# Environmental Monitoring Specialist

**ENVIRONMENT**

SECTOR

*Fostering innovation and better skills match with the green and digital sectors through the integration of emerging technologies (drones, VR, AR) in VET*

Co-funded by the European Union

360 DRONES

## ✏️Short Description

*An Environmental Monitoring Specialist is a professional who specialises in measuring, collecting, and analyzing data related to environmental factors. Their primary goal is to monitor and assess the quality of the environment, including air, water, soil, and other natural resources.*

*The Environmental Monitoring Specialist can be work in a wide range of settings, including government agencies, consulting firms, industrial companies, non-profit organizations, agricultural organizations, research institutions, and international organizations.*

## 🎯Key Skills Required

🕹️ **Drone piloting and regulations** – operating UAVs safely and in compliance with legal standards

🌍 **Environmental monitoring basics** – air, soil, water quality, waste, ecosystems & climate

🗺️ **GIS and mapping** – spatial analysis for monitoring and reporting

📷 **Specialized equipment use** – multispectral cameras, sensors & sampling devices

🧠 **Data analysis & Machine Learning** – extracting insights using AI-driven environmental models

## 💡Future Trends & Market Opportunities

The demand for Environmental Monitoring Specialists is expected to continue growing, as the world seeks to balance economic development with environmental protection and sustainability. In particular, these include increasing demand for an environmental protection, stricter regulations, advances in remote sensing technologies, expansion of renewable energy, conservation efforts, public awareness, and urbanization.

Several new drone technologies are impacting environmental monitoring: AI-powered Image Analysis, Enhanced Sensors, Long-range and Endurance Drones, Swarming Drones, Autonomous Navigation, Foldable and Modular Designs.

## ✈️Drone Applications

🌡️ **Thermal imaging or multispectral cameras:** Use thermal and multispectral cameras to detect temperature variations and vegetation health

📡 **LiDAR (Light Detection and Ranging):** Employ Light Detection and Ranging for precise topographic and vegetation structure mapping.

🌿 **NDVI mapping:** Assess plant health and monitor ecosystem changes using near-infrared imaging.

🛰️ **Aerial surveillance:** Conduct real-time monitoring of environmental conditions across large areas.

🧪 **Environmental sampling:** Collect soil, water, and air samples for laboratory analysis

📷 **High definition cameras:** Capture detailed visuals to support environmental assessments

🔧 **Use of sensors:** Operate sensors measuring air and water quality, noise, magnetic fields, humidity, and temperature.

## Sector & Classification

🌍 Sector: Agriculture / Urban Planning / Energy

🟦 ESCO Code: 213, 314, 311

## External Sources

🌐 How Drones Revolutionize Environmental Sampling & Management #drone #sustainability

🌐 Aerial Landfill Monitoring using Drones

🌐 Drought Monitoring and Planning with Drones

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Comprehensive guide on drone sensor integration, AI, and real-time data analysis for environmental monitoring

Innovative applications of drone technology in environmental monitoring and conservation efforts

The Use of Drones in Environmental Monitoring and Conservation

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