

SWOT ANALYSIS : AUTOMATIC vs TRADITIONAL IRRIGATION SYSTEMS

SWOT	Automatic Irrigation	Traditional Irrigation
STRENGTHS	Saves water through precise distribution	Simple and inexpensive setup
	Reduces manual labor, freeing up time for other tasks	Easy to repair and maintain without advanced technical skills
	Monitors soil conditions in real-time, providing actionable data for better decision-making	Does not require access to advanced technology or stable power
WEAKNESSES	Higher initial investment cost	Wastes water due to lack of precision in water distribution
	Requires technical expertise for setup and maintenance	Time-intensive for farmers, requiring significant manual effort
	Relies on a stable power supply, making it vulnerable in remote areas	Limited scalability for larger farms or diverse crops
OPPORTUNITIES	Can be integrated with renewable energy sources like solar power	Can be improved by incorporating simple, cost-effective technologies
	Enhances crop yield and supports sustainability goals	Offers familiarity to farmers who may resist adopting modern systems
	Allows for IoT integration, enabling remote monitoring and control	Serves as a stepping stone toward semi-automated solutions
THREATS	Susceptible to technical failures, requiring costly repairs or replacements	Vulnerable to climate variability, such as droughts or excessive rainfall
	Limited adoption in low-resource areas due to high costs	Labor shortages could reduce its feasibility over time
	May face resistance from farmers unfamiliar with advanced technology	Decreasing water resources make inefficient systems less viable