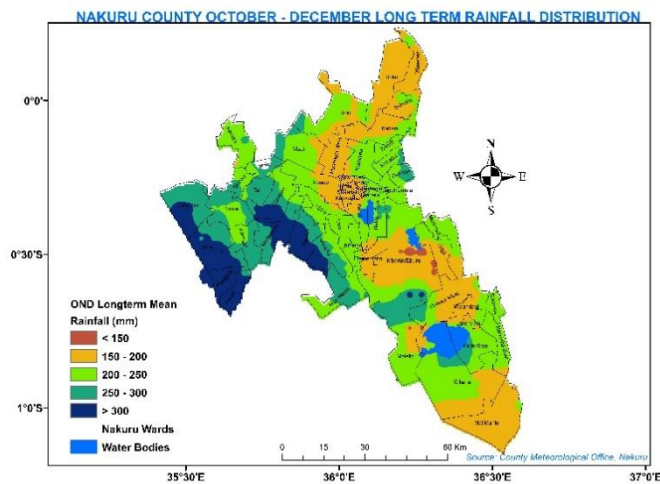


Fig 1. October - December Long Term “Normal Rainfall”

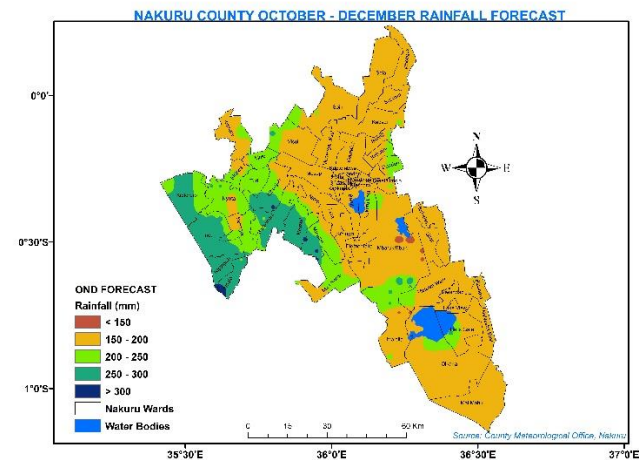


Fig 2. Seasonal Climate forecast October – December 2024

- Near normal to above average rainfall is expected over most parts of Nakuru County while the southern part comprising of Naivasha, Gilgil and Mai mahiu areas will receive near normal to below normal rainfall during October - December 2024 “Short Rains” Season.
- The rainfall expected to continue from September up to the 3rd - 4th week of December 2024
- Fig 1. shows the Nakuru County Long Term Mean Average “Normal” rainfall in millimetres
- Fig 2. shows forecasted rainfall amounts expected in each ward of Nakuru County during the OND 2024 season.

List of Acronyms

DOALF	-	Department Of Agriculture Livestock And Fisheries
FCS	-	Farmers Co Operative Society
ITK	-	Indegenous Traditional Knowledge
IPM	-	Intergrated Pest Management
IMTR	-	Institute for Meteorological Training and Research
KALRO	-	Kenya Agricultural & Livestock Research Organisation
KMD	-	Kenya Meteorological Department
KPLC	-	Kenya Power & Lighting Company
NEMA	-	National Environment Management Authority
NGAO	-	National Government Administrive Officer
OND	-	October November December
SCAO	-	Sub-County Agricultural Officer
WRA	-	Water Resources Authority

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1. Crop sector Advisories

Major crops promoted in Nakuru County during OND: Bean, Potatoes, Sunflower, Spinach and Kales, Cabbages, Garden Peas, Carrots, Pyrethrum.

Enterprise	Advisory	Agronomy	Pests and Diseases	Weather Related Disasters	Soil and Water Conservation	Post-Harvest Management	Marketing	Other Comments
Beans	<ul style="list-style-type: none"> - Farmers are advised to plant varieties that are fast maturing and drought tolerant e.g nyota, chelalang, rose coco, wairimu, cut B1, Faida and angaza - Stockists are advised to stock fast maturing seeds varieties before September. - The crop is grown all over the county 	<ul style="list-style-type: none"> - Early land preparation and planting by mid-September. - Plant certified seed. - Seed rate 25kgs/acre - Practice pure bean crop planting at a spacing of 50 by 10cm to minimize moisture competition. - Timely weed control. 	<ul style="list-style-type: none"> - Regular scouting and monitoring for pests and diseases. - Use appropriate IPM strategies to control pests like aphids, bean fly, whiteflies, pod borer and diseases such as anthracnose, halo blight. - Apply appropriate registered fungicides and 	<ul style="list-style-type: none"> - Likelihood of flooding/leaching of nutrients in lowland areas, prepare drainage channels and unblocking water channels. - Frost may occur in areas like Kuresoi and planting early maturing varieties will help to avoid - Heat wave 	<ul style="list-style-type: none"> - Plant along the contours. - Practice minimum tillage, mulching. - Water harvesting technologies to be adopted during rainy season. 	<ul style="list-style-type: none"> - Timely harvesting. - Proper drying and sorting. - Control storage pest using hermetic bags and other recommended storage techniques. 	<ul style="list-style-type: none"> - Aggregation of the produce by farmers and collective marketing. - Farmers should wait for prices to stabilize. 	<ul style="list-style-type: none"> - High yields ranging from 8-10 bags per acre.

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			insecticides as advised by extension officer.	may occur and mulching will help to retain soil moisture, irrigation will also help during heat wave				
Potato	<ul style="list-style-type: none"> - Farmers are advised to plant varieties that are fast maturing e.g Shangi and other early maturing varieties. - Acquire certified seeds from registered seed merchants and practice crop rotation. - Farmers are advised to insure their crops - Farmers are advised to carry out market survey before planting 	<ul style="list-style-type: none"> - Early land preparation and planting by mid-September. - Plant certified seed. - Seed rate 750-1,000kgs/acre. - 3-4bags of basal fertilizer depending on soil test result. - Plant at a spacing of 75 by 30cm. - Timely weeding and earthing up. 	<ul style="list-style-type: none"> - Regular scouting and monitoring for pests and diseases. - Use appropriate IPM strategies to control pests like whiteflies, aphids, potato cyst nematode, potato tuber moth and millipede. Diseases like early and late blight, bacterial wilt. 	<ul style="list-style-type: none"> - Likelihood of flooding/leaching of nutrients in lowland areas, prepare drainage channels and unblocking water channels. - Hailstones are likely to occur and farmers are advised to insure their crops 	<ul style="list-style-type: none"> - Plant along the contours. - Practice minimum tillage, mulching. -Water harvesting technologies to be adopted during rainy season - Surface planting is recommended to faster germination and maximum utilization of available moisture 	<ul style="list-style-type: none"> - Timely harvesting at physiological maturity. - Dehauling two weeks before harvesting - Avoid harvesting when soils are wet - Proper sorting and grading - Ensure there is shade when sorting and grading - Use diffused light store for seed 	Aggregation of the produce by farmers and collective marketing	Heavy rainfall during the long rains have adversely affected Potatoes production leading to low yield. During this short rain a good yield is expected and most likely prices will be stable When farmers follow good agricultural practices the yield expected will range from 8 to 12 tonnes

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	<ul style="list-style-type: none"> - The crop is grown in Kuresoi South, Kuresoi North, Bahati and Naivasha 					storage		
Sunflower	<ul style="list-style-type: none"> -Timely procurement of the seeds -variety Milika, Kenyan Favour -it can be replanted for 3 seasons -Many farmers to be encouraged to grow sunflowers to share bird menace. stocking by the stockiest The crop is grown countywide 	<ul style="list-style-type: none"> -early land preparation by September -Seed eater- 3kgs per acre. -Spacing-75*25 -Timely weeding 	<ul style="list-style-type: none"> -use white sorghum as a trap crop along the edges to minimize bird infestation - plant drooping varieties to minimize bird infestation -Plant in cluster to reduce on bird infestation. - No chemical control should be used because of oil extraction. 	<ul style="list-style-type: none"> -Likelihood of flooding/leaching of nutrients in lowland areas, prepare drainage channels and unblocking water channels. Hailstones are likely to occur and farmers are advised to insure their crops 	<ul style="list-style-type: none"> -Plant along the contours. -Practice minimum tillage, mulching. -Water harvesting technologies to be adopted during rainy season - Surface planting is recommended to faster germination and maximum utilization of available moisture 	<ul style="list-style-type: none"> -Timely harvesting and proper drying and threshing. 	<ul style="list-style-type: none"> - Aggregation at centre. - value addition by pressing oil, 	<ul style="list-style-type: none"> - There is opportunity to utilize the byproducts as animal feeds. - There is a big opportunity to produce affordable and health edible oil at farm level.
Vegetables spinach, kales	<ul style="list-style-type: none"> -Early sourcing of vegetable seeds from appropriate sources - Planting varieties that are tolerant to 	<ul style="list-style-type: none"> - Early land preparation - Early transplanting and establishment of drainage 	<ul style="list-style-type: none"> Farmers are advised to scout and monitor their farms regularly for pests such as cutworms, 	<ul style="list-style-type: none"> Waterlogging may occur when there are heavy rains and farmers are advised to use raised beds. 	<ul style="list-style-type: none"> Practice minimum tillage, mulching. -Water harvesting technologies to 	<ul style="list-style-type: none"> Farmers are advised to harvest the lower leaves three to four top leaves in order 	<ul style="list-style-type: none"> Collective marketing is encouraged Value addition 	<ul style="list-style-type: none"> These vegetables have low cost of production and the demand is very high. It's a potential crop but highly perishable

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	<p>harsh climatic conditions such as hybrid varieties In kales varieties like a thousand headed and collards which resistant to black rot. For spinach the common variety is ford hook giant. Market survey should be carried out before planting The crops are grown all around the county</p>	<p>channels in areas where water logging is likely to be experienced and raised beds. Use manure that is well decomposed at a rate of 8tonnes per acre, applied one week before transplanting and incorporated well with soil Apply TSP at 80kgs per acre which applied two weeks after planting Apply CAN at the rate of 80kgs per acre in two splits The spacing is 60 by 40 cm. Supplimental irrigation should be provided when required.</p>	<p>diamond back moth, leaf miner and cabbage sawfly. The diseases are leaf spot for spinach and rot, damping off, downy mildew and powdery mildew. Use IPM strategies to control the pests and diseases. For pest farmers are advised to repellants such as Indian mustard and Mexican marigold. For diseases they are advised to plant resistant varieties and certified seeds</p>	<p>In case of drought farmers are advised to use sunken beds</p>	<p>be adopted during rainy season</p>	<p>to facilitate photosynthesis and production of more leaves Sorting and grading should be done by bunching in uniform sizes Farmers are advised not to store vegetables with ripening fruits to avoid yellowing They should store the vegetable in a well ventilated store</p>	<p>can be done through drying and preservation</p>	
Cabbages	<p>Framers are advised to plant fast maturing variety such as</p>	<p>Early land preparation Early transplanting after 30 days</p>	<p>Farmers are advised to scout and monitor their farms regularly</p>	<p>Waterlogging may occur when there are heavy rains and farmers are</p>	<p>Practice minimum tillage, mulching. -Water</p>	<p>Farmers are advised to sort and grade according to</p>	<p>Collective marketing is advised</p>	<p>Expected yields are 16 to 68 tonnes per acre High demand from</p>

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	<p>Copenhagen, pructo F1 and Gloria F1. They are resistant to black rot Areas where they can be grown in the county are Mau Narok, Mauche, Kuresoi, Molo and Bahati Market survey to be done before planting</p>	<p>Spacing 60 by 45cm Well decomposed manure should be applied at the rate of 8tonnes per acre Fertilizer is TSP applied at the rate of 80kgs per acre Topdress using CAN at the rate of 100kgs per acre Regular weed control Uniform irrigation to avoid cracking</p>	<p>for pests such as cutworms, diamond back moth, leaf miner and cabbage sawfly. The diseases are rot, damping off, downy mildew and powdery mildew. Snails have become a problem to cabbage and farmers are advised to drown them in water mixed with yeast or use alcohol to trap them. They can also use slag pellets Use IPM strategies to control the pests and diseases. For pest farmers are advised to repellants such as Indian mustard and Mexican marigold.</p>	<p>advised to use raised beds. In case of drought farmers are advised to use sunken beds</p>	<p>harvesting technologies to be adopted during rainy season</p>	<p>sizes Timely harvesting to avoid cracking Proper storage in a well ventilated store</p>		<p>the crop is from December to February</p>
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			For diseases they are advised to plant resistant varieties and certified seeds					
Garden Peas	The crop can be incorporated with other crops Farmers are advised to plant resistant varieties and certified seeds such as Glano and Ambassador Areas where grown is Mau Narok, Mauche, Kuresoi, Molo and Dunduri	Early land preparation is advised Seed rate is 28-30kgs per acre Spacing is 5-7cm along one row and 45-60cm between lines Farmers are advised to trees with rhizobium culture for nitrogen fixation Fertilizer used is NPK at the rate of 80kgs per acre Proper weed control should be done	Regular scouting and monitoring for common diseases such as powdery mildew, rust, fusarium root rots, bacterial blights and pests such as aphids, pod borers, white flies and cut worms. Use IPM including crop rotation and appropriate registered chemicals for control	Waterlogging may occur when there are heavy rains and farmers are advised to ensure proper drainage of the farms	Practice minimum tillage, mulching. -Water harvesting technologies to be adopted during rainy season	Harvest 54-70 days after planting. Frequent picking of green mature peas should be carried out	Sorting and grading should be done	Expected yield 3-5 tons/acre
Carrots	Farmers are advised to test the soils to guide on manure and fertilizer application Market survey to be done before planting Area where grown	Early land preparation and ensure fine tilth is achieved for proper seed germination Seed rate is 2-5kgs per acre and depth of planting is 0.5 to 1cm 50kgs of NPK	Farmers are advised to regularly scout for pests such as cutworms and leaf eating caterpillars. Farmers advised to observe field	Waterlogging may occur when there are heavy rains and farmers are advised to ensure there is proper drainage in their farms	Practice minimum tillage, mulching. -Water harvesting technologies to be adopted during rainy season	Farmers are advised to pull the roots when the soil is moist to avoid breakage Trim back the tops back to 2cm to avoid	Collective marketing is advised	Expected yield is 11-14 tonnes per acre

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	<p>in the county are Bahati, Molo, Kuresoi, Mau Narok in Njoro and Naivasha east Farmers are advised to plant resistant varieties. The commonly planted varieties are Nantes</p>	<p>fertilizer is used at planting and liming is done when ph. is below 5.5 Sow along the drills and cover with light soil Mulching should be done to encourage germination Thinning should be carried out for dense population</p>	<p>hygiene, control using physical methods like traps and pheromone traps The diseases are bacterial soft rot caused by waterlogging in lowland areas and can be controlled by good drainage. Another disease is elongated roots and branching forked roots. To control these farmers are advised not to use manure and avoid excess water Splitting is caused by high ammonium nitrogen fertilizers and farmers are advised to avoid fertilizers with ammonium</p>			<p>water loss or shrinking wash in clean running water then sort and dry Framers are advise4d to pack in crate and transport in hygienic refrigerated trucks</p>		
Pyrethrum Nursery establish	<p>Timely establishment of the nursery between October</p>	<p>Site selection should be near source of water and sites not previously hosting</p>	<p>Farmers are advised to scout regularly for pests such as aphid,</p>	<p>Waterlogging may occur when there are heavy rains and farmers are</p>	<p>Practice mulching. -Water harvesting</p>	<p>Since these is nursery establishment there are no</p>	<p>Most small scale farmers establish</p>	

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<p>hment</p>	<p>and November to provide seedlings for long rain season</p>	<p>solanaceae family egg potato, tomatoes, black night shade and egg plants Provide shades for the nursery Consult agricultural extension experts before establishment Certified seeds should be sourced from registered seed merchants Nursery bed should be 1M wide, and 20cm between rows. Broadcast seeds in the rows Seed bed should be on well drained soils Use TSP fertilizer at the rate of 1 teaspoon per row Farmers are advised to cut any bud that is growing to encourage leaves formation for clonal nurseries</p>	<p>mites and nematodes and diseases such as bud disease To control farmers are advised to use nematicide for nematodes and crop rotation and avoid areas planted with solanaceae family</p>	<p>advised to use raised beds.</p>	<p>technologies to be adopted during rainy season</p>	<p>post-harvest management but there will be handling of the seedlings when transplanting</p>	<p>nurseries for planting in their farms, they do not market the seedlings as there are certified nursery operators.</p>	
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2. Livestock / Veterinary sector Advisories

2.1 Types and varieties of livestock being promoted in Nakuru County

- ✓ Dairy Cows-Friesian, Ayrshire, Jersey, and Guernsey
- ✓ Dual Purpose Breeds/cross Breeds-Sahiwal,
- ✓ Local Breeds-East African Zebu
- ✓ Beef-Charolais
- ✓ Dairy goats-Toggenburg, Alpine, Saanen,
- ✓ Local goats-Galla
- ✓ Wool Sheep-Merino, harmshire and corriandale
- ✓ Mutton sheep-Dopper and Red Masai (Local breed)
- ✓ Chicken (Layers, broilers and local)
- ✓ Ducks
- ✓ Geese
- ✓ Turkey
- ✓ Doves
- ✓ Bees- African wild bees and European bees.
- ✓ Aquaculture (ponds and dams)- Tilapia and catfish,
- ✓ Capture(Lakes) - Tilapia, catfish and common carp
- ✓ Donkey
- ✓ Companion Animals-Dogs and cats

2.2 Fodder Production

Enterprise	Advisory	Agronomy/ Husbandry	Pests and diseases	Weather related disasters	Soil and water conservation	Post-harvest managemen t	Marketing	Other comments
Fodder Production	Areas with rainfall > 300 mm to plant boma rhodes, napier, brachiaria, Lucerne, desmodium, canola, and	Early land preparation and planting of Fodders/Pastures. Use adequate manure fertilizer and mulching. Use of cover crops (Desmodium)	Fall army worm and head smut management in napier, maize and sorghum expected.	Occasional storms may occur during the period. High probability of soil erosion and leaching	Terraces to be constructed across slopes. Contour ploughing should be encouraged. Farmers should also have grass	Construct raised and well aerated stores for hay. Lucerne and desmodium should be wilted	Expect excess fodder buyers from Eastern parts of Kenya, ensure to	Silage can be prepared using yellow maize, Lucerne, and napier.

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	<p>sunflower. For areas with rainfall under 300 mm, plant guatemala, sorghum, sweet potato vines, yellow maize, and sunflower. Farmers with water harvesting facilities advised to establish bulking plots for their fodder.</p>	<p>encouraged. Minimum tillage to conserve soil. harvesting maize should leave a third of the crop stokes to replenish the soil Fertility.</p>			<p>strips (napier, brachiaria, Guatemala, sweet potato vines).</p>	<p>before feeding to animals. Control rodents, and thieves. Fire safety is necessary.</p>	<p>keep fodder for livestock for the coming season. book stovers from neighbors as an influx from Eastern Kenya expected for the same.</p>	
Fodder Production	<p>establish new plots of perennial fodders such as Napier, bracheria. maximize on the good expected rains to produce more fodder</p>	<p>Early land preparation and planting of fodders/pastures. Use adequate manure fertilizer and other inputs Store hay and silage</p>	<p>Take measures to control Moles, Locusts, Army worms etc., head smut (Plant KK series)</p>	<p>Leaching, poor germination for seed based establishmen t.</p>	<p>Plant fodders as stabilizers for soil conservation structures and along the contours.</p>	<p>Ensure adequate drainage of silo pits and proper housing of dry fodders.</p>		<p>Conserve fodder as silage and hay</p>

	for sale to the eastern sector markets where rainfall is expected to be insufficient.							
Agro Inputs	Stock enough certified seeds, planting materials, and agrochemicals on time by the private sector, farmer cooperatives and the NCPB. agro dealers to have sand boxes in case of chemical spillage.			Proper storage of the seeds, planting materials, and agrochemicals.	Agro-dealers should encourage farmers to dispose of chemicals and containers responsibly.			use bee friendly or organic chemicals. A caution is placed on areas where pyrethrum is grown since it poisons honey, and kills the bees. Trained spray service providers (SSPs) are available to assist farmers in spraying their animals and advice on the use of chemicals.

2.3 Livestock Diseases and Management

Enterprise	Advisory	Husbandry	Parasites, Vectors,	Weather	Water And Soil	Post-Harvest	Marketing	Other
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			Predators And Diseases	Related Disaster	Conservation	Management		Comments
Livestock Disease Management	Carry out disease surveillance, sensitization, and vaccination for diseases such as lumpy skin disease (LSD) (cows, sheep and goats): foot and mouth disease (FMD): Rift Valley fever (RVF) (Nakuru West/East sub counties along the Nakuru National Park, Lower parts of Rongai sub county affecting mainly sheep and goats), anthrax and rabies among others. Prepare to de-worm, control	Observe good livestock husbandry practices (Housing, feeding, breeding, culling, disease / vector /predators control, records). Ensure there's a business plan for the enterprise. Animals should be well fed to ensure they come on heat when necessary. Maximize use of subsidized A.I. to ensure good	Intestinal worms, ticks and tick borne diseases, biting flies, mites, and fleas. Diseases such as RVF, FMD, LSD, Anthrax, Trypanosomiasis, pneumonia, Newcastle Disease (birds), PPR (sheep and goats), rabies, and metabolic diseases notably hypomagnesaemia (low Magnesium), hypocalcemia (low Calcium) and ketosis. Birds in fish, Mongoose, Hawks, Honey badger, Thieves and rustlers. Test products, feeds, and animals for aflatoxins	Expected increase in the tick, worm, mosquitoes, Mites and fly population. Ensure consistent dipping and control of parasites/pests and alternate acaricides. Possible outbreak of FMD. Ensure that animals houses are dry and comfortable to prevent cases of foot rot.	Construct storage facilities for water for animals. Avoid overstocking to conserve soil. Store manure in a properly constructed shed to be taken to the farm when the process of decomposition is complete. Slurry should not be taken directly from the cow shed to the farm.	Ensure farm biosafety in handling of milk, meat, eggs, fish and honey for human consumption including strict observation of withdrawal periods for veterinary drugs. Cold storage for livestock produce is important. Proper feed storage is paramount.	Formation of marketing groups for produce bulking; Secure and safe movement of the products; Food certification is encouraged at source. Value addition to increase prices and reduce post-harvest losses.	Donkey dung should not be actively used as a manure due to zoonotic disease spread (e.g. tetanus). Responsible ownership of animals to avoid strays. expected increase incidences of frogs and predation in ponds. Since livestock dung is a by-product, it may be used to produce biogas for green energy, and

	ticks and biting flies. On fishing keep grass short around ponds. Renovate and fence housing structures / compound	breeding.						slurry from the same can be used on fodder, pasture, or crop production.
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3. Environment, Energy and Transport sector advisories

The following are advisories to guide on the above sectors during OND 2024 rain season.

Sector	Weather Related Disaster	Risks	Advisory	Mitigation measures	Actors
Soil and Water Conservation	Landslides/Mudslide/ Gulley	<ul style="list-style-type: none"> • Displacements • Infrastructure Destruction • Transport Interruptions • Loss of livelihoods • Loss of lives and properties • Conflicts over resources 	<p>Early warning-relocate to safe high ground areas</p> <p>Enhance early warning system Continuous climate information dissemination</p> <p>Early actions</p>	<p>Building Gabions, Agroforestry / indigenous trees Planting deep rooted trees-</p> <p>Drainage system checked to ensure water diverted away risk areas Restoration of degraded landscape</p> <p>Promotion of conservation agriculture- terraces, cultivation along contours</p>	<p>Farmers/ Communities Department of Agriculture Department of Environment KMD</p> <p>Development partners-</p>
	Floods/ flash	<ul style="list-style-type: none"> • Displacements 	Early warning-	<ul style="list-style-type: none"> • Continuous desilting 	Farmers

	floods	<ul style="list-style-type: none"> • Waterlogging agriculture lands • Infrastructure Destruction • Transport Interruptions • Loss of livelihoods • Loss of lives and properties • Bursting of dams/ water pans • Stagnant waters for breeding grounds for mosquitos and water borne diseases 	<p>relocate to safe high ground areas</p> <p>Early actions</p>	<p>and maintenance of existing dams</p> <ul style="list-style-type: none"> • Climate proofing of road and water infrastructure • Promoting sponge city • Conservation of riverine, riparian lands and catchment areas • Pegging of riparian lands • Check dams • Opening up spillways • Construction of barriers • Cut of drains • Contour ploughing to prevent soil erosion • Minimum Tillage • Terracing • Planting Cover Crops • Establishment of buffer zone around the riparian land • Opening drainage channels and culverts to ensure they are functioning properly • Drainage of stagnant waters 	<p>Community Department of Agriculture Department of Environment and Water Department of Infrastructure Kenya Redcross Climate change Unit Disaster Management</p>
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				containers	
Energy	Fire Lightening	<ul style="list-style-type: none"> • Destruction of power infrastructure • Power interruptions • Loss of lives and properties • Loss of livelihoods and suppress of economy 	<p>Regular maintenance of the power infrastructure</p> <p>Conducting energy regular audits</p>	<p>Replacement of the faulty power poles</p> <p>Erecting Lightening arrestors in tall buildings</p> <p>Maintenance of way leaves</p> <p>Switch to clean energy- solar, wind and biogas</p>	<p>Department of Energy</p> <p>KPLC</p>
Transport	Transport related accidents	<ul style="list-style-type: none"> • Disruption of movements • Reduced income- Loses of agricultural produce • High costs of transport • Loss of lives • High cost of road repair and maintenance • Vandalism of road signs and street lights 	<p>Proper construction and maintenance of transport infrastructure</p> <p>Climate proofing of transport infrastructure</p> <p>Early warning</p>	<p>Drainage system improved Culverts and gabions establishment</p> <p>Tracking of road signs to enhance security</p> <p>NTSA to inspect and ensure road worthy vehicles</p>	<p>Department of roads and infrastructure</p> <p>NTSA</p> <p>Traffic Police</p>

4. Health Sector Advisories

Health Risk	General Comment	Types of Diseases	Areas Susceptible	Effects of Diseases	Mitigation Measures	Post Occurrence Management	Other Comment
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Water-borne diseases	It's expected that the number of cases may rise.	Cholera, Bilharzia, Dysentery, Typhoid	The entire county but More prevalent in low lying sub-counties: Naivasha (Kihoto, Karagita areas), Subukia(Town Centre) Rongai (Salgaa, Kiamunyi): and densely populated areas such as ; Rhonda, free area- Kwa Murogi estate Kaptembwa, Shabab, Banglandesh, Bondeni. Langalanga, Mwariki, Molo and Njoro town	High Mortality and morbidity rate; Congestion in hospitals; Financial constrains; Pressure on hospital resources; human, infrastructure, equipment Education: absenteeism of learners and teachers.	<p>Bilharzia disease: Avoid bathing in stagnant dirty water or wading through it; wear protective clothing, (e.g. gloves, gumboots) while working in fluke infested areas; Manage fresh water snails: Avoid walking bare footed in swampy or flooded areas; Drain stagnant water.</p> <p>Cholera, dysentery ,Typhoid disease: Only drink safe water, which has been boiled or chemically treated; Use the toilet /latrine when you need to go to the toilet; Do not defecate on open ground; Cover toilet / latrine; Wash hands thoroughly with soap and running water after visiting the toilet; before handling food; Keep water sources free from contamination; Boil or chemically or purify</p>	Immediately treat the sick; Treat water sources; Create awareness on public hygiene. Reconstruct collapsed pit latrines; Stock enough medical supplies	County Government should procure and supply drugs for human treatment as well as water treatment chemicals before the onset of rainfall.
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					drinking water to make it safe; Wash foods eaten raw thoroughly before eating; Ensure food is properly cooked and served hot; Avoid raw milk and non-inspected meat; Seek immediate medical treatment for the infected person to prevent transmission; Enhance public awareness through health education: Vaccinate children below 5 years against Typhoid		
Water Related diseases	It's expected that the number of cases may rise	Malaria	Like above	Like above	Sleep under a chemically treated mosquito net at night; cover water containers in the house so that mosquitoes cannot breed inside them; drain and disinfect puddles and pools of stagnant water that form near homes so that mosquitoes cannot breed in them; Clear bushes near your house so that mosquitoes do not hide in them; Put wire	Seek medical attention immediately; follow ups through health facilities and community health promoters to the households; Eat diverse food groups to regain health during and after recovery to regain weight; take a lot of fluid; Spray houses	County Government should procure and supply drugs for human treatment as well as water treatment chemicals before the onset of rainfall.

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					gauges (net) on windows and door vents to prevent entry of mosquitoes into the houses; vaccinate children below 5 years against Malaria	using insecticides; Clear open drains; Provide insecticide treated nets; Regularly empty and disinfect waste receptacles	
Nutritional Deficiency Diseases	It is expected that the number of cases may rise	Kwashiakor, Marasmus, Rickets, lifestyle diseases (obesity; hypertension, cancer)	Rongai sub county (Soin); slum areas of Nakuru (Bondeni, Mwariki, Mzee Wanyama, Free area); Kuresoi North and South	Stunted growth currently at 18.5%; wasting; Underweight; Death; Pressure on hospitals	Eat a balanced and diverse diet every day. For every meal ensure you and your family eat the right portion of the diverse foods from 10 food groups; Consume fresh vegetables and fruits daily to boost the immune system; Wash fresh vegetables and fruits before consuming; Feed infants 0-6 months on breast milk only; at 6 complete months introduce nutritionally, adequate, and safe complimentary foods; Children should breast feed for a minimum of 2 years; Strive to own kitchen garden to promote diet diversification; Provide	Residents to immediately seek medical attention; Follow ups through health facilities and community health promoters to the households; Continuous health education; Collaboration between ministry of health and agriculture in reaching out residents on food production and eating healthy; Have wellness and fitness centres to minimize lifestyle diseases	

					health education to the county residents; Have mother to mother support groups; father to father support groups; diabetic support groups to support each other and come up with solutions with the help of the health workers e.g. Community Health Promoters, nutritionists and public health staff	especially obesity , blood pressure and diabetes;	
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4.1 Nutrition Recommendations

- (a) Eat a balanced and diverse diet every day. For every meal ensure you and your family eat the right portion of the diverse foods from all 10 food groups from carbohydrates, proteins, vitamins, fats, minerals and water.
- (b) Consume fresh vegetables and fruits daily to boost the immune system.
- (c) Wash fresh vegetables and fruits before consuming.
- (d) Feed infants 0-6 months on breast milk only.
- (e) At 6 complete months introduce nutritionally, adequate, and safe complimentary foods.
- (f) Children should breast feed for a minimum of 2 years.

(g) Strive to own kitchen garden to promote diet diversification.

4.2 Cross Cutting and Emerging Diseases

Health Risk	General Comment	Types Of Diseases	Areas Susceptible	Mitigation Measures	Post Occurrence Management	Other Comment
	Caused by contact with donkey dung	TETANUS	Entire County	Wear protective gear, Donkey dung should not be actively used as a manure due to zoonotic disease spread	Tetanus vaccination	
		MPOX	Entire County	Observe personal hygiene and body contacts, isolation.	Clinical intervention	
	Consumption of infected meat	ANTHRAX	Entire county	Bury dead carcasses, avoid eating un inspected meat, quarantine.	Vaccination, quarantine.	

5. Disaster Risk Reduction Advisories

Major risks and hazards prevalent in Nakuru County during OND: Flash floods, floods, mudslides & landslides, faults lines, droughts and famines, Strong winds, Lightning & Thunderstorms.

HAZARD	RISK	ADVISORY RESPONSE	ACTION	AREA/LOCATION
Flash Floods	<ul style="list-style-type: none"> Displacement Disease Outbreak 	<ul style="list-style-type: none"> Early warning and early action 	<ul style="list-style-type: none"> Bulk SMS County Administrative Units 	Molo, Naivasha, Gilgil, Nakuru East, Nakuru

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	<ul style="list-style-type: none"> • Crop Damage • Infrastructure Damage • Pollution • Soil Erosion • Disruption of learning • Injuries / Disability • Loss of lives • Increased post-harvest losses • Mental health 	<ul style="list-style-type: none"> • advisories • Clearance of drainage systems • Unclogging and desilting of culverts • Construction of gabions on gulleys 	<ul style="list-style-type: none"> • and NGAO • Faith-based organizations • Media • Opinion leaders • Multi sectoral partners – stakeholders involvement 	West
Floods	<ul style="list-style-type: none"> • Displacement • Disease Outbreak • Crop Damage • Infrastructure Damage • Pollution • Soil Erosion • Disruption of learning • Injuries / Disability • Loss of lives • Increased post-harvest losses • Mental health 	<ul style="list-style-type: none"> • Early warning and early action advisories • Clearance of drainage systems • Unclogging and desilting of culverts • Construction of structures that can hold/withstand floods • Construction of Cut of Drains • Cover Crops • Construction of gabions on gulleys • Desilting and embanking of water reservoirs 	<ul style="list-style-type: none"> • Bulk SMS • County Administrative Units and NGAO • Faith-based organizations • Media • Community Barazas • Opinion leaders • Multi sectoral partners – stakeholders involvement 	Molo, Njoro, Rongai, Nakuru East, Nakuru West, Bahati, Gilgil, Naivasha
Mud slides & land slides	<ul style="list-style-type: none"> • Displacement • Disease Outbreak • Crop Damage 	<ul style="list-style-type: none"> • Early warning and early action advisories 	<ul style="list-style-type: none"> • Bulk SMS • County Administrative Units and NGAO 	Kuresoi North, Kuresoi South, Subukia

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	<ul style="list-style-type: none"> • Infrastructure Damage • Pollution • Soil Erosion • Disruption of learning • Injuries / Disability • Loss of lives • Increased post-harvest losses • Mental health 	<ul style="list-style-type: none"> • Afforestation on sloppy areas • Fodder trees 	<ul style="list-style-type: none"> • Faith-based organizations • Media • Community Barazas • Opinion leaders • Multi sectoral partners – stakeholders involvement 	
Fault lines	<ul style="list-style-type: none"> • Displacement • Disease Outbreak • Crop Damage • Infrastructure Damage • Pollution • Soil Erosion • Disruption of learning • Injuries / Disability • Loss of lives • Increased post-harvest losses • Mental health 	<ul style="list-style-type: none"> • Early warning and early action advisories • Backfilling 	<ul style="list-style-type: none"> • Bulk SMS • County Administrative Units and NGAO • Faith-based organizations • Media • Community Barazas • County Administrative Units and NGAO • Opinion leaders • Multi sectoral partners – stakeholders involvement 	Nakuru West, Gilgil, Rongai, Naivasha
Drought & Famine	<ul style="list-style-type: none"> • Crop Failure • Increased pest incidences • Conflict • Emaciation of livestock • Disruption of learning • Injuries / Disability • Loss of lives • Increased post-harvest losses • Mental health 	<ul style="list-style-type: none"> • Adopt climate smart agriculture practices • Crop/livestock insurance • Animal destocking • Water harvesting • Protection of wet lands / riparian / water sources • School feeding programs • Relief food to the 	<ul style="list-style-type: none"> • Bulk SMS • County Administrative Units and NGAO • Faith-based organizations • Media • Community Barazas • Opinion leaders • Multi sectoral partners – stakeholders involvement 	Naivasha, Gilgil, Subukia, Rongai

		vulnerable		
Strong winds	<ul style="list-style-type: none"> Blowing away of house roofs, maize (crops) and electricity poles 	<ul style="list-style-type: none"> Secure roofs and fences, elevated structures. Deep planting of crops or shorter varieties 	<ul style="list-style-type: none"> Community Barazas Community Barazas County Administrative Units and NGAO Opinion leaders Multi sectoral partners – Stakeholders involvement Opinion leaders Multi sectoral partners – Stakeholders involvement Agricultural advice 	Molo, Gilgil and Naivasha
Lightning and Thunderstorms	<ul style="list-style-type: none"> Electrocution – Injuries and loss of life Fire Property destruction 	<ul style="list-style-type: none"> Lightning arrestors Sensitization of risk 	<ul style="list-style-type: none"> Community Barazas County Administrative Units and NGAO Opinion leaders Multispectral partners – Stakeholders involvement Agricultural advice 	Kuresoi North, Kuresoi South, Molo, Rongai

Appendices

List of advisories co-producers

Crops Sector

- | | |
|------------------------|------------------------------|
| 1. Nancy Njogu | County Horticultural Officer |
| 2. Emmah Mwangi | SCAO Njoro |
| 3. Sammy K. Sugut | Freshcrop |
| 4. Miriam W. Kinyanjui | SCAO Subukia |
| 5. Faith Aiyabei | Sereni Fries |
| 6. Jackqueline Wanjala | DOALF KABDP |
| 7. Maurine Jelagat | Starlight F.S.C |
| 8. Michael Waweru | ITK Kikuyu elder |
| 9. Joan Koskei | SCAO Kuresoi South |
| 10. Janet Ngesa | KALRO |
| 11. Peterson Ngari | KMD |

Livestock/Veterinary Sector

- | | |
|------------------------|-----------------------------------|
| 1. Duncan Langat | County Director VET |
| 2. Rosemary Kimani | Fisheries |
| 3. Simon Cheptot | CDMS- Elgeyo Marakwet County |
| 4. Judith Wandahwa | SCAO-Rongai |
| 5. Nancy Rotich | SCAO -Nakuru East/West Sub-county |
| 6. Julius Mwangi | SCAO Molo |
| 7. Vincent Ngetich | Starlight F.C.S |
| 8. Komolkori Frankline | KMD Forecasting |

Disaster Risk Reduction Sector

- | | |
|----------------|--------|
| 1. John Muchai | DM&HAO |
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|----------------------|------------------------|
| 2. Hiram Njuguna | KMD/DRR |
| 3. Michael Suter | CDM, Uasin Gishu |
| 4. Stephen Nzioka | KALRO |
| 5. Kenneth Muiruri | DOALF |
| 6. John Koskei | ITK Kalenjin |
| 7. Rahab Nyururu | WRA |
| 8. Elizabeth Achieng | Red Cross |
| 9. Job Maweu | Starlight Farmers Coop |
| 10. Paul Murage, HSC | IMTR KMD |

Health Sector

- | | |
|--------------------------|--|
| 1. Lisa Boiywo | Sub County Nutritionist Nakuru East |
| 2. Benjamin Bahati | CDMS Busia |
| 3. Godfrey Omusonga | CDMS Nandi |
| 4. Okuku Constance | CDMS Kericho/Bomet |
| 5. Raphael Kimani Mutura | OIC Nakuru Met |
| 6. Ezekiel Kirui | Starlight Farmers Coop |
| 7. Mumbi Kinyanjui | County Environment |
| 8. Grace Karanja | Director, Environment & Climate Change |
| 9. Peris Nyambura | Nairobi Women Hospital |
| 10. Roger Ndichu | PWS KMD |

Environment / Water/ Roads/ Energy

- | | |
|------------------------|------------------------|
| 1. Julius Kilemba | CDMS Nakuru |
| 2. Peter Karanja | CDMS NAROK |
| 3. Christopher Kamoing | Starlight Farmers Coop |

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|--------------------|-------------------------------------|
| 4. Naomi Chemain | Engineer- Department of Agriculture |
| 5. Alex Kinuthia | SCAO Molo |
| 6. Hannah Maina | SCAO Gilgil |
| 7. Sammy Ngige | Environment Officer |
| 8. John Kamaru | ITK Turkana |
| 9. Zacharia Mwai | KMD Flood forecasting |
| 10. Edward Muriuki | Director – IMTR |

Conclusion

Please use this seasonal advisory in conjunction with the weekly, monthly and regular weather updates issued by the County Director of Meteorological Services, Nakuru.

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Group Photo

