

Mechanization- A Way to Transformation of Agriculture

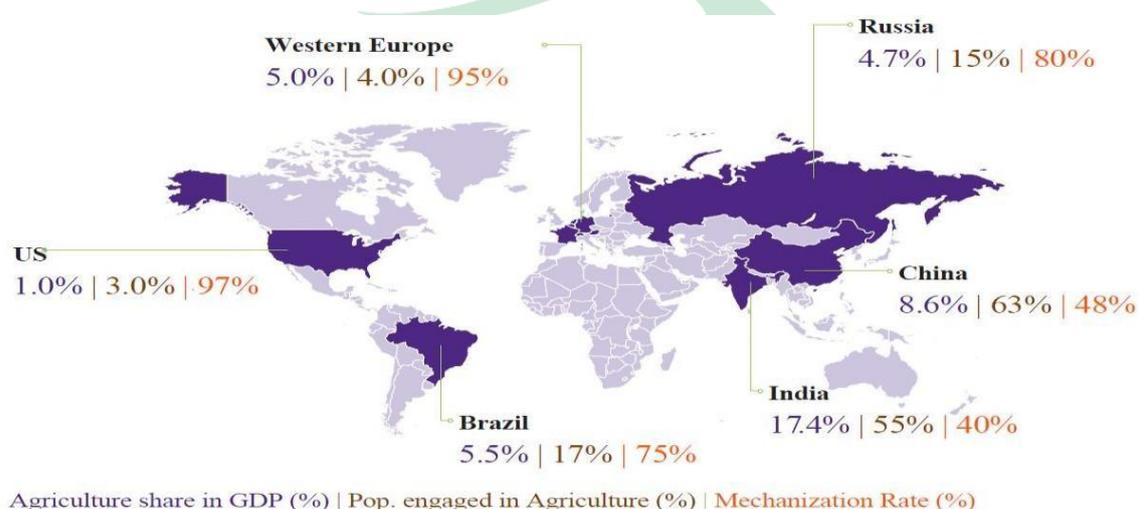
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Introduction

Agriculture is being one of the primary employment sectors to millions across the country. India ranks third in farm and agricultural output globally. India is among the top producers of wheat, rice, sugarcane and fresh fruits. Productivity in India has been highly variable due to inconsistent monsoons, which in turn presents a strong need for farm mechanization. As our market is considerably reliant on increasing agricultural produce, further promotion of farm mechanization is essential. Farm mechanization not only reduces labour time and post-harvest loss but also helps to cut down production cost in the long term.. As the population of the world is estimated around 9 billion within 2050, the demand for the food grain will also increase simultaneously. To meet the global food demand, agricultural mechanization will play an important role in increasing the productivity. Mechanization of farms means the use of machines for conducting agricultural operations, replacing the traditional methods which involve human and animal power.



Source –World Bank, industry report (2015)

World agriculture scenario

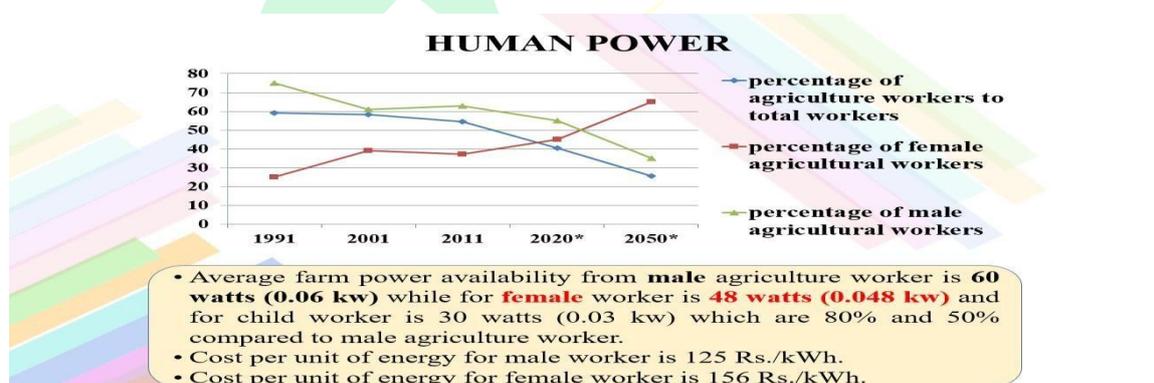
1. China has around 50 percent of farm activities mechanized .Main agricultural equipment - tractors, combine harvesters (self-propelled and tractor-mounted), rice transplanters and cotton processing machinery .Level of mechanization for various activities like ploughing, planting and harvesting levels are 76.1 percent, 49.2 percent and 46.9 percent, respectively. Their Government provides subsidies on agriculture equipment and machinery purchase to farmers, which is approximately 30 percent of the price of the equipment.
2. In Canada, Over 95 percent of agricultural activities are have been mechanized. The productivity has increased both because of mechanization and improvements and innovations through biotechnology. Farming is mainly done through seeding equipment, hay and forage equipment, grain-harvesting equipment and tractors in large extents. Government support.

Cash advances are provided to young farmers and new entrants to promote farming. The agricultural policies are confining in Canada but the farmers benefit in the form of higher output prices, less competition. Farmers getting benefits in form of loans and credit facilities at low interest rate to purchase farm equipment.

In the US, 97 percent of the farming is mechanized. The level of mechanization can be appraised by the fact that a farmer who provide food for 26 persons in 1960 supplies food for 144 people as a result of higher levels of farm mechanization. Almost all the farm activities are carried out using advanced machinery and equipment. Government heavily subsidizes grains, oilseeds, cotton, sugar, and dairy products in US. Farmers receive subsidies in the form of direct payment, price supports, export subsidies, etc.

According to the Central Statistical Organization (CSO), the agriculture and allied sector contributed approximately 14 percent of India's GDP (at constant 2004-05 prices) during 2013-14, down from 20 percent in 2003-04. This decline in agriculture sectors and increase in service sector's increase in share of GDP is consistent with a growing economy. During last decade, the overall workforce in agriculture and allied activities has declined by 11 percentage points, indicating a rise in secondary and

tertiary sectors, self-employment and regular jobs, which is also consistent with economic growth. The value chain in agriculture sector includes all the steps involved from preparation of soil to harvesting and post-harvest processing. For every step in the production lifecycle, use of machinery and equipment enhances the efficiency of the unit involved. Farm mechanization not just reduces labor time and post-harvest loss but also helps to cut down production cost in the long term. As our market too is considerably reliant on increasing agriculture produce, further promotion of farm mechanization is essential. The global demand for agricultural equipment has reached nearly US\$ 200 billion by 2018, with Asia contributing more than 60 percent to the total.



Benefit of mechanization –

- ✚ **Input savings:** some Studies have shown a direct relationship between farm mechanization (farm power availability) and farm yield. Farm mechanization is said to provide a number of input savings. Seeds (approximately 18-20 percent) Fertilizers (approximately 15-20 percent), Increased cropping intensity (approximately 5-20 percent).
- ✚ **Increase in efficiency:** -Increasing the efficiency of farm labor and reducing drudgery and workloads. Helps to reduce time by approximately 15-20 percent. Improving the harvest and reducing the post-harvest losses and bettering the quality of cultivation.
- ✚ **Social benefits:** Helps in conversion of uncultivable land to agricultural land through advanced tilling techniques. Improvement in the safety of farm practices. Helps in encouraging the young generation to join farming and attract more people to work and live in rural areas.