



# NG-Farm

## Next Generation Farm







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# History

Nirooye Gharb Founded and registered in Iran as a PJS Company in 1989. Nirooye Gharb has over 33 years of experience at National level to deliver solution based products and industry demand services. Through our history, we pride ourselves in being a customer centric organization delivering our services and product solutions through our human capital, partners and network of associates and consultants.

Our resources have the technical know-how and expertise to add value to our vertical Industries knowledge base and building on the existing knowledge base. We continuously strive to offer premier services with stakeholder satisfaction through International Standards, training and strong affiliated R&D. Applying a flexible Win-Win business approach with all our National and International partners achieving a “Think Global, Act Local” policy.



## Vision

Nirooye Gharb a leading Supplier of ICT Products & Services with over 30 years experience across various industries is expanding regional with higher Value Add services, new leading edge technology products and international partnerships.

Nirooye Gharb will continue to deliver to its stakeholders through high quality and international recognized Best Practices and Standards, while maintaining the highest level of ethical practices and social responsibility (CSR).



# CSR

Corporate Social Responsibility is crucial and paramount to how we fulfill our role as National ICT service provider through our investment in people, integrity in the market and retaining and building the trust of our partners. It is imperative that we continue with the best practices through our CSR policy to enjoy sustainable growth within the National and regional borders.

Some of our key CSR policies include :

- Equal opportunities for all employees, regardless of race, color, beliefs, gender or age.
- Transparent contracts, dealings and relationships
- Full Legal compliancy's on Tax, SSO and other relevant licenses.



# Activities

- Engineering, Procurement & Construction-EPC (Turnkey Projects)
- Managed Services: First Line Maintenance, Front-Office, Back-Office, NOC
- Smart Agriculture and IoF (Internet of Farm & Food)
- Venture Capital on Ideas & Start-ups (Kermanshah Innovation Factory)
- ICT Learning Services



# Smart Agriculture

By the report submitted by Forbes, till 2050 population of the world will be more than 9.6 billion consequently leading to %70 increase in food consumption. Since there is limited arable land the only way to overcome this crisis is to plan smartly: change in the agriculture pattern. With the growing adoption of the Internet of Things (IoT), connected devices have penetrated every aspect of our life, from health and fitness, home automation, automotive and logistics, to smart cities and industrial IoT.

Thus, it is only logical that IoT, connected devices, and automation would find its application in agriculture, and as such, tremendously improve nearly every facet of it.

Farming has seen a number of technological transformations in the last decades, becoming more industrialized and technology-driven. By using various smart agriculture gadgets, farmers have gained better control over the process of raising livestock and growing crops, making it more predictable and improving its efficiency. The technologies driving the 'smart farming revolution' include the Internet of Things (IoT), edge computing, 5G, block chain, Artificial Intelligence (AI), machine learning, robotics and drones.





Nirooye Gharb has designed, implemented & developed its Smart Agriculture Platform called “NG Farm” based on its valuable experience in ICT & Industrial Automation projects by a young motivated start up team.

“NG Farm” platform currently includes four smart modules:

- Arable
- Greenhouse
- Livestock
- Security of large-scale farms

Trend technologies such as cloud computing, edge computing, machine learning, NB-IoT & LoRa protocols, and big data are used in developing “NG Farm”, also it can be customized according to the customer requirements.



## Arable Module Features

- Smart Irrigation
- Smart Nutrition
- Diagnosis of pests & diseases
- Warning of the spread of pest attacks
- Planning & Management
- Failure detection in devices





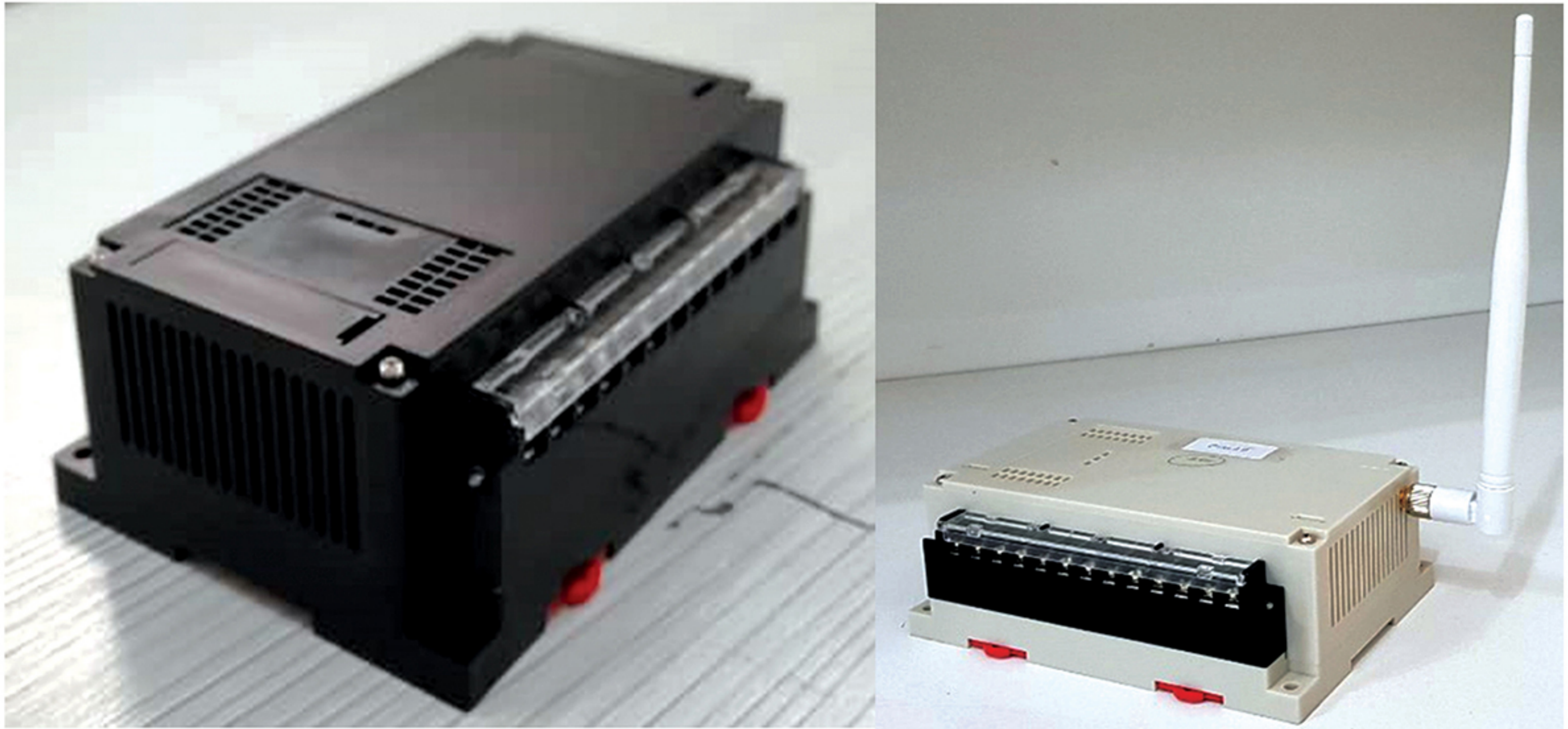
# Arable Module Features

The interface displays the following information:

- Top Left:** Logo 'NG' and a weather icon showing a sun and rain.
- Temperature:** 12°C, with a timestamp of 16:30 دوشنبه (Tuesday).
- Header:** 'کاربر ارشد' (Admin User) with a user icon and a red warning bell icon labeled '۲ هشدار !! لیست هشدارها' (2 Alerts!! List of Alerts).
- Environmental Data:**
  - دما (Temperature): 20°C
  - رطوبت (Humidity): 40%
  - سرعت باد (Wind Speed): 8 m/sec
  - جهت باد (Wind Direction): شمال شرقی (Northeast)
- System Controls:**
  - وضعیت شیر برقی (Electric Valve Status):** A grid of 13 numbered toggle switches. Switches 1-5 and 11-13 are ON (green), while switches 6-10 are OFF (red).
  - وضعیت پمپها (Pump Status):** Includes a flow rate of 50 lit/sec, pump status indicators (ON/OFF), and control options for 'خطا پمپ' (Pump Error) and 'فرمان پمپ' (Pump Command) set to 'ON'.
  - سناریو (Scenario):** A dropdown menu currently showing 'سناریو' (Scenario).
  - وضعیت (Status):** A toggle switch currently set to 'OFF'.
- Zone Data:**
  - Zone ۱: دما 25°C, رطوبت 70%
  - Zone ۲: دما 25°C, رطوبت 60%
- Right Sidebar:** A vertical menu with icons for: خانه (Home), تنظیمات (Settings), شیرهای برقی (Electric Valves), پمپ (Pump), سناریو ها (Scenarios), مدیریت کاربران (User Management), گزارشات (Reports), نمودارها (Charts), and خروج (Logout).



## Arable Module Features





# Smart Agriculture Service





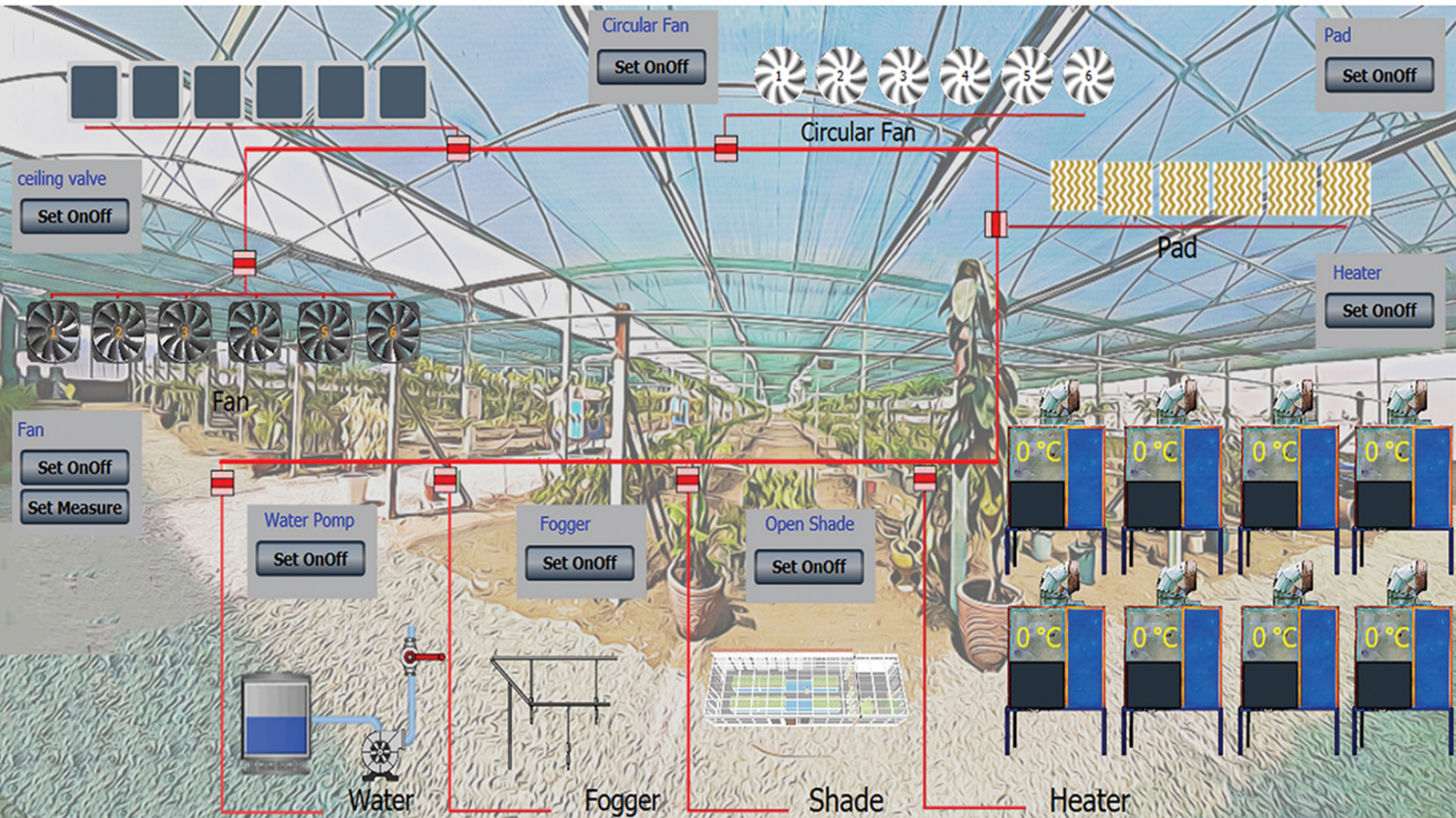
## Greenhouse Module Features

- Smart Climate Control
- Smart Irrigation
- Smart Nutrition
- Diagnosis of Pests & Diseases
- Planning & Management
- Failure detection in devices



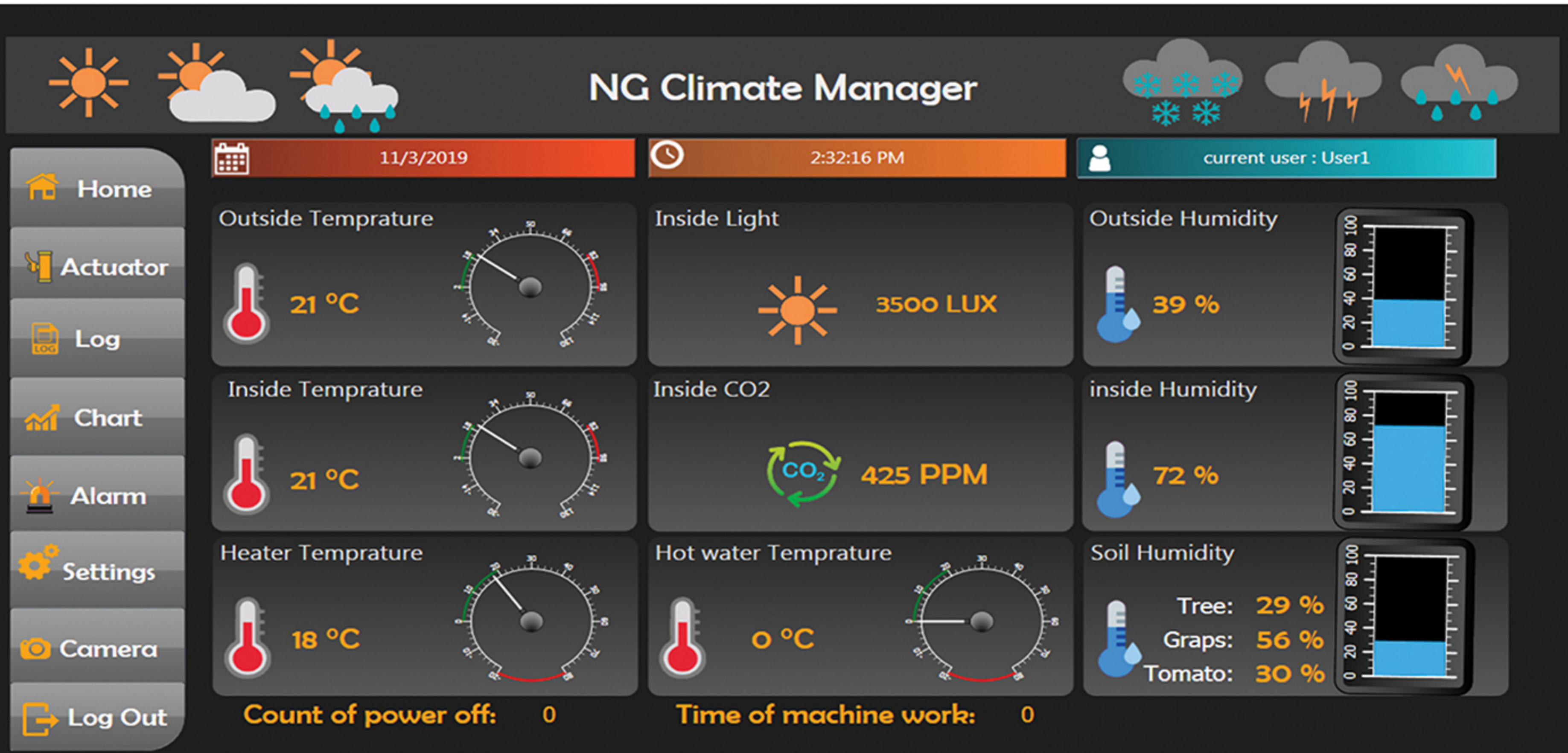


# Greenhouse Module Features



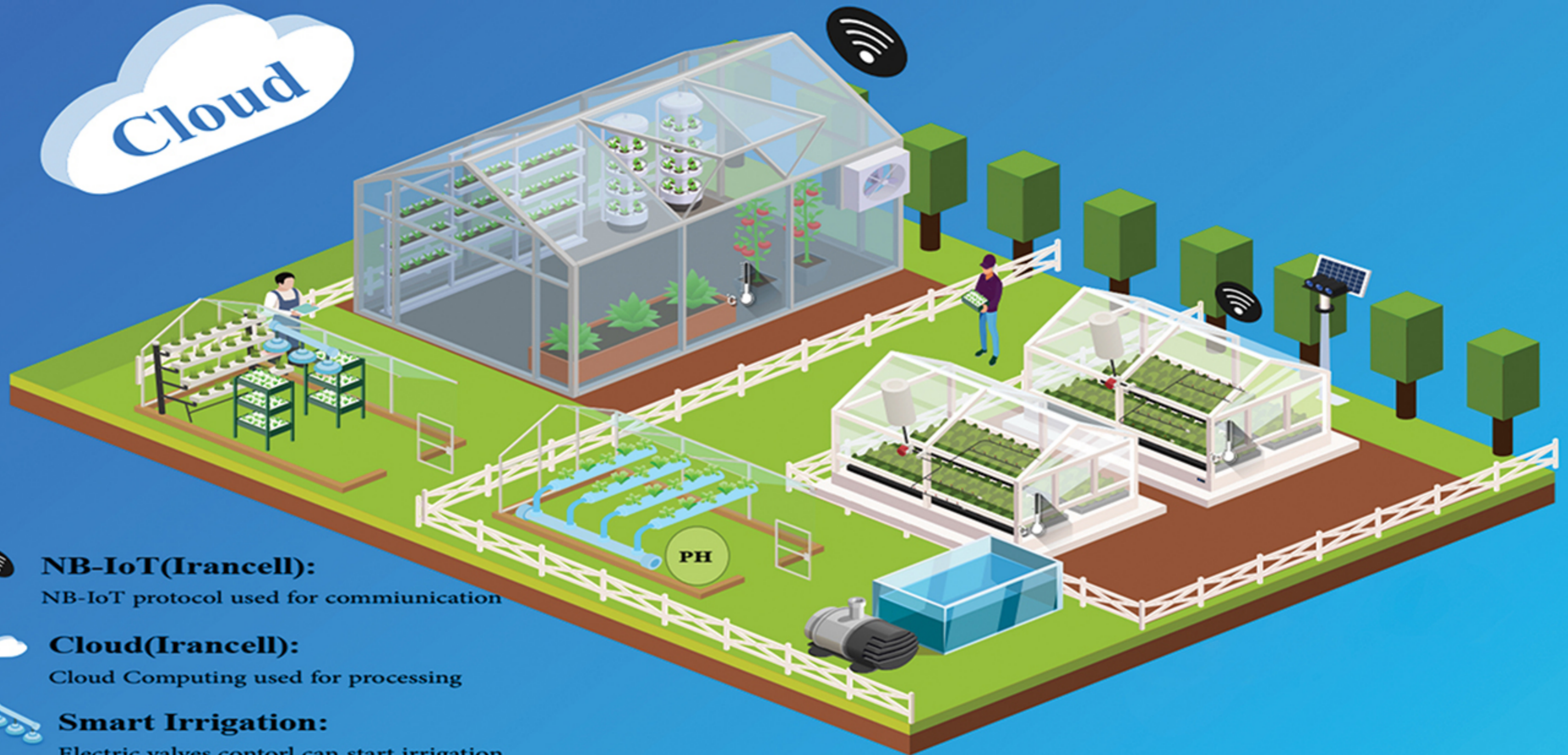


# Greenhouse Module Features





# Greenhouse Module Features



## **NB-IoT(Irancell):**

NB-IoT protocol used for communication



## **Cloud(Irancell):**

Cloud Computing used for processing



## **Smart Irrigation:**

Electric valves control can start irrigation



## **Temperature and Humidity:**

Monitoring temperature and humidity



## **Pump:**

Pump for irrigation and feeding



## **Water Level:**

Monitoring water level on tankers



## **PH Level:**

Monitoring PH of soil



## **Control of Temperature:**

Control of temperature with fans



# Livestock Module Features

- Livestock Status Monitoring
- Abnormal Livestock Alert
- Diagnosis of Livestock Diseases
- Warning of infectious veterinary diseases
- Planning & Management
- Failure Detection in Devices





# Livestock Module Features



## **NB-IoT(Irancell):**

NB-IoT protocol used for communication



## **Cloud(Irancell):**

Cloud Computing used for processing



## **Smart Gate:**

The smart gate is used to monitor weight, vaccination status and number of livestock



## Security Module Features

- Video Surveillance
- Unauthorized Entry Alert
- Record the Entry and Exit of Employees





# NG Farm Advantages

- Constant monitoring of soil, water and crop conditions
- Reducing wastage and consumption of water and energy
- Integrated management of production units
- Saving costs and reducing the cost of products
- Facilitating and improving management activities
- Facilitating knowledge management
- Compatibility with the environment, preservation of basic resources & more sustainable production
- Reduce human errors



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