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AGRICULTURE MECHANIZATION

PAKISTAN

Turn Potential Into Profit



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Agriculture Mechanization – Pakistan



Mechanization is a crucial input for agricultural crop production and one that historically has been neglected in the context of developing countries. Factors that reduce the availability of farm power compromise the ability to cultivate sufficient land and have long been recognized as a source of poverty.

Economic growth in Pakistan's Agricultural sector lags behind growth in industry and services, creating an ever widening rural-urban income gap. Agricultural mechanization plays a strategic role in improving agricultural production and productivity.

Providing technology, to the agriculture sector means that more tasks can be completed at the right time and greater areas can be farmed to produce greater quantities of crops while conserving natural resources. Applying new technologies that are environmentally friendly enables farmers to produce crops more efficiently by using less power.

Sustainable agricultural mechanization can also contribute significantly to the development of value chains and food systems as it has the potential to render postharvest, processing, marketing

activities / functions, more efficient, effective and environmentally friendly.

Mechanization and Its Benefits:

Increasing levels of mechanization does not necessarily mean big investments in tractors and other machinery. Farmers need to choose the most appropriate power source for any operation depending on the work to be done and on who is performing it. The level of mechanization should meet their needs effectively and efficiently. This implies that power sources (human, animal or motor-based) need to be adapted to such necessities from an ergonomic, social, cultural and economic point of view.

The reduction of labor is a key element of sustainable mechanization and contributes to reducing hard workload by taking into consideration technologies appropriate to their needs and improving their access to appropriate methods of farm power.

Farm mechanization can:

- Increase land productivity by facilitating timeliness and quality of cultivation.
- Support opportunities that relieve the burden of labor shortages and enable households to withstand effectively.
- Decrease the environmental footprint of agriculture when combined with adequate conservation agriculture practices.
- Reduce poverty and achieve food security while improving people's livelihoods.

Types of Agricultural Machinery and their benefits:

This document will further elaborate the types of Modern Machinery used in modern farming and their benefits:

1. Tillage Implements:

Tillage is the first and foremost important step in any kind of farming. The conventional tilling is done with hands and some handmade tools which require lot of labor, extensive work and man hours. With the introduction of Modern Tillage Machinery, these hurdles can be overcome quite easily. Following are the tillage implements that can be used in tillage preparation:

- Chisel Plough
- Cultivator
- Disc Plough
- Rotary Tiller
- Ridger
- Canal Opener Ridge Plough



Benefits:

These tillage preparation equipment works deep beneath the soil surface while shattering the soil well below the surface. It also loosens and aerates the soil, leaving crop residue at top of the soil. The machinery helps in increasing water storage capacity of the soil in tillage preparation.

2. Planting / Seeding Implements

Seeding machines are also called planting machines or planters. After tillage preparation, this is the most important step in farming. The row to row and plant to plant distance is very precise for different crops. The planting machinery is a very fast and accurate means of planting and seeding. Following are the main planting machines used in farming:

- Seed Drill
- Multi Crop Seed Drill
- Cotton Drill
- Potato Planter
- Sugarcane Planter
- Bed Planter
- Bed Seeder



Benefits:

The primary advantage of seeding machinery is to save time and direct labor cost. Acres of land can be seeded and prepared in just within hours. Soil quality is also enhanced as erosion is reduced in using seeding machinery. This machinery can also be used to move plants / trees from one place to another along with the roots. Less seeds are wasted by using this machinery.

3. Harvesting and Threshing Implements

Harvesting and threshing is a very important step in farming. When crop is

matured and ready to be cut, the time is very critical between harvesting the crop and its storage / transportation. Much of the crop is wasted because of manual and ill practicing. Modern machinery helps in optimum profitability in harvesting the crops and timely availability of crops for storage or transportation to the market. Following are commonly used Harvesting and Threshing machines available in Pakistan:

- Tractor Mounted Reaper
- Potato Harvester
- Sugarcane Reaper
- Cotton Picker
- Wheat Straw Chopper
- Fodder Cutter / Chopper
- Rice Thresher
- Wheat Thresher



Benefits:

The mechanical harvesting allows farmers to rapidly clear large tracts, breakup the soil along with the removal of grass and preparing the ground for the next cultivation. These machines reduce dependence on labor and increase efficiency.

Mechanized harvesting produces cleaner grain as compared to the manual process, for which the market often is willing to pay a premium.

4. Land Developing Implements

Land development is often carried out after harvesting of crops for the preparation of new crop cultivation. Steps like Digging, Clearing, Leveling and Backfilling are involved in land development for farming. Following is the names of machinery used for land development:

- Tractor Front Blade
- Rear Blade
- Post Hole Digger
- Tractor Mounted Slasher
- Laser Land Leveler
- Mower

Benefits:

These Land development machinery is very useful and prepares the land according to the requirement in very short periods of time. These machines are very easy to handle and replace extensive labor and manual hard work. These machines are very good for irrigated and sloped land as well. The laser land development machines can be used in combination with sensors on scrapper to bring land to near flatness or with slight gradient (as per requirement).

5. Material Handling Implements

There are some other machinery items that are also used and are very helpful for the farmer / grower to handle the produce and raw material apart from the above mentioned machinery such as:

- Hydraulic Tipping Trolley
- Tractor Backhoe
- Water Bowser



www.uaar.edu.pk

www.un-csam.org

www.agripak.pk

<http://www.pbs.gov.pk/content/agricultural-machinery>

www.agribusiness.com.pk

www.smeda.org.pk

Benefits:

This type of machinery is very helpful in landscaping, digging trenches and excavating. These are very handy and can be quickly attached and modified with other machinery as required. The water browser can hold up to 2000 gallons of water.

Availability in Pakistan:

These farm mechanized machinery items are easily available in Pakistan. Good quality manufacturers are producing these machinery items at very low price compared with the imported machinery. Most of such machinery is manufactured in Karachi, Lahore, Faisalabad and Multan.

Pakistan Agricultural Machinery and Implements Manufacturers Association (PAMIMA) is the apex national level Trade Association working in close collaboration with other institutions in the country to provide modernization based solutions to agricultural implements manufacturers of Pakistan through its statutory functions.

Disclaimer:

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www.agripunjab.gov.pk

www.uaf.edu.pk

