# DIY Rainwater Harvesting

This playbook outlines the steps required to create a DIY rainwater harvesting system for garden irrigation and other non-potable uses. It details the process from collecting rainwater to effectively storing it for later use.

### Step 1: Site Analysis

Evaluate the potential collection sites for the rainwater harvesting system, considering factors such as roof size, location relative to the garden, and existing downspouts.

### Step 2: Material Collection

Gather all necessary materials and tools, including gutters, downspouts, rain barrels or tanks, first flush diverter, screens, and pipes.

### Step 3: Gutter Installation

Install gutters along the edges of the roof, ensuring they have a slight slope to direct water towards the downspouts.

### Step 4: Install Downspouts

Attach downspouts to the gutters to channel the water downwards, including elbow joints at the base to direct the flow toward your storage container.

### Step 5: Storage Setup

Set up the rain barrels or tanks in a secure location, elevated if possible to aid water pressure and flow. Attach screens or filters at entry points to prevent debris and insects from entering.

### Step 6: First Flush Diverter

Install a first flush diverter, which ensures initial rainwater containing contaminants from the roof does not enter the storage system, but is diverted away.

### Step 7: Connect Pipes

Connect pipes from the downspouts or first flush diverter to the rain barrels or tanks, ensuring watertight seals to prevent leaks.

### Step 8: Overflow Solution

Implement an overflow outlet from the storage containers that directs excess water away from the foundation of the building to avoid pooling and structural damage.

### Step 9: System Maintenance

Regularly clean gutters, screens, and first flush diverters, and inspect the system for leaks or blockages to maintain efficiency and longevity.

### Step 10: Water Usage

Use the collected rainwater for garden irrigation or other non-potable purposes, employing a hose or irrigation system connected to the storage tank.

## General Notes

### Permit Check

Before starting, check local regulations and zoning laws regarding rainwater harvesting as permits may be required for certain systems or areas.

### Water Treatment

If considering the use of collected rainwater for domestic purposes beyond irrigation, additional water treatment processes will be necessary to ensure water safety.

### Winter Preparation

In climates where freezing occurs, winterize the system by draining all water to prevent pipe and tank damage.