

Checklist for Agricultural Engineering Sector

Actors on supply chain	Check list - what they have to do (related to capacity needs)	Check list – what enabling environment they need to be able to do business	Check list – enabling environment that government can provide (and this is connected to another table below)
International manufactures	<ul style="list-style-type: none"> • Quality assurance, including warranty on exported machinery • Reliable supply of spare parts 	<ul style="list-style-type: none"> • Large market scale • Reliable dealerships 	<ul style="list-style-type: none"> • Policy & strategy on agricultural mechanization (MOA) • Test & evaluation, safety inspection and certification of quality of machinery (MOA) • Tax incentives such as reduced import tariffs for machinery and spare parts (MOT)
Importing agents	<ul style="list-style-type: none"> • Adequate stocks for immediate delivery • Local assembling 	<ul style="list-style-type: none"> • Quick issue of L/C • Short entry 	<ul style="list-style-type: none"> • Tax incentives such as reduced import tariffs for machinery and spare parts (MOT) • Short entry (MOT)
Domestic manufactures	<ul style="list-style-type: none"> • Ability to produce machineries (engineering standard) at reasonable cost • Quality control and warranty of products 	<ul style="list-style-type: none"> • Reduced import duties for raw materials, • Engineering standard • Loans • delivery network 	<ul style="list-style-type: none"> • Qualified engineers (Universities) • Reduced import duties for raw materials (MOT) • Engineering standard (MOI) • SME promotion including loans (MOC, MOI)
Dealers	<ul style="list-style-type: none"> • Repair and maintenance of imported machines • Stocks of standard spare parts • Operator training • In-house credit 	<ul style="list-style-type: none"> • Two step loans, Soft loans • Large scale market 	<ul style="list-style-type: none"> • Soft loans (MOI, MOF) • Mechanization promotion (MOA)
Local workshops for maintenance	<ul style="list-style-type: none"> • Adequate skills of maintenance (Periodical and preventive) • Availability of spare parts for timely 	<ul style="list-style-type: none"> • Market (Sufficient number of customers who can afford to services in a certain area) 	<ul style="list-style-type: none"> • Vocational training (MOI) •

	<ul style="list-style-type: none"> delivery Minimum business skills 	<ul style="list-style-type: none"> Favourable cost-benefit framework for sustainable operation 	
Financiers	<ul style="list-style-type: none"> Low interest credit, Long repayment period credit 	<ul style="list-style-type: none"> Soft loans 	<ul style="list-style-type: none"> Two step loans (MOI, MOF) Economic infrastructure(MOF)
Custom hiring providers	<ul style="list-style-type: none"> Information network, Access by farmers Reasonable cost High rate of operation Business skills, 	<ul style="list-style-type: none"> Loans Adequate number of customers Favourable cost-benefit framework for sustainable operation Less seasonal fluctuations(double cropping) 	<ul style="list-style-type: none"> Loans (MOA, MOF) Privatized hiring service (MOA)
Milling service providers	<ul style="list-style-type: none"> Quality milling Reasonable cost Accessible location (proximity to rice producing area) by farmers High rate of operation 	<ul style="list-style-type: none"> Less seasonal fluctuations(double cropping) Assured market access (distance from markets, road network) High quality rice market 	<ul style="list-style-type: none"> Rice quality standard (MOA, MOC) Privatized milling service (MOA, MOC) Rice marketing promotion (MOC)
Machine operators	<ul style="list-style-type: none"> Adequate technical ability to operate and maintain machinery 	<ul style="list-style-type: none"> Market (Sufficient number of customers who can afford to services in a certain area) 	<ul style="list-style-type: none"> Training on operation and maintenance (MOA)
Small scale farmers	<ul style="list-style-type: none"> Financial capacity to purchase, operate and maintain machineries Technical skills to operate and maintain machineries Minimum skill of business management 	<ul style="list-style-type: none"> Proximity, quality and affordability of machinery services Improved cost-benefit of farming through mechanization Group use of machinery 	<ul style="list-style-type: none"> Promotion programme for machinery group use (MOA) Loans (MOA, MOF) Purchase subsidy (MOA) Training on business management Extension services (MOA)
Animal draught power users	<ul style="list-style-type: none"> Feed supply, 	<ul style="list-style-type: none"> Veterinary service, Skilled trainers, Equipment 	<ul style="list-style-type: none"> Qualified veterinarians (MOA)

MOA: Ministry of Agriculture, MOC: Ministry of Commerce, MOF: Ministry of Finance, MOT: Ministry of Trade

What are the roles of the government sector in providing enabling environment as above?

Actors on supply chain	Check list - what they have to do (related to capacity needs)		
Ministry of Trade (MOT)	Import tariff exemption for agricultural machinery, spare parts and raw materials, Tax reduction on importers, Distribution network for spare parts		
Ministry of Industry (MOI)	Engineering standard, Quality control, Training on technicians, SME promotion on agricultural machinery,		
Ministry of Commerce (MOC)	Rice quality standard, Rice miller association, SME promotion on agricultural machinery		
Ministry of Agriculture (MOA)	Policy & strategy on agricultural mechanization, Agricultural mechanization promotion act, Statistical data on agricultural machinery, Agricultural credit, Farmer organization, Agricultural input subsidies, Extension services, Operator training		
Agricultural machinery R&D institute	Safety Inspection, Test & evaluation, Certification, Training for local artisans		
Universities	Qualified agricultural engineers		

Policy Environment:

1. Do agricultural policy instruments influence the use of farm power and equipment?
2. Do industrial policy instruments influence the local manufacturer of farm machinery and equipment?
3. Do consumer policy influence the use of farm machinery and equipment?

4. Do trade policy instruments influence the importance of farm machinery and equipment?
5. Do fiscal policy instruments influence the manufacturer or use of farm machinery and equipment?
6. Is there a mechanization strategy? Is it well implemented? If not, what are causes?

Institutions

1. Are there adequate credit facilities for local manufacturers, importers, distributors and farmers?
2. Is there adequate training for manufacturers, distributors, dealers, and farmers regarding production, operation and maintenance of farm machinery and equipment?
3. Do extension services provide adequate support for manufacturing, operating and maintaining farm tools, machinery and equipment?
4. Is there adequate training and support for the use of draught animals?
5. Do publicly funded Reserch and Development projects in agricultural mechanization focus on priority needs?
6. Do manufacturers, importer and farmers have access to sufficient market information to make informed choices?
7. Is there adequate protection for consumer from poor or illegal business practices?

Infrastructure

1. Does the existing level of agricultural mechanization restrict agricultural development such as untimely operation?
2. Does the existing level of agricultural mechanization restrict the performance of household tasks?
3. Does the agricultural machinery market have enough scale to promote mechanization?
4. Does the agricultural infrastructure restrict the level of agricultural mechanization?
5. Does the existing farming system suitable for mechanization?
6. Does agricultural mechanization have any adverse impacts?

Human resource capacity

1. Is there adequate number of qualified engineers for research and development of agricultural machinery and equipment?
2. Is there adequate number of technicians for production, repair and maintenance of agricultural machinery and equipment?
3. Is there adequate number of skilled operators to use agricultural machinery?

4. Is there adequate number of extension workers to demonstrate and train farmers to use agricultural machinery and equipment?
5. Are there agricultural businessmen to provide custom hiring services?
6. Is there adequate number of veterinarians and breeders to maintain drought animals?

Provision/Support

1. Does the local manufacturing industry meet the needs of the farming community?
2. Do the imports of farm machinery and equipment meet the needs of the farming community?
3. Do the distribution, repair and maintenance services hinder the efficient use of farm machinery and equipment?
4. Does the government promote mechanization projects?
5. Does the government provide performance test and safety inspection of machinery and equipment?
6. Does the government reduce import tariff and tax for agricultural machinery and spare parts?
7. Does government provide subsidies for purchasing agricultural machinery to farmers?
8. Do farmers have access to adequate credit from finance institutes?

Information/Knowledge

1. Are there statistical data on agricultural machinery?
2. Is there certification of quality agricultural machinery and equipment?
3. Is there adequate number and size of exhibitions and demonstrations?
4. Do farmers have sufficient market information to make informed choices?
5. Is there adequate protection for consumers from poor or illegal business partners?