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# 13 CLIMATE ACTION



**WHAT IS THE GOAL HERE?**  
Taking urgent action to tackle climate change and its impacts.

**WHY?**  
Climate change is caused by human activities and is threatening the way we live and the future of our planet. By addressing climate change, we can build a sustainable world for everyone.

But we need to act now.

**13 CLIMATE ACTION**



The Paris Agreement has helped open up nearly **US\$23 trillion** in business opportunities in emerging markets for climate-smart investments

## Project Details

- **Intelligent Weather Forecasting System** monitors environmental conditions.
- Uses solar and battery power for continuous operation.
- Integrates Smart system for sensing and real – time data transmission
- Utilizes AI for accurate weather prediction.
- Ideal for smart agriculture, disaster management, and climate research.
- **Ensures reliable and automated** weather tracking.

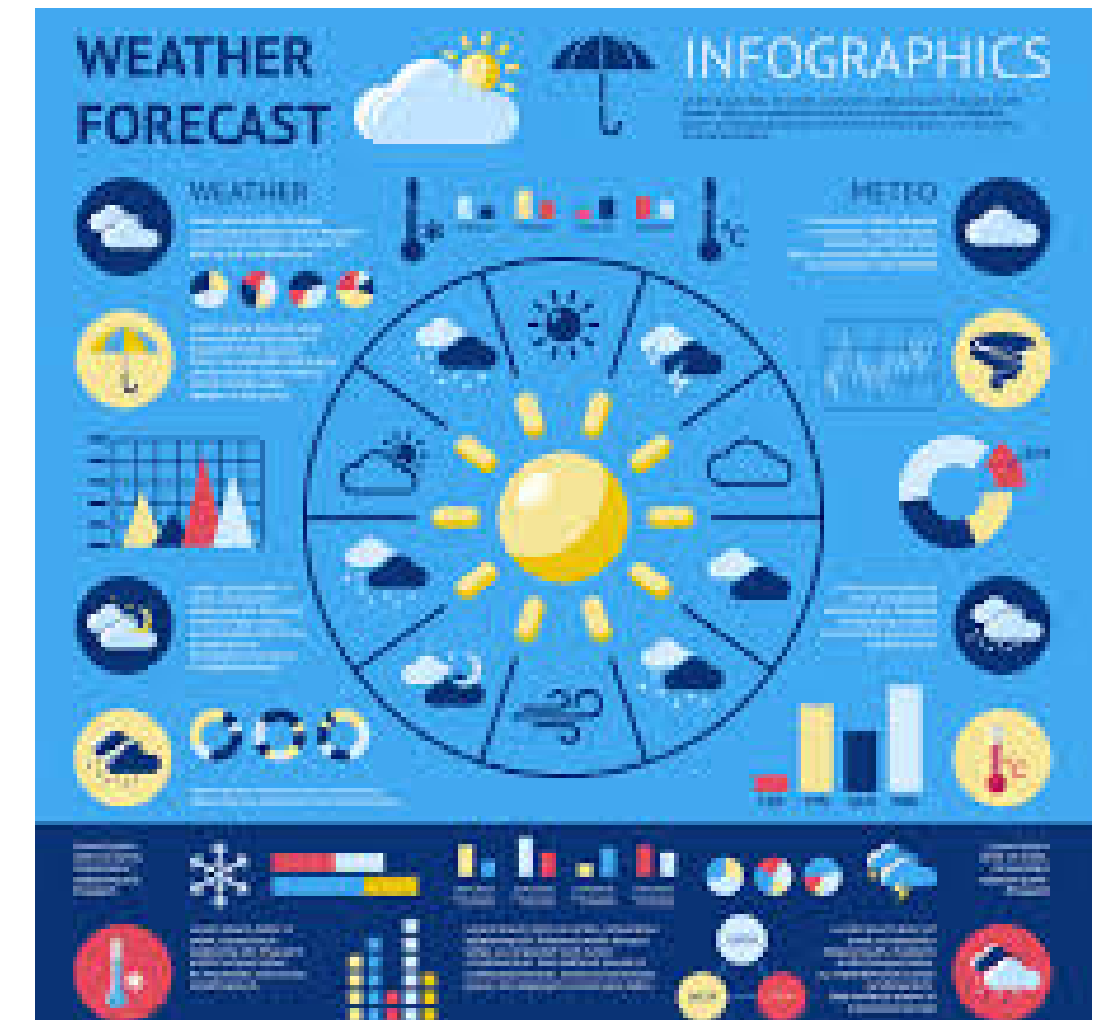
This system collects and analyzes various environmental parameters, including:

- Temperature
- Humidity
- Wind Speed
- Rainfall
- Atmospheric Pressure
- Pressure & Solar Density



## Concept of the solution

- The system utilizes ESP8266(Node MCU) for WiFi-based data collection, ensuring a cost-effective solution for real-time monitoring.
- The collected data is securely stored in MySQL (cloud server) and visualized using Grafana, allowing users to track environmental changes efficiently.
- AI processes the data to predict weather conditions and automatically sends alerts to mobile phones or computers, enhancing preparedness and decision-making.





## Novelty / Scope of Solution

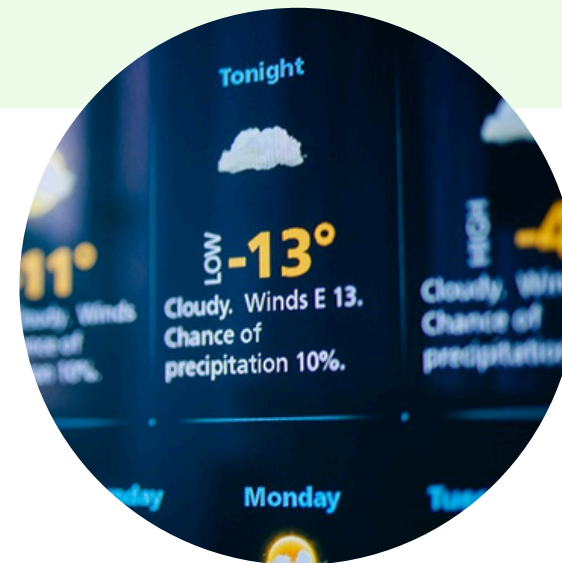
### AI-Powered Weather Forecasting

Utilizes AI algorithms to analyze environmental data and provide accurate forecasts with automated alerts.



### Real-Time Data Monitoring

Collects and stores data in a MySQL cloud server and integrates Grafana for live tracking and analysis.

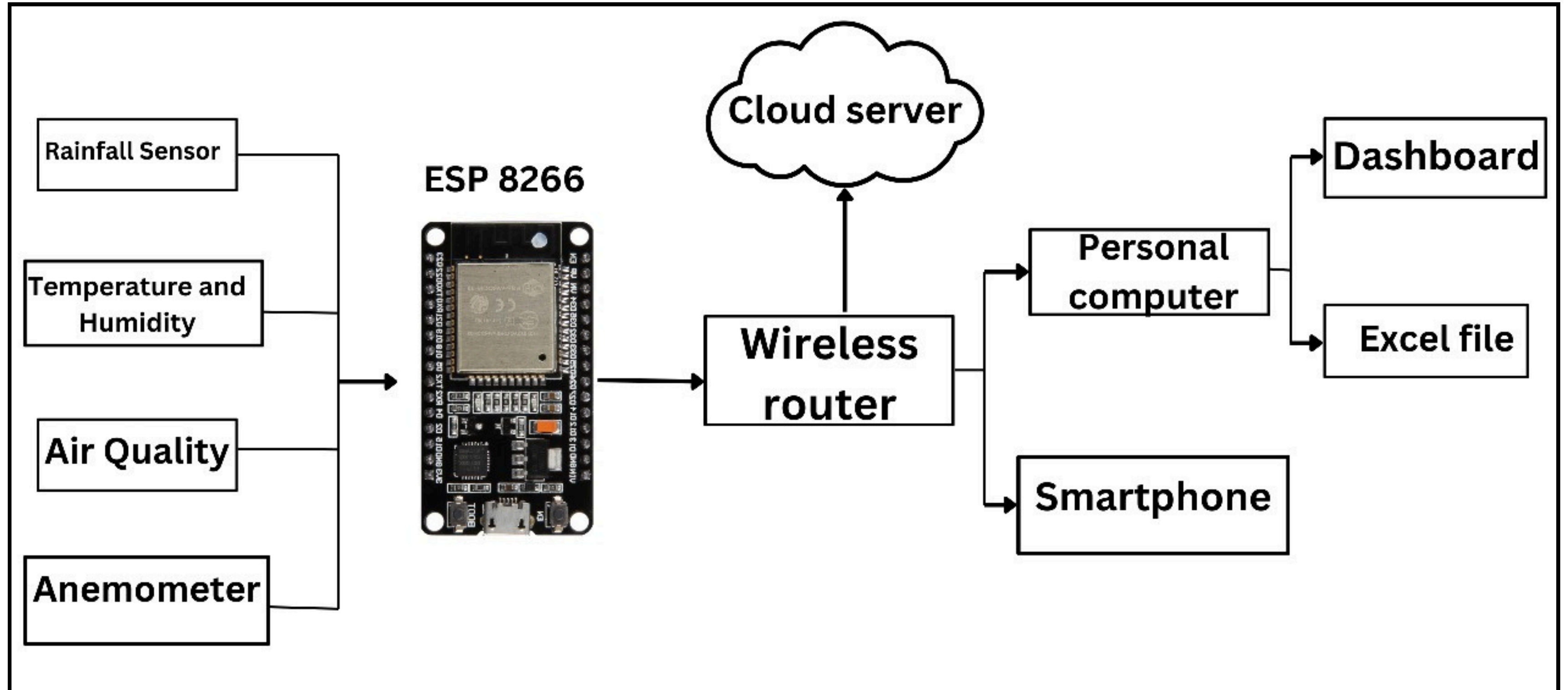


### Energy-Efficient & Cost-Effective Design

Runs on solar and battery power, using ESP8266 for low-cost, WiFi-based data collection









phpMyAdmin

Recent Favorites

New

flask\_db

information\_schema

mysql

performance\_schema

sakila

sys

weather\_data

New

sensor\_data

world

Server: 127.0.0.1 » Database: weather\_data » Table: sensor\_data

Browse Structure SQL Search Insert Export Import Privileges Operations Triggers

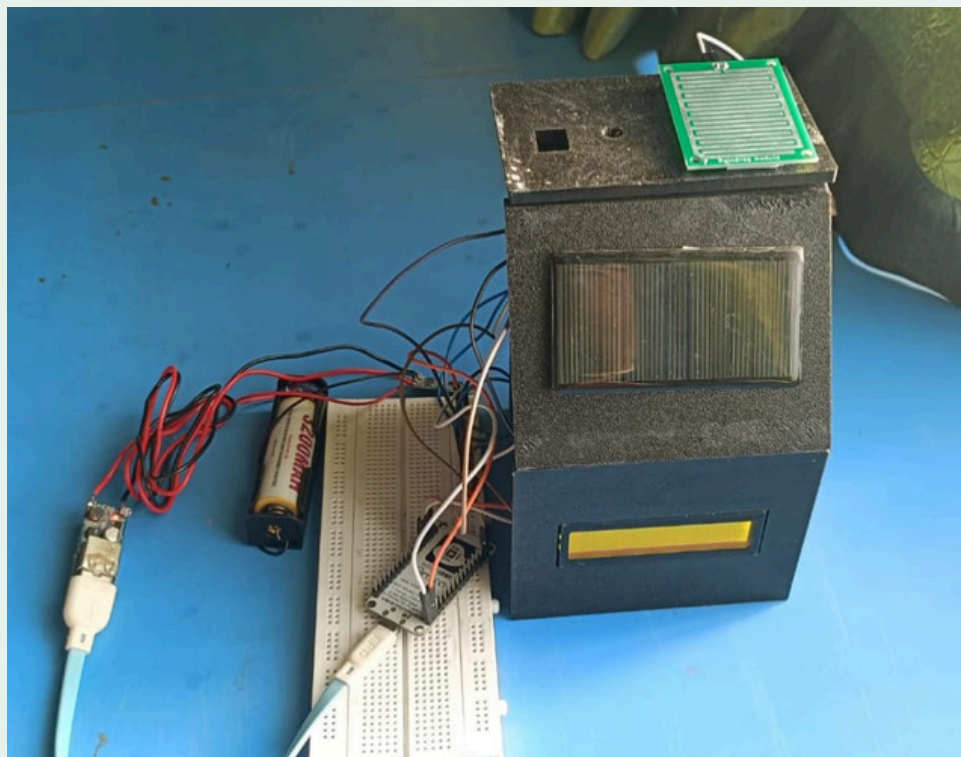
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Console



## Validation / Testing / Analysis

- Sensor calibration ensures accuracy in data collection.
- System stress testing ensures reliability during harsh weather conditions.
- Historical vs. real-time data comparisons improve prediction accuracy.



Category	Estimated Cost (INR)
1. IoT Devices & Sensors	₹5,050
2. Power Supply & Backup	₹2,700
3. Validation & Testing	₹1,400
4. 3D Printing (Enclosure & Casing)	₹2,000
5. Miscellaneous	₹650
Total	₹11,800

Cost Estimate(if required)







## PROS..

- **High accuracy** – Uses **real-time sensor data** for **weather prediction**.
- **Easy data collection** – ESP8266 enables seamless **WiFi-based data transmission**.
- **User-friendly visualization** – Uses **Grafana** for an interactive dashboard.
- **Low cost** – Affordable hardware components with **solar-powered operation**.

- Stable internet connection

## CONS..





# THANK YOU

