

Department of Agriculture & Cooperation
FREQUENTLY ASKED QUESTIONS (FAQ'S)
(Agricultural Implements and Machinery Division)

- **Why Mechanization?**

The mechanization involves judicious application of inputs by using agricultural machinery/equipment e.g. hand tools, bullock drawn equipment, power driven machines including the prime movers for performing various operations required for crop production activities. The mechanization ensures reduction of drudgery associated with various farm operations as also economize the utilization of inputs and thereby harnessing the potential of available resources.

- **If mechanization is necessary, what are the priorities?**

The mechanization is necessary to enhance productivity and conservation of energy required for various operations involved in crop production, threshing, processing, transportation, value addition, storage etc. The priorities for mechanization are to be decided as per the actual requirements of various agro climatic zones and involve land preparation equipment; crop production techniques for cereal crops, for cash crops, for oilseeds and pulses and horticultural crops etc.

- **What are the efforts made by the Government to promote mechanization?**

With a view to enhance the pace of agricultural mechanization, the Government has laid emphasis to provide financial assistance to the farmers and other target groups for purchase of different kinds of farm equipment, demonstration of new equipment among farmers for spread of new technology, human resource development in operation, maintenance/ repairs and management of agricultural machinery and the quality improvement through testing and evaluation besides institutional credit & fiscal measures. The Farm Machinery Training & Testing Institutes at Budni (M.P.), Hissar (Haryana), Garladinne (A.P.) and Bishwanath Chariali (Assam) established by the Government have playing a vital role in promoting agricultural mechanization.

- **Is there Agricultural Mechanization Promotion Law?**

As of now, there is no Agricultural Mechanization Promotion Law in the country.

- **Is there any National Policy on mechanization?**

As of now, there is no separate National Policy on Agricultural Mechanization. This is covered under Agricultural Policy. The Government promote agricultural mechanization

in the following directions:-

1. Agricultural mechanization should contribute to sustainable increase in yields and cropping intensity so that the planned growth rates in agricultural production are achieved and maintained.
2. The income of agricultural workers (cultivators and labourers) should increase at a satisfactory rate so that the disparity between urban and rural incomes is contained, and the agricultural worker given his rightful opportunity to lead a dignified life.
3. The benefits of agricultural mechanization should be extended to all categories of farmers with due consideration to small and marginal ones and to all regions of the country especially the rainfed areas.
4. Agricultural mechanization should make the environment worker friendly especially for the women workers by reducing drudgery and health hazards and by improving safety in production operations.
5. Agricultural mechanization should contribute to conservation of land and water resources and to more efficient use of inputs like seed, chemicals, fertilizers and energy.
6. Agricultural produce loss, both in quality and quantity, should be reduced through timely operations and improvement in process and techniques.
7. Agricultural mechanization should lead to reduced costs of production of different commodities, to increase income of farmers and to impart a price advantage to Indian agriculture for competing in the international market.

- **What is the progress of Agricultural Mechanization?**

Over the different Plans, emphasis have been laid by the Government on selective mechanization which has resulted in increase in the total power availability on farm from 0.29 Kw/ha in 1971-72 to the level of 1.23 Kw/ha in 2001-02. This is likely to increase to a level of about 1.5 Kw/ha by 2005-06. Farm power availability per unit area is low in comparison to the developed countries of the world.

- **What is the present status of mechanization in India ?**

The Indian agriculture has undergone a sea change i.e. from manual and bullock farming to utilization of improved equipment and power farming and has resulted in

increasing the cropping intensity. India does not need to import tractors, combine harvesters and other improved equipment, which are available within the country. Specialized equipment for cultivation of vegetables, oilseeds and other cash crops, however, need to be imported/developed to increase productivity of these crops to with the developed countries in the world.

- **What are the constraints in promotion of mechanization?**

The constraints in promotion of mechanization include the varied requirement of equipment for each agro climatic zone, the small and fragmented land holding, low investment capacity of the farmers, inadequate irrigation facilities, know how status of the farmers, repairs & maintenance facilities etc.

- **Whether there is labour displacement /unemployment due to mechanization?**

No, the mechanization does not necessarily displace labour rather through mechanization the labour employment particularly for paid employment is enhanced by way of increase in cropped area handling of more produce, expansion of marketing infrastructure etc.

- **Whether irrigation potential is a limitation for adoption of mechanization?**

The experiences have shown that rate of adoption of mechanization is certainly linked with the irrigation facilities developed in different parts of the country. The States with adequate irrigation facilities, the mechanization has progressed at faster rate in comparison to States that have scant irrigation facilities and dependent on monsoon. However, the equipment for rainfed areas have also been developed which could be adopted for raising crops.

- **What are the priorities of mechanization in the present scenario?**

With a view to spreading new technology, the demonstration of newly developed equipment has been taken up through State Governments, ICAR and through Central /State organizations. Efforts are on to improve the quality of agricultural equipment particularly those manufactured in the small scale sector, development of human resource for promotion of new and hi-tech equipment for the benefit of small and marginal farmers. Due priority to popularize gender friendly agricultural equipment for women farmers is also being given. Emphasis is also being given on promotion of resource/residue management equipment, water and energy conservation equipment etc. Institutional credit is available to the farmers besides subsidy for the purchase of various identified equipment.

- **What is the role of Farm Machinery Training & Testing Institutes (FMTTIs) in promotion of agricultural mechanization?**

The Farm Machinery Training & Testing Institutes contribute in the promotion of agricultural mechanization in terms of Human Resource Development, Test and Performance evaluation of agricultural machinery to assess their functional suitability.

- **Which are the target groups of the beneficiaries for various training programmes undertaken by the Farm Machinery Training & Testing Institutes?**

The target groups of the beneficiaries of various training programmes undertaken by the FMTTIs are as under: -

Series of training programme	Name of Training programme	Beneficiaries
A Series	Agricultural Machinery Utilization Training Course	Farmers, technicians, actual machinery users and sponsored candidate from defence Government departments & organizations.
B Series	Refresher Course on Agricultural Machinery Utilization	Sponsored incumbents from various Government departments and technicians looking for self-employment.
C Series	Technician Course on Farm Machinery Service and Repairing	Technicians working in private workshops, farmers/ actual machinery users experience in the operation and maintenance of machines, ITI certificate orders etc.
D Series	Summer Course Development Graduate on Agricultural Machinery and Utilization	Under Graduate students sponsored by various agricultural engineering colleges/agricultural universities and ITI certificate a course student sponsored by it is.
E Series	Training of Rural Youth for Self-employment	The unemployment youth sponsored by DRDAs for training under various Government run schemes i.e. SJSRY, PMSRY etc.
F Series	Trainers Training Course	The need based training programmes are conducted for sponsored incumbents from tractor industry, power tiller industry and various Government departments, State/Central Government institutions, banks, extension workers etc. The programmes are also conducted on familiarization on with the Dangerous Machine (Regulation) Act, testing, interpretation of test

		reports, farm machinery management and energy conservation for the beneficiaries of above stated institutions.
G Series	Energy conservation and Management Course	The farmers and actual machinery users are imparted on site training on maintenance, proper use energy conservation and & safety aspects of agricultural machinery.
H Series	Training for foreign nationals	The beneficiaries from various countries under bilateral/ international Government aided programmes.

• **What is the source of information for such training programmes?**

The information on training programmes conducted by various FMTTIs can be obtained from advertisements released by the institutes in leading newspapers. The FMTTIs at Anantpur and Assam also release advertisement in regional leading newspapers. The beneficiaries can also obtain the information released by the institutions through All India Radio, TV programmes in Krishi Darshan. The information can also be obtained at the following addresses: -

1. Director, Central Farm Machinery Training & Testing Institute, Tractor Nagar, Budni (MP)-466445.
Tel. 07564-34729 Fax 234743
email- fmti-mp@hub.nic.in
2. Director, Northern Region Farm Machinery Training & Testing Institute, Tractor Nagar, Sirsa Road, HISSAR- 125 001 (HARYANA)
Telefax : 01662-27684
e mail- fmti-nr@hub.nic.in
3. Director, Southern Region Farm Machinery Training Testing Institute, Tractor Nagar, P.O. Garladinne-515 731, Distt. Anantpur (Andhra Pradesh)
Telefax : 08551-286441
e mail - email-fmti-sr@hub.nic
4. Director, North Eastern Region Farm Machinery Training & Testing Institute, Biswanath Chariali –784 176, Dist SONITPUR (ASSAM)
Telefax : 03715-222094
email- fmti-ner@hub.nic.in

- **What is the difference between the training programmes undertaken by Farm Machinery Training & Testing Institutes and by other organizations?**

The basic difference between the training programmes undertaken by FMTTIs and other organizations is that the FMTTIs impart skill-oriented training on agricultural mechanization to the various groups of beneficiaries whereas most of the other organizations conduct mainly information based training programmes.

- **Whether the training programmes conducted by Farm Machinery Training & Testing Institutes have been evaluated?**

The training programmes conducted by FMTTIs are evaluated through postal structured questionnaires which include information on enhancement of skill of the trainee in operation, maintenance, repairs of agricultural machinery, adoption of practice propagated during training programmes, conservation of various inputs for crop production and energy in use of agricultural machinery, the status of employment and their suggestions on training programmes. etc. The training programmes have also been evaluated once by the Indian Institute of Management, Ahmedabad which has assessed the training needs in various States and have recommended to establish more such Training Centers in different States. However, it has not been possible to establish additional training institutes over and above the existing 4 FMTTIs located at Budni (MP), Hissar (Haryana), Garladinne (AP) and Biswanath Chariali (Assam). Under the circumstances, the requirement to augment the Human Resource development in Agricultural Mechanization, is proposed to be met by adding a component of outsourcing of training activities through SAUs, Agricultural Engineering Colleges , ICAR Institutes etc. during 10th Plan.

- **Is there any post-training follow up system with the trainees?**

The institutions are collecting information from the trainees through postal survey on adoption of mechanization practices and skills propagated during training programmes, taking up of minor repairs themselves etc. As a result of training there is proper utilization of machines/ conservation of energy. The refresher courses are also conducted based on requests.

- **Is the testing of agricultural machinery mandatory?**

The testing of agricultural machines and implements is not mandatory. The major equipment like tractors, power tillers, self-propelled combine harvesters, power operated equipment, irrigation, plant-protection equipment etc. are being tested by FMTTIs at Budni and Hissar on regular basis. Whereas other equipment (manual, bullock operated and tractor/power tiller operated) is being tested at the FMTTIs at Garladinne (A.P.) and Bishwanath Charrali (Assam).

- **Why testing?**

The Testing of agricultural machinery is essential with a view to assess their functional performance, suitability under varying field conditions, establish, performance data as specifications for marketing and extension services and assist financial institutions/banks etc. The information developed by way of testing of machines may be of interest to the agricultural machinery users, research institutes manufacturers etc.

- **Who can request for testing of agricultural machines?**

Application for test of agricultural machinery/equipment can be made by the manufacturers/accredited importers, ICAR Institutes, State Governments, Agro Industries Corporation and by any interested individual/group.

- **What are the pre-requisites for the testing of agricultural equipment?**

Pre-requisites for testing of agricultural equipment at FMTTI's includes submission of application and specifications for each equipment in a prescribed format, an undertaking to abide by the Rules & Regulations for testing of agricultural machinery at FMTTIs, to provide any additional information which is considered necessary by the Testing Institute/Govt. and payment of Test Fee as fixed by Government.

- **What types of tests are undertaken by FMT&TIs?**

The types of tests undertaken by FMTTIs are as under: -

1. **Commercial Tests** are for establishing performance characteristics of machines that are in or ready for commercial production. The following types of commercial tests will be undertaken:
 - a. Initial Commercial Tests on indigenous or imported proto-type machines ready for commercial production.
 - b. Batch Test on machines, which have already undergone Initial Commercial Test and /or are being manufactured commercially in the country.
 - c. Test in accordance with OECD Standard Test Code shall be undertaken on machines on the specific request of the manufacturer/applicant, exclusively for export purposes.
2. **Confidential Tests** are for providing confidential information on the performance of machines, whether ready for commercial production or not or to provide any special data that may be required by the manufacturer/applicant.

- **Are there any regulations to be followed during the course of test?**

The Regulations for testing of agricultural machinery at FMTTIs has approved by Ministry of Agriculture, Government of India and should be essentially followed during the course of test of various types of equipment.

- **What is the schedule of Test Fee for various types of equipment?**

The schedule of test fee for the equipment is as under: -

SI.No.	Name of Machinery/Equipment	Schedule of Test Fee (Rupees)
1.	Tractors ICT	2,25,000/-
	BT	2,15,000/-
	OECD	1,75,000/-
2.	Power Tillers ICT	1,25,000/-
	BT	1,20,000/-
3.	Combine Harvesters (Self propelled)	3,15,000/-
4.	Combine Harvesters (Tractor mouted/operated)	2,40,000/-
5.	Hand Tools	1000/-
6.	Components	1000/-
7.	Power operated threshers	4000/-
8.	Animal drawn equipment	2100/-
9.	Tractor Drawn/operated equipment	6800/-
10.	Manually operated equipment	1900/-
11.	Power Tiller driven/self propelled equipment	4000/-
12.	Diesel Engine	2400/-
13.	Spark Ignition Engine	2175/-
14.	Centrifugal Pump	1800/-
15.	Plant Protection Equipment	
	(a) Hand operated kransack sprayers.	2625/-
	(b) Power operated pneumatic sprayer.	6262/-
	(c) Foot operated sprayers.	4275/-
	(d) Rock sprayer	2400/-

- **What is tentative time involved in testing of various types of agricultural equipment?**

The tentative time involved in testing of various types of agricultural equipment is as

under: -

SI.No.	Name of the Machinery/Equipment	Tentative time involved in testing/release of test report (month)
1.	Tractors & Power Tillers (ICT/BT)	10/8
2.	Combine Harvesters (for two or more crops/single crop)	15/9
3.	Centrifugal pump/Diesel Engine/PPE under BIS certification Marks Scheme, Tillage equipment, Seeding and Planting equipment (Tractor/Bullock drawn)	4
4.	Hand tools/component	3

- **Which of the agricultural equipment require CMVR certification?**

The agricultural equipment requiring CMVR certification includes agricultural tractors, power tillers and combine harvesters as of now (i.e. June, 2003).

- **What are the pre-requisites for getting the road-worthiness certificates as per CMVR?**

The pre-requisites for getting the road worthiness certificate as per CMVR require submission of the machine/equipment for verification of requirements to CMVR (1989 as amended from time to time) at Central Farm Machinery Training & Testing Institute, Tractor Nagar, Budni (MP)-466445).

- **What is the system of the evaluation of the Test Reports and recommending them for institutional financing?**

In order to streamline the system of evaluation of Test Reports on tractors and power tillers, the criteria of Minimum Performance Standards have been formulated in the Ministry. The Test Reports are evaluated by a Committee and recommendations made. In the case of another major equipment i.e. self-propelled harvesters a similar process has been initiated to formulate Minimum Performance Standards. Subsequently, this process would also be taken up for other power operated major agricultural equipment.

- **Which are the various Indian Standards applicable for testing of different types of equipment and their source of availability?**

The various Indian Standards applicable for testing of different types of equipment have been published by the Bureau of Indian Standards. The same are available at Bureau of Indian Standards Manak Bhawan, 9 Bhadur Shah Zafar Marg, New Delhi-110002 and at their regional offices in the country at Kolkata, Chandigarh, Chennai, Mumbai. The

Indian Standards applicable for testing of different types of Indian Standards are as under:-

A Agricultural Tractors		
Sl.No.	Title of Indian Standards	Reference
1.	2.	3.
A Agricultural Tractors		
1.	Test Code for Agricultural Tractors	IS: 5994-1998 Part-I & Part-II
2.	Guidelines for field performance evaluations of Agricultural Tractors	IS: 9253-2001
3.	Dimensions for three point linkage of agricultural wheeled tractors	IS: 4468-1977
4.	Power take-off shaft of agricultural tractors	IS: 4931-1997
5.	Symbols for operator's controls on agricultural Tractors (Part I&II)	IS: 6283-1998
6.	Code of practice for preventive maintenance of agricultural tractors	IS: 6840-1972
7.	Code of practice for installation of agricultural wheeled tractors	IS: 6847-1972
8.	Guidelines for presentation of operator manuals and technical publications for agricultural tractors and machinery	IS: 8132-1999
9.	Guidelines for location and operation of operator controls on agricultural tractors and machinery	IS: 8133-1983
10.	Agricultural Tractors- Recommendations on Selected Performance Characteristics club with previous block	IS: 12207-1999
11.	Agricultural Tractors-operator's seat- Technical Requirements	IS: 12343-1918
12.	Agricultural Tractors and machinery- Lighting devices for travel on public roads	IS: 14683-1999
13.	Glossary of terms relating to agricultural tractors and power tillers	IS: 9939-1981
14.	Agricultural Tractors-Maximum actuating forces required to operate controls	IS: 10703
15.	Technical requirements of agricultural tractors for wetland cultivation	IS: 11082-1984
16.	Guidelines for declaration of power and specific fuel consumption, labeling of tractors	IS: 10273-1987
B Power Tillers		
	Test Code for Power Tillers	IS: 9935-1988

	Power Tillers-Selected Performance characteristics-Recommendations	IS: 13539:1993
C Self Propelled Combine Harvesters		
1.	Combine Harvester-Thresher - Test Code	IS: 8122(Pt-1)-1994
2.	Combine Harvester-Thresher - Test Code	IS: 8122(Pt-2)-2000
D Threshers		
		IS: 6284-1985(Re-affirmed in 1999)
	Power Threshers-safety requirements	IS: 9020- 2002
E	M.B Plough	IS: 6288-1990
F	Crop reaper (self propelled/tractor mounted):	
	Test code for Cereal harvesting machines	IS: 11467-1995(Re-affirmed in 2001)
	Gaurds for harvesting machines	IS: 6024-1983(Re-affirmed in 1999)
	Knife sections for harvesting machines	IS: 6025-1982(Re-affirmed in 1999)
	Knife back for harvesting machines	IS: 10378-1982(Re-affirmed in 2001)
G	Tractor Trailers	
	Guidelines for field performance evaluation of Agricultural Tractors	IS: 9253-2001
	Agricultural Tractors-Braking Performance- Method of Test	IS: 12061-1994(Re-affirmed in 1998)
H	Bullock Drawn Plough	
		IS: 2192-1998
		IS: 6288-1971
I	Bullock Drawn Ridger	IS: 2565(Re-affirmed in 1995)
J	Seed cum Fertilizer drill	
	Test code	IS: 6316-1993
	Specifications	IS: 6813-1993
K	Tractor operated Blade Terraces-specifications	IS: 9813-2002
L	Equipment-Fogging Machines-specifications	IS:14855-2001 (Part-II)

- Which are the agricultural equipment on which the subsidy is admissible and the rate of subsidy applicable to them as on date?

The following agricultural equipments are available on subsidy under Central Sector

Plan Schemes. The subsidy is available to the farmers @ 25% of the cost of equipment subject to certain ceiling limits.

Sl.No.	Name of Implements/Machines
1.	Tractor
2.	Power Tiller
3.	Power Drawn implements
4.	Power Threshers (all types)
5.	Sprinklers
6.	Drip Irrigation
7.	Animal drawn implements
8.	Manually operated implements/ tools including Horticultural Tools
9.	Plant Protection Equipment
	i) Manual
	ii) Power operated
	iii) Tractor mounted
10.	Self Propelled reaper, paddy transplanter and other similar self propelled machines
11.	Specialised power driven equipment such as Sugarcane cutter planter, potato planter, rotavator, straw reaper, strip till drill, tractor drawn reaper etc.

- **Name the Plan Schemes under which the subsidy is available to the farmers for the purchase of agricultural implement and machines.**

Macro-Management of Agriculture – Complementation/ Supplementation of State's Efforts Through Work Plan: The States have been given flexibility to develop & pursue activities on the basis of their regional priorities. The States are free to include new interventions in their Work Plans provided these are not covered under any other scheme of the Central Government or are not a part of any ongoing State Scheme. The expenditure on any new initiative should not be more than 10% of the total allocation to the State (for the year) under Macro-Management Scheme. As per approved pattern, there would be a cap on subsidy to the farmers incorporated in the Work Plans. Subsidy per farmer or per activity should not exceed 25% of the cost or the present subsidy level approved under 27 identified schemes, whichever is lower. Besides, the subsidy is also available on identified agricultural implements under the schemes of oil seeds production programme National Pulses Development Project, Technology Mission on Cotton, Technology Mission on Horticulture for North Eastern Region.

- **What are the steps taken for modernization of agriculture?**

In order to modernize the agricultural practices in vogue, the following actions have been taken by the Government: -

1. Identification of prototypes developed under ICAR Research Schemes, State

Agricultural Universities, State Governments manufacturers and others.

2. Demonstration of newly developed equipment.
3. Human Resource Development, engaged in machinery use, repair and maintenance etc.
4. Financial assistance in the form of subsidy to the farmers for the purchase of agricultural equipment.
5. Provision of institutional credit to the farmers for the purchase of agricultural implements & machines.
6. Fiscal measure in the form of reduction/exemption of agricultural implements & machines from levy of Central Excise Duty.

- **What are the identified newly developed equipments?**

A few newly developed equipment identified are: -

Zero till seed drill, strip till drill, raised bed planter, sugarcane cutter planter, rice planter, tractor/power tiller operated rotavator, sunflower thresher, aero blast sprayer, power weeder etc.

- **Is there any Regulatory Act to look into the safety aspects of the agricultural machinery? If yes, which are the machines covered under the Act and its modus operandi in case of accidents?**

To take care of the operator's safety requirements on agricultural machinery in use, the Dangerous Machines (Regulation) Act, 1983 has been enacted. Presently, only Power Thresher has been brought under the ambit of the Act. Enforcement of the Act rest with the State Governments. The monitoring of the Act is done by the Department of Agriculture & Cooperation, Ministry of Agriculture, Government of India.

- **Is there any proposal to bring more machines under the ambit of the Dangerous Machines Regulatory Act, 1983?**

The following equipment are planned to be brought under the ambit of this Act-

1. Power operated chaff cutter.

2. Power operated Sugarcane crushers .

[\[About Us\]](#) [\[Programmes & Schemes\]](#) [\[Farm Produce Prices\]](#) [\[Statistics\]](#) [\[Weather\]](#) [\[Documents\]](#)
[\[Stop Press\]](#) [\[Announcements\]](#) [\[Feedback\]](#) [\[Help Desk\]](#)

Last Updated On - 01 April, 2005

