Climate change is making it increasingly important to protect local agriculture across the globe.

Drought has menaced many parts of the world. Major parts of Andhra Pradesh and India confront a debilitating drought. Here is the Worldwatch Institute's project on how to fight drought:

Climate change is making it increasingly important to protect local agriculture across the globe. Larger parts of India too face drought and Kharif crop is hit. The situation calls for strict water audit. Even today though water crisis has hit many urban centres, no local authority is understanding the gravity of the situation. Rain water harvesting, prudent use of water and prevent wastage will have to gain priority in urban and semi-urban areas.

The Nourishing the Planet (www.NourishingthePlanet.org) project highlights 12 agricultural innovations that can help global agriculture more drought resilient, as well as sustainable.

1 Agroforestry: Planting trees in and around farms reduces soil erosion by providing a natural barrier against strong winds and rainfall. Tree roots also stabilise and nourish soils. Encourage farmers to grow trees as windbreaks or as part of combined forage and livestock production, among other uses.

2 Soil management: Alternating crop species leads to soil amendments, allows soil periods of rest, restores nutrients, and also controls pests. Soil amendments help soils retain moisture near the surface by providing a direct source of water and nutrients to plant roots, even in times of drought.

3 Increasing diversity: Mono-cropping often exposes crops to pests and diseases associated with overcrowding, and can increase market dependence on a few varieties. Fruits and vegetables as intercrop is an ideal method.

4 Improving food production: Improved animal husbandry practices can increase milk and meat quantities without the need to increase herd sizes or associated environmental degradation. In India, farmers are improving the quality of
their feed by using grass, sorghum, stover, and brans to produce more milk from fewer animals. This also reduces pressure on global corn supplies.

5 Diversifying livestock breeds: Most commercial farming operations rely on a narrow range of commercial breeds selected for their high productivity and low input needs. Selective breeding, however, has also made these breeds vulnerable to diseases and changing environments. Protecting ethnic breed is imperative.

6 Meatless Mondays: Choosing not to eat meat at least one day a week will reduce the environmental impacts associated with livestock as well as increase food availability in domestic and global markets.

7 Smarter irrigation systems: Drip irrigation can be profitably practiced. This should also be the method to water lawn and kitchen garden. The present practice of using hosepipe uses excess water. Planning water-efficient gardens or farms using specific crops and locations can significantly reduce water scarcity problems.

8 Integrated farming systems: Farming systems, such as permaculture improve soil fertility and agricultural productivity by using natural resources as sustainably and efficiently as possible. Research and implementation of permaculture techniques, like recycling wastewater or planting groups of plants that utilise the same resources in related ways are to be adopted widely.

9 Agroecological and organic farming: Organic and agroecological farming methods are designed to build soil quality and promote plant and animal health in harmony with local ecosystems. Research shows that they can increase sustainable yield goals by 50 per cent or more with relatively few external inputs. In contrast, genetic engineering occasionally increases output by 10 per cent, often with unanticipated impacts on crop physiology and resistance.

10 Supporting small-scale farmers: Small-scale producers are affected more acutely by natural disasters and fluctuating commodity prices, even though they are more likely to be involved in food production. Government extension and support services should be adjusted to alleviate this deficit. Small and marginal farmers are to be extended subsidy in farming, seeds.

11 Re-evaluating ethanol subsidies: Reduce mechanised farming as much as possible to bring down cost. Encouraging clean energy alternatives to crop-based bio-fuels will increase the amount of food available for consumption, both at home and abroad.

12 Agricultural Research and Development (R&D): The research and development of farming has to take a determined step and help agriculture with innovative measures. The initiative has to be taken by the government as private companies, by virtue of their constitution are often legally bound to maximise economic returns for investors, raising concerns over scientific independence and integrity. Increased government funding and support for agricultural research, development, and training programs can help address issues such as hunger, malnutrition, and poverty without being compromised by corporate objectives.

Compiled by PK Surendran