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Factsheet

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FARM TIPS TO PROTECT OUR CORAL REEFS

Even if you don't live or farm near a reef, you can help protect coral reefs in the Caribbean. There are many actions, little and big, that you can take on your land to help conserve coral reefs:

1. Conserve water. The less water you use, the less runoff and wastewater eventually find their ways back into the ocean. Don't over-water fields. You can tell if you are using too much when the water pools on top of the soil. Most plants can only soak up a small amount of water at a time, the rest is wasted. Water in the evening or early morning to reduce evaporation and allow the soil to hold water longer. Use less water by planting native plants or non-native plants that are adapted to our tropical soils and drier climate. Install a drip irrigation or micro irrigation system to directly water each plant.

2. Preserve or plant conservation buffers. Sediment is agriculture's number one pollutant. Preserve existing vegetation as conservation buffers along streams, roads, and fence lines. Native plants thrive in our tropical soils and drier climate. They need less water and care than **exotic** (non-native) plants. Conservation buffers slow rainwater runoff and filter soil and other pollutants from storm water. Most important, buffers hold soil in place and prevent erosion. Bare soil can be quickly washed away by rain storms (**erosion**), damaging fields and roads. Eroded soil pollutes streams, ponds, beaches and the ocean, and can kill coral reefs, fish and shellfish. **Keep as many plants on your land as possible. It is the easiest and cheapest way to conserve your soil.**

3. Discover the cover. Cover crops can be used to cover the soil between crops. Grasses are often used as cover crops. They are easy to establish and fast growing, and seed is readily available and relatively inexpensive. Cover crops improve soil fertility and reduce soil runoff to water bodies. Cover crops' roots help stabilize soil, prevent runoff, and ensure that your rich soil stays put. Cover crops produce more vegetative biomass than volunteer plants; transpire water, increase water infiltration, and decrease surface runoff and runoff velocity. Cover crops protect the soil from the impact of rain drops by reducing soil aggregate breakdown. By slowing down wind speeds at ground level and decreasing the velocity of water in runoff, cover crops greatly reduce wind and water erosion.

4. Know your soils. Soils have different abilities to hold water and nutrients available for plants. Loosen the soil around your plants to improve aeration and water up-take by the roots. For clay soils, add organic matter such as compost, manure or residue. Till or spade to help loosen the soil. Clay soils absorb water very slowly, so be careful not to over-water. For sandy soils, add organic matter to improve structure. Otherwise, water can move through the soil so quickly that plants won't be able to absorb it. Loamy soil is the best kind of soil. It's a combination of sand, silt, and clay that absorbs water well and stores it for plants to use. Have your soils tested to find out their type, nutrient levels and porosity.

5. Mulch bare soils. Conserve water and prevent erosion by mulching between plant rows with hay, grass or wood-chips, mulch mats (or blankets) or plastic fabric to reduce soil erosion. Cover the soil above plant roots with a one to two-inch layer of **mulch** (grass clippings, compost, shredded bark or other organic matter added to protect and improve the soil). Mulching reduces water loss and soil erosion.

6. Terrace steep slopes. Terraces prevent soil erosion and let you plant on steep slopes. Traditional dry wall rock terraces, concreted rock walls, concrete retaining walls, gabion basket walls or terraces or newer prefab modular plastic forms can all be used to reshape slopes into stepped, flat surfaces. These flat areas are easier to plant and help conserve soil. Make sure terraces have good drainage so they do not cave in when soils get soaked with water.

7. Use *Integrated Pest Management* (IPM) and apply pesticides wisely. IPM is simply an organized method to control pests (weeds, insects, fungi, etc.) on your farm. For IPM to work, you may have to put in more time and effort. Weeds can be controlled by hand-pulling, hoeing, or mulching. Insects can be removed by picking them off vegetables and garden plants, or by using garlic water or soapy water. Inter-crop different types of plants (especially herbs) next to each other to increase natural control of normal pests. You can also use **natural enemies**, helpful insects or bacteria that feed on pests on your farm. When you have no other choice, use non-toxic or least-toxic chemicals such as insecticidal soaps or **pyrethrins**. Pyrethrins are used to control a variety of insects – mosquitoes, caterpillars and beetles – in domestic areas and greenhouses. Follow label directions carefully and mix only the amount you need. **NEVER** mix different pesticides together. Check your plants for pests often. The earlier you catch a problem, the easier it is to control. **NEVER clean used equipment in or next to streams, or in places where polluted water can run into nearby water bodies.**

8. Don't Over-Feed Your Plants. Too much **fertilizer** added to your farm is likely to wash away before the plants can absorb it. Fertilizer in rainwater runoff can cause unwanted plant growth downhill and pollutes water in streams, ponds, beaches and the ocean. Nitrogen and other chemicals in fertilizers can seep down into the soil and pollute ground water, especially in sandy soils. Only add as much fertilizer as your soils and plants need. **DO NOT** add fertilizer if you know it is going to rain within 24 hours, so that it does not wash away. Try to use organic fertilizers like compost, manure, or fishmeal instead of man-made fertilizer.

9. Mulch or Compost Yard Waste. Recycle **yard waste** – fallen leaves, cut grass, pruned twigs and branches – into mulch or compost. Composting and mulching are cheap, natural ways to handle yard waste. Yard waste mulch can be used as a protective cover over the soil around your plants to save water, prevent soil erosion, and control weeds. Twigs and branches can be used at the bottom of a compost pile, chipped and shredded and added to the compost pile, or used for mulch around plants. After a storm or hurricane, even more yard waste is around that can be composted. In the Caribbean, most of this waste is either burned, polluting the air with smoke, or dumped into our already over-loaded landfills. Conserve resources and save money by using these materials to improve your soils.

10. Manage the Rain. Rain provides water for plant growth, but water management is critical for efficient crop production as well for preserving water quality. Water is an effective solvent for many chemicals. This makes it easy to pollute and has created human health and environmental concerns. Drainage systems are used on many agricultural soils that have excess water that interferes with agricultural operations. An effective and well-designed drainage management will help reduce surface water get in contact with pollutants.

For More Information:
USDA-NRCS
654 Muñoz Rivera Ave., Suite 604
Hato Rey, PR 00918-4123
Voice 787.766.5206
Web: www.pr.nrcs.usda.gov