



INTRODUCTION

Welcome to the presentation on Enhancing Environmental Sustainability through Effective Monitoring Strategies. This presentation will explore the importance of effective monitoring strategies in achieving environmental sustainability. We will discuss the benefits of effective monitoring strategies and how they can be implemented in various industries.

MONITORING STRATEGIES IN AGRICULTURE



In agriculture, effective monitoring strategies can help farmers reduce their environmental impact by tracking their water and fertilizer usage, preventing soil erosion, and monitoring the health of their crops and livestock. By implementing these strategies, farmers can increase their productivity while minimizing their environmental footprint.

Creating a Python script for environmental monitoring can be a complex task, as it depends on what specific environmental parameters you want to monitor (e.g., temperature, humidity, air quality, etc.) and the hardware or sensors you have available. However, I can provide you with a basic example of a Python script to monitor temperature and humidity using a DHT11 or DHT22 sensor and a Raspberry Pi. You can adapt it for your specific needs:

```
import Adafruit_DHT
import time

# Set up the sensor type and GPIO pin
sensor = Adafruit_DHT.DHT22
pin = 4 # Change this to the GPIO
pin you are using

while True:
    humidity, temperature =
Adafruit_DHT.read_retry(sensor, pin)

    if humidity is not None and
temperature is not None:
        print(f'Temperature:
{temperature:.2f}°C')
        print(f'Humidity: {humidity:.
2f}%')
    else:
        print('Failed to retrieve
data from the sensor. Check the
wiring and configuration.')

    time.sleep(60) # Monitor every
60 seconds (adjust as needed)
```

This script reads data from the DHT22 sensor, which measures temperature and humidity, and then prints the values. You can customize the sensor type, GPIO pin, and monitoring interval to suit your needs. Additionally, you might want to store the data in a database or send it to a remote server for a comprehensive environmental


```
import os

# Path to the DS18B20 sensor
sensor_path = '/sys/bus/w1/devices/28-XXXXXXXXXX/w1_slave'

def read_temperature():
    try:
        with open(sensor_path, 'r')
as sensor_file:
            lines =
sensor_file.readlines()
            temp_line = lines[1]
            temperature =
float(temp_line.split('=')[1]) /
1000.0

            return temperature
    except:
        return None

while True:
    temperature = read_temperature()
    if temperature is not None:
        print(f"Current Temperature:
{temperature}°C")
```

```
import requests

api_key = "YOUR_API_KEY"
city = "YourCityName"

url =
f"http://api.openweathermap.org/data
/2.5/weather?q={city}&appid={api
_key}"

response = requests.get(url)
data = response.json()

temperature = data['main']['temp']
humidity = data['main']['humidity']

print(f"Temperature: {temperature}
°C")
print(f"Humidity: {humidity}%")
```

WHY IS EFFECTIVE MONITORING IMPORTANT?

Effective monitoring is important because it allows us to track and measure the impact of human activities on the environment. It helps us identify areas where we need to improve and make necessary changes to ensure environmental sustainability. Effective monitoring also helps us make informed decisions about resource management and conservation.



CONCLUSION

In conclusion, effective monitoring strategies are essential for achieving environmental sustainability. By tracking and measuring our impact on the environment, we can make informed decisions about resource management and conservation. Whether in agriculture, manufacturing, or any other industry, implementing effective monitoring strategies is crucial for a sustainable future.