

## **Farmers' Disaster Tips**

Bearing in mind that Jamaica is sensitively located in a disaster-region, yearly affected by hurricanes, flooding and landslides, farmers must be aware of how to minimize the effects of natural catastrophes. Farming practices are also susceptible to man-made threats such as fires and power outages; hence prevention measures are needed.

Farmers' prevention methods will vary from each other due to their choice of crop or livestock. Yet, disaster preparedness is a necessary activity for all.

- Pre-Planning (ALL farmers)
- Protecting Farm Buildings
- General Recovery Measures
- Crop Farmers' Tips
  - Plant for Disasters
  - Protecting Nurseries
  - At Release of Warning
  - Recovery Measures
- Livestock Farmers' Tips
  - Protecting Nurseries
  - At Release of Warning
  - During a Storm/Hurricane
  - Recovery Measures
- Marine Farmers' Tips
  - Before Going to Sea
  - At Release of Warning
  - During a Storm/Hurricane
  - Recovery Measures
- Aquaculture Farmers' Tips
  - At start of the season
  - At Release of Warning
  - Recovery Measures

### **PRE-PLANNING**

Planning is of great importance as this will ensure daily practices reduce the possible impact to be faced and helps us to get back to business quickly after a disaster.

- Develop a cropping/rearing calendar that includes timing of hurricane preparedness tasks, to be completed by the end of May.
- Establish gardens and farm buildings away from flood-prone areas, where possible.
- Join your local farmers' group and establish a revolving credit fund to assist with hurricane damage recovery.
- Identify dump sites in centralized locations, for disposal of waste which cannot be composted, used for soil conservation, etc.

- Identify vehicles and operators before a hurricane, to carry out recovery efforts in specified areas.
- Make a list of all equipment, tools, business records, stationery etc. and assign the responsibility for the safety of these valuables to one person.
- Store business records in a safe dry area.
- Store tools, equipment, pesticides, plastic bags, etc. in a safe dry area preferably on pallets or on a raised area.
- Regularly prune shade trees to prevent heavy overhanging branches from breaking and falling on crops and livestock.
- Always ensure that you have more than one week's supply of feed, water, medication, pesticides, fertilizer etc. in storage.

## **PROTECTING FARM BUILDINGS**

- Check status of roofs and strengthen where possible by installing storm straps/ nailing down zinc sheets/ replacing damaged zinc sheets, roof tiles etc.
- Tar roofs to prevent leakage.
- Secure windows and doors.
- Cut/remove overhanging limbs that may fall on buildings.
- Cut diversion trenches to take water quickly and safely from building.
- Palletize fertilizer and cover with tarpaulin.
- Store insecticides and fungicides etc. on a raised area for example, cupboard, or table, to prevent them from being washed away in the event of flooding.
- Disconnect electricity supply to the buildings.

## **GENERAL RECOVERY MEASURES**

- Assess property for damage to buildings, animals, crops, equipment etc.
- Check your surroundings for danger from fallen electrical wires or trees, pesticide spills, dead animals, etc.
- Check with neighbours and colleagues to ascertain their well-being for later assistance.
- Call your RADA extension officer, Parish office, farm group leadership, agriculture emergency operations centre (EOC) and report the damage caused by the hurricane.
- Begin cleanup activities as soon as possible.
- Inspect chemical stores; clean-up any chemical spillage to avoid poisoning and restrict contamination of water sources.
- Effect repairs to store houses and other structures, if necessary.
- Unclog drains, sink holes and canals to free up the passage of water.
- Repair drain, and canal infrastructure, electrical power lines (using competent electrician), pumping stations if necessary.
- Prop-up trees with 14 days of storm; cover roots with top soil and mulch.

## **CROP FARMERS' TIPS**

### **Plant for Disasters**

Here are some suggestions for planting:

- On slopes, establish crop rows and artificial/vegetative barriers across contours including appropriate, deep-rooting trees.
- Establish rows of vetiver ( Khus Khus / Razor) grass barriers on areas that are prone to slippage. The grass roots will help to hold the soil together and prevent erosion of the top soil.
- Construct and maintain drains, check dams, diversion ditches as necessary.
- Plant suitable trees to stabilize river banks.
- Establish windbreaks, using recommended plants and plant spacing/density.
- Practise protected horticulture (e.g. greenhouses) where appropriate.

### **Protecting Plant Nurseries**

- If possible, remove shade cloth (saron) and store in a safe place. If not possible, secure it firmly to the uprights/posts which support it.
- If the nursery is in a low-lying area, remove and store the essential parts of the irrigation system, in particular the pump, in a waterproof area.
- Open drains to allow the easy passage of water.
- Cut diversion trenches around beds to prevent flooding.
  - If possible, remove mixed potting soil, topsoil, and manure to an indoor location to reduce the possibility of them being washed away.

### **At release of warning**

Farmers should attempt to finish the prescribed tasks listed below before the hurricane begins. Farmers place themselves at risk of injury or death by working during a storm or flood. The likelihood of being electrocuted, hit by lightning or washed away by flood currents becomes greater.

- Remove cladding, lay plants flat, and cover with plastic held down by twine tied across house posts.
- Reap mature fruits and store in a suitable area for use after the hurricane.
- Remove irrigation lines and equipment, and store in an area secure from damage.
- Clear clogged drains and cut diversion trenches to lead water safely away from the farm.
- Protect road-ways and foot paths by constructing cross drains to take water safely off the roads and into a paved or grassed waterway.
- Construct dams (using tyres, logs, stones) across gullies to prevent or minimize gully erosion.
- Cut crops and tree to appropriate heights to reduce wind damage
  - Trim coffee trees in wind swept areas, partially to 34 inches or totally to 12-15 inches from the ground.
  - Keep fruit trees no more than 15 feet tall.
- Stockpile pruned branches for compost, coal and/or construction after the event.
- Clean up loose objects (branches, timber, zinc sheets, empty herbicide containers, fertilizer bags, cartons, plastics etc) that may be washed into and clog drains.

- Secure loose objects that may become wind-borne posing danger to life and property.
- Switch off electrical power to pump houses or other remote areas.

### **Recovery Measures**

Following advisories are given to enable a fast return to farming activities after the hurricane or flood.

- Inspect recently planted fields for possible need for supplying (or even replanting).
- As soon as practicable, address weed control. (Farms tend to get overrun by weeds following a hurricane).
- Recently planted nurseries may be given a supplementary fertilizer dressing to replace nutrients washed away during the storm.
- Sugar cane farmers should not re-fertilize fields after hurricanes. (This tends to result in poor juice quality and low cane price).
- Establish protected seedling production centres for early replanting after a hurricane.
- Prop-up trees with 14 days of storm; cover roots with top soil and mulch.

## **LIVESTOCK FARMERS' TIPS**

### **At release of warning**

Farmers should take the following precautions to reduce the likelihood of being electrocuted, hit by lightning or washed away by flood currents.

- Make a checklist of all farm animals
- Place identification marks on all animals
- Obtain enough livestock feed, medicines, water etc. to last at least one week.
- Stockpile feed and place at least 2 feet above ground in dry, flood-resistant and leak-proof area.
- Remove cattle and small ruminants from low lying areas to higher ground away from river banks and areas likely to have landslides or flooding.
- Release larger stock such as cattle, horses, mules etc. in an open field area. Tying animals increases the chances of injury.
- Collect any eggs from poultry
- Prune trees near all buildings inclusive of livestock houses.
- Check, strengthen and secure farm buildings and livestock sheds as much as possible.
- Take backyard chickens and other domestic birds into a building and place them safely in a cage or box if possible.
- Store medication and feed away from chemicals, fertilizers and toxic materials such as sprays or pesticides. All should be stored in secure, dry areas.

### **During a Storm/Hurricane**

- Maintain open communications with all farm personnel.
- Note all reports of damage for checking after the event.

## **Recovery Measures**

After the hurricane or flood, the farm should be returned to production as soon as possible.

- Remove zinc sheets, lumber, nails, etc. that can cause damage to animals.
- Clean-up debris of damaged plants
- Salvage valuable trees or plants
- Dispose of dead animals immediately, by composting, burial or burning.
- Clean and repair cages, pens, houses as soon as possible and return animals.

Disease in animals may be increased after a flood.

- Check for signs of pneumonia.
- Report signs of livestock infection to vet.
- Keep vaccinations up-to-date.
- Provide clean and uncontaminated water and feed.
- Clear pasture land.
- Where necessary, spray for mosquitoes and other insect pests.

## **MARINE FARMERS' TIPS**

### **Before Going to Sea**

Marine fishermen are strongly urged to listen to the radio/television for weather forecasts and advisory before heading out to sea. Fishers should not venture out unless confident that their boat can be navigated safely under forecast conditions of wind and sea.

If at sea, fishers should look out for the approach of dark threatening clouds which may foretell a squall or a thunderstorm. Having a radio is essential to check weather broadcasts periodically. The absence of proper feed is also useful, as heavy static on the radio typically suggests nearby thunderstorm activity.

If a thunderstorm catches you afloat put on personal flotation device.

### **After release of warning**

- Retrieve and secure fish pots, only if you have time (36 hours or more before the storm is due).
- Secure boats away from the reach of waves. Turn them upside down and tie securely to poles. If boats are kept in an area known to flood, fill them with water and secure to strong points, to prevent them from floating away.
- Ensure that boats are not in danger from falling trees or branches.
- Remove and secure boat engines, all gear, safety supplies etc.
- Inform all other fishers at sea through radio, flares, flags or mirror communication signals.
- Secure or remove all unsecured machines/ equipment and objects.
- Turn off all fuel pumps and secure all pump nozzles.
- Store all hazardous chemicals in a cool, secured room and contain within waterproof/airtight vessels (to reduce vapour release and the risk of electrical fires).
- Tape or cover all glass windows and keep them locked.

- Protect vital records in waterproof container or remove to safe off-site location.

### **Recovery Measures**

- Do not turn on electrical devices until proper checks by a competent person confirm that it is safe to do so.
- Listen to radio advisories.
- Remove all debris especially sharp objects.
- Assess damage to boats, landing sites, engines and other gear.
- Check all dispenser hoses and above ground piping, before dispensing fuels.
- Check all aboveground tanks and other storage devices before resuming station operations.
- Check cold storage to see how it functions.
- Contact community groups for reports of missing persons.
- Report all missing persons to your local police.
- Contact the Jamaica Defence Force Coast Guard for assistance with search and rescue.

## **AQUACULTURE FARMERS' TIPS**

### **At start of season**

- Listen to radio advisories
- In flood-prone areas, repair any broken burms and harvest stocks that can be marketed.
- Ensure that farm equipment is working properly e.g. battery, lights and radio.
- Clean all on-farm drain networks.
- Report any external drainage system that needs cleaning to the relevant authority.
- If you live on your farm, be familiar with established evacuation routes.
- Plan with neighbours on things to be done by each other if a hurricane comes.

### **After Release of Warning**

- Stock-up on feed (at least 1 week's supply). Be sure to stock on pallets well above floor level.
- Stock-up on all fuel needed. Have at least 3 days' supply.
- Charge cell phones fully.
- Service equipment, such as pumps, aerators and generators.
- Move all equipment to higher ground.
- Secure windows and doors and batten down roof on all farm buildings.
- Lower all pond water levels by at least one acre-foot and secure drain pipes in that position.
- Turn off all irrigation supplies to the farm.
- Cut away large trees from around ponds, road-ways and line poles.
- Obey the warnings posted by ODPEM.
- Disconnect electrical power supply.

### **Recovery Measures**

- Check ponds for flooding, pH and stocks.

- Clear blocked drains both on farm and along roadways.
- Render assistance to your neighbours. This will help to speed up the recovery process.
- Report any downed power lines or broken bridges to the appropriate authorities.