



## Artificial Intelligence and Smart Agriculture for Agricultural Sustainability

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Climate Smart Agriculture is a production system which or largely excludes the use of synthetically compounded fertilizers, pesticides, growth regulators and livestock feed additives. To the maximum extent feasible, Climate Smart Agriculture systems rely on crop rotations, crop residues and good agriculture practices.

Climate-smart agriculture (CSA) is an approach that helps to guide actions needed to transform and reorient agricultural systems to effectively support development and ensure food security in a changing climate. CSA aims to tackle three main objectives: sustainably increasing agricultural productivity and incomes; adapting and building resilience to climate change; and reducing and/or removing greenhouse gas emissions, where possible.

CSA is not a set of practices that can be universally applied, but rather an approach that involves different elements embedded in local contexts. CSA relates to actions both on-farm and beyond the farm, and incorporates technologies, policies, institutions and investment. Different elements which can be integrated in climate-smart agricultural approaches include:

- Management of farms, crops, livestock, aquaculture and capture fisheries to manage resources better, produce more with less while increasing resilience
- Ecosystem and landscape management to conserve ecosystem services that are key to increase at the same time resource efficiency and resilience.

Services for farmers and land managers to enable them to implement the necessary changes.

The use of artificial intelligence technology is one of the pillars of the smart agriculture platform climate globally and artificial intelligence proves itself day by day as a necessary solution to improve agricultural productivity. As artificial intelligence is the mainstay of robots of all kinds, there is an increase in reliance on robots in the agricultural sector for better crop yields. Some countries like America and China.

Unmanned aerial vehicles (UAVs) are among the most important technologies that contribute to the development of agriculture in various fields: soil analysis, planting for different crops, foliar spraying of fertilizers and pesticides and others, monitoring, irrigation and evaluation. Real time.

Today, there are many small agricultural planes that make accurate maps of the land to analyze the soil and plan patterns of seed cultivation. The techniques available in the plane of measuring distances, ultrasound... so that these aircraft adjust their altitude so that they can survey the ground and pump the right amount of fertilizers or pesticides.

Artificial intelligence and the Internet of Things go hand in hand, and their role should not be based on data collection but should be analyzed. The Internet of Things is also required and cannot be separated from artificial intelligence to benefit from them in agriculture, which is what the world seeks in all applications for all fields of agriculture.

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