

Custom Hiring of Agricultural Machinery



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CSAM





Background; Statistics

- Land area - 60,600 km²
- Population - 20.3 million
- Arable area - 30 % of the total land area
- **Avg land holding size - 1.0 ha**
- Main crops - Paddy, Maize, Vegetable, Fruits, Spices, Grain Legumes, oil crops and root crops
- Plantation crops - Tea, Coconut, Rubber, Sugarcane
- Families engaged in Agriculture - 1.8 mill (49%)
- Agricultural contribution to GDP – 7.2 %
- Paddy cultivated area - 34 % of the arable land
- Average yield (PADDY) - 4.5 MT/ha

Background; Machinery Supply Chain

- Very few machinery are locally produced like water pumps, sprayers, seeders and hand tools
- Majority is imported
- No tax on imported agricultural machinery
- Supply of machinery is not regulated
- Inferior quality machinery inflows to the country
- Local production also not supported by unfavorable trade policy and small local market

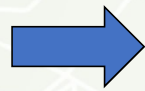
Background; Level of Mechanization

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- Paddy Cultivation - Highly mechanized (Though not properly)
 - Vegetable cultivation - Low level
 - Other field crops – Moderately mechanized
 - Fruit sector - Low level
 - Plantation crops - Low level
 - Spices - Very low
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Challenges in Agricultural Practices

- Labour shortage in peak demanding period
- Cultivated area increased after the war and as a results of irrigation projects
- Timely cultivation is challenged with climatic changes and labour shortages
- Consumer is more quality concerned
- With the limited resources Productivity improvement is identified as a priority

Solution



Mechanization



CHALLENGES IN AGRICULTURAL MECHANIZATION

- Poor purchasing power of individuals
- Owning is not economical as the average land holding is small
- Seasonal usage of some machinery
- Lack of infrastructural facilities
- Many machines are single purpose and having considerably un-matching capacity
- New technologies, while available are out of reach of small holders, who cannot afford to purchase of these items of machinery.
- Lack of after sales services in the close proximity

Solution  CHC

DIFFERENT MODELS OF CUSTOM HIRING

1. Individual farmer lending – Current common practice for tractors and combines
2. Farmers group purchased machineries (i.e: processing plants, dryers)
3. Co-operatives managed
4. Traders implemented
5. Individual entrepreneur operated
6. NGO supported
7. Government owned CHC
8. Govt. supported centers (PPP) (Subsidy on machinery/interest)

Background; Previous Experience in CHC

- **Government owned tractor hiring** centers established in late 60's
- Objective was to introduce tractors
- Closed down all the centers in 80's
- As a major break through, tractors (both four wheel and power tillers) have been introduced to the country
- Farm machinery research and training programs initiated



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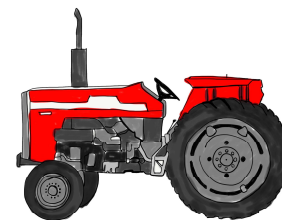
Present status of Individual Custom Hiring

Common hiring machines

- Combine harvester
- Combine thresher
- Four wheel tractor
- Sprayer
- Two wheel tractor
- Reaper
- Water pump

Hiring rates

Operation	Hiring rate (\$)
Ploughing	120 – 140 /ha
Reaping	95 – 115 /ha
Threshing	25 – 30 /h
Combine harvesting	140-160/ha



Machinery for CHC



- Seed Processing Machinery
- Tractors – land preparation
- Laser Leveler
- Bund/Bed Formers
- Transplanters/Direct
- Water pumps
- Sprayers/Drones
- Harvesters
- Threshers
- Dryers
- Trailers
- Lories
- Trucks

Advantages of CHC

- Access to small and marginal farmers
- Timely availability of farm implements
- Availability of appropriate machines at competitive hiring charges
- Promotes increase in crop productivity
- Facilitates crop residue recycling
- Prevents burning of residues
- Reduction in cost of cultivation
 - Reduce drudgery
 - Expand or intensify production.
 - Reduce production, post-harvest and marketing costs
 - Increase smallholder incomes

Challenges on CHC

- High competition (Combine Harvesters: more than 15,000)
- Hiring rates reduced from Rs. 15,000 (\$ 116) per ha to now about Rs. 7500 (\$ 58) per ha.
- Introduction of new technology (Track type combines are preferred over wheel type)
- Low profit margin (high labour wages, high fuel cost and increased R & M cost)
- Involvement of a middle man (Brokers)
- Climatic problems (Flood and drought)
- Political interreference

Government Support

- Farm machinery are supplied without import duty
- Provide capacity building facility, certifying trained operators
- Provide credit facility with subsidized interest rates and long repayment period
- Quality Assured (Certified) Machinery should be provided to CHC.
- Government commitment with a clear sustainable agricultural mechanization strategy (SAMS).
- A suitable regulatory framework and support policies to attract private sector investment for providing custom services.

Recommendations

- Establish Government supported private machinery hiring centers
- Support those centers by providing subsidy or providing soft loans
- Train machinery operators free of charge
- Decide and implement scientific hiring rates with reasonable profit margins
- Expose machinery owners to the latest technology
- Introduce effective regulatory system by safeguarding all relevant stake holders.
- Organize Association for machinery hiring entrepreneurs
- Introduce mechanism to approach farmer directly without the middle man
- Train operators in government institutes.
- Provide concessionary loans
- Support to select appropriate machinery

CH App like Uber

