

Green Credit Programme - Sustainable Way to Mitigate Climate Change

P.S.M Phanisri, A Shailaja, J. Hemantha Kumar, Jessie Suneetha W., V. Chaitanya, K Ravi Kumar and D. Naga Raju

Krishi Vigyan Kendra, Wyr.
PJTS Agricultural University

ARTICLE ID: 28

The green credit program is a national level in perseverance of government of India's mission titled LIFE –“lifestyle of environment” which seeks to combat climate change enhance environment actions to propagate a healthy and sustainable way of living based on traditions and values of conservation and moderation and for sustainable environment friendly development. The green Credit programme is aimed at leveraging a competitive market-based approach for green credit so as to encourage private sector, industries and companies to meet their environmental obligations and to incentive, voluntarily environmental actions taken by various stakeholders.

In the annual Union Budget 2023, the finance minister Nirmala Seetharaman has allotted Rs 35000 crore to achieve energy transition and net zero emission and announced green credit programme. The programme aimed to encourage behavioural change by incentivizing environmentally sustainable and responsive actions. The ministry of environment and forestry highlights “Central government decision to establish a domestic voluntary market mechanism known as Green Credit programme. Since the reforms and opening up policy in India has witnessed on a high-speed development of roads and industrialization and urbanization, with the economic development is gaining unexpected growth rate, the ecological environment is deteriorating rapidly, this calls for an urgent need to shift to a more scientific development mode with green sustainability as its core.

This scheme will create awareness among the individuals, industries, urban local bodies, gram panchayats and private sector, and other entities on green credit for understanding environment friendly actions. This article aims at enlightening other ways to reduce pollution, waste management from agriculture and sustainable lifestyle.

Curbing Crop Burning:

Rice- wheat cropping system dominate the agriculture landscape in the states of Punjab and Haryana. Farmers have a short window to harvest rice and plant the subsequent crop since delays in sowing negatively affect yield and grain quality by exacerbating climate risks. To facilitate the transition between crops, many farmers prepare their fields by burning crop residues. Crop residues burning is pervasive in North India for a variety of reason including mechanized harvesting driven by labour shortage, policies that favour yield intensification and ineffective enforcement of no burn regulations.

Advanced mechanical seeders, zero tillage method without burning shifts to crop management practices. Composting with Pusa decomposer which converts the crop stubbles into compost and its alternative for the chemical fertilizers. It is a fungi - based liquid solution. It can soften the hard stubbles and easily mixes with the soil in the field as compost. It can degrade the waste and it converts into nutrient rich compost. Reducing residue burning requires a multifaceted approach involving technologies, market development and a novel institutional and policy changes.

Crop residue usage in Biothermal Power plants:

The thermal power plants can procure crop residue from the farmers and they can utilize it for power generation. Rice residues can be used for generation of electricity. Jhalkheri , District Fatehgarh sahib in Punjab is the first plant in India. Based on the usage of biomass I.e. source of renewal energy (Pathak, 2004). These types of projects will provide extra income to the farmers subsequently supporting the environmental.

Greenhouse Gas emission:

During 1970-2010, the GHGs emissions from Indian agriculture have increased about 15%. The increasing use of fertilizers and other agri- inputs and the rising population livestock are the major drivers for the increase in GHG s emissions. The relative contribution in Indian agriculture to the total GHGs emission from all sectors of the country, however has decreased from 33% in 1970 to 15% in 2010. Whereas the contribution of global agriculture to the total emission has increased from 9% to 10 % during the period. This decrease is due to high from the energy, industry and transport sectors compared to that from agriculture. Crop lands in India are intensively managed and offer many opportunities to impose practices that can reduce net emissions of GHG's. All the crops and soil management aimed towards increasing



efficiency of water, nutrients, energy and other production inputs and those which increase crop production, lead to GHG mitigation (Sapkota *et al.* 2017). Since soil disturbance tends to stimulate soil C losses through enhanced decomposition and erosion reducing tillage operations in agriculture often results in soil carbon gain, although effects can be small (Powlson *et al.* 2016) and variable (Baker *et al.* 2007). The mitigation of GHGs emission from agriculture can be achieved by sequestering C in the soil and reducing the emissions of methane and Nitrous Oxide from the soil through changes in land use management and enhancing input use efficiency Eg Alternate Wetting Drying, Drip and Sprinkle irrigation, Nitrification inhibitor, Site Specific N management / use of LCC, Direct seeding of Rice, Crop diversification are the practices that can help in mitigating climate change.

Deploying Renewable energy:

Renewable energy sources play a vital role in securing sustainable energy with lower emissions. It is already accepted that renewable energy technologies might significantly cover the electricity demand and reduce emissions. In recent years, the country has developed a sustainable path for its energy supply. Awareness of saving energy has been promoted among citizens to increase the use of solar, wind, biomass, waste, and hydropower energies. It is evident that clean energy is less harmful and often cheaper. Agricultural irrigation exerts pressure related to water and energy security. This is because food and energy demand is dependent on both population growth and climate change. The principal technical bottlenecks to irrigation of farmlands are access to clean and cheap electricity as well as energy and water management in such systems. The use of renewable energy technology with appropriate management techniques can relieve the burden on the grid, reduce energy and water requirements in the agricultural sector and the cost expended on irrigation. Renewable technologies are now being used to meet various energy requirements ranging from pumping of water to space heating within the agriculture sector. Renewable energy use in agriculture has the ability to solve various challenges related to the use of fossil fuel as it involves little or no production of environmental emissions and non-reliance on imported fuels. The application of renewable energy in agriculture therefore yields huge profits. Renewable energy sources can be harvested for life, providing a long-term source of revenue for agriculturists. Presently, there are various cases of farmers and ranchers involved in the production sale of excess energy. This contributes significantly to the continuous development in energy security within the



agriculture sector. This further result from the independent supply of energy reduced environmental pollution and the application of diverse energy sources. Renewable energy sources like solar, wind, geothermal and biomass have various applications in agriculture.

Institutional Bio gas plants: There are regular waste disposal problems in almost all institutions like hostels , hospitals, convents, old age homes etc, where a large number of people living and their need for cooking fuels insignificantly less, ultimately leading to save LPG and environment pollution. Establishing bio gas plants will help in diminishing the dependency on LPG and electricity. This way the institutions can play their part in reducing pollution.

Encouraging FPO's and Private sectors employees can campaign in Planting trees, saving water, promoting natural and regenerative agricultural practices, improving waste management, segregation and collection, conserving and restoring mangroves by agro forestry systems, recycle, reuse ecofriendly products such as jute bags, bamboo products replacing plastics. Engaging in activities that promote environmental projects, reduce carbon emission while further contributing to India's climate goal

Steps needed:

To achieve sustainable agriculture a political commitment is needed as much as concrete investment. We must promote Innovative proven technologies that allow farmers to increase their productivity, adapt to climate change and become more resilient to shocks, environmentally and socially sustainable and financially viable climate management strategies and agricultural sustainable strategies such as revival of millets, energy promotion by waste management, crop diversification, solar for resilience.