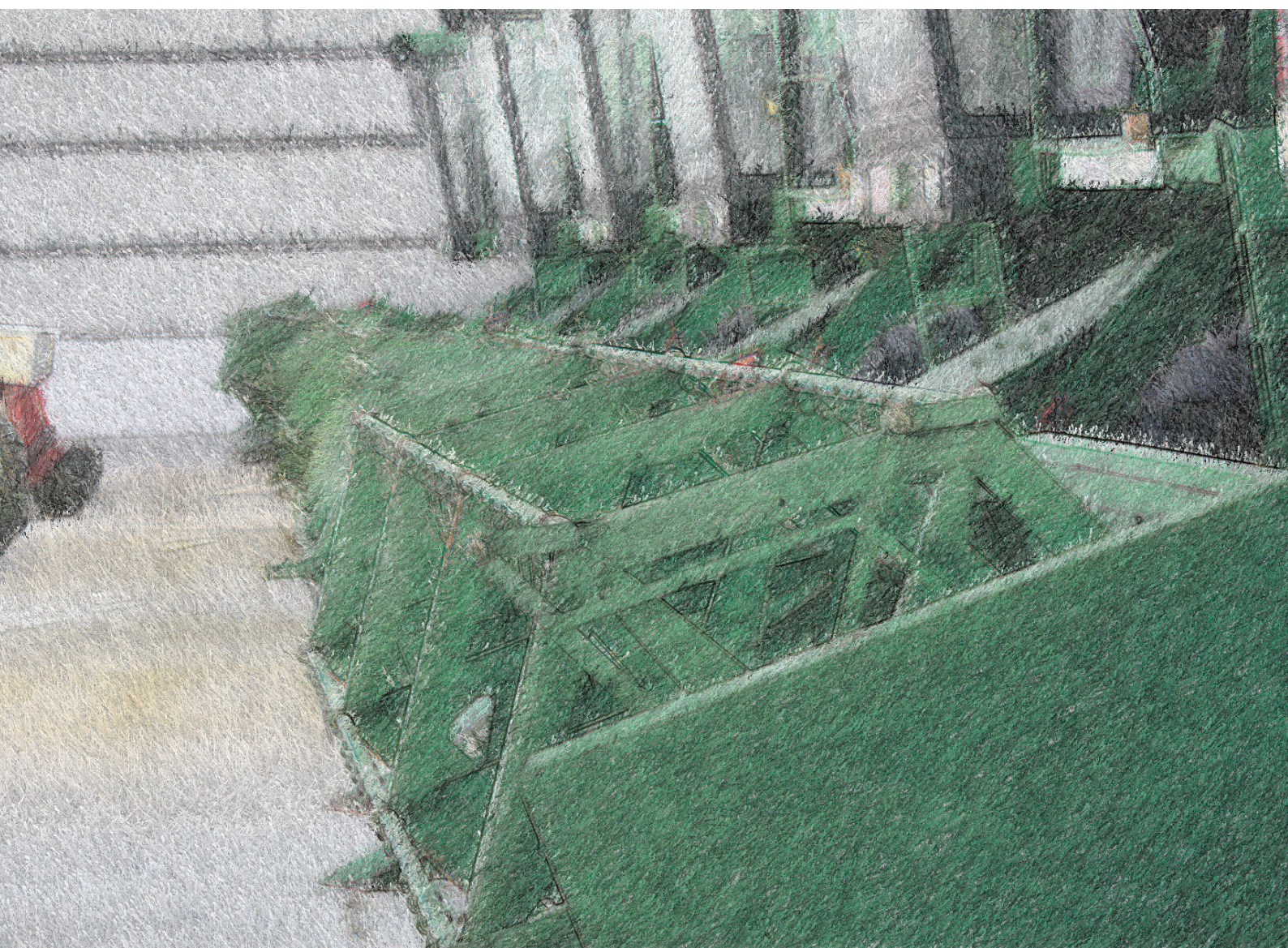


POLICY BRIEF

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Policy Priorities for Promoting Custom Hiring of Agricultural Machinery



Policy Brief: Policy Priorities for Promoting Custom Hiring of Agricultural Machinery

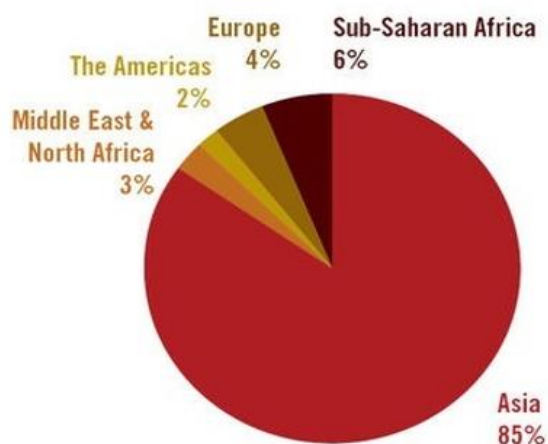
Introduction

Custom hiring services for agricultural machinery enable farmers to rent equipment for a defined period of time, only paying for the services related to the renting activity. Custom hiring is thus a useful approach to promote sustainable agricultural mechanization by addressing the lack of financial resources and necessary technical skills to purchase and operate required machinery. Custom Hiring can also address several of the constraints to the overall development of the agricultural sector in the Asia Pacific region, including labour scarcity, extreme and harsh climatic events, and availability of shorter time windows for completing critical agricultural activities. By contributing towards sustainable agricultural and rural development, Custom Hiring can support efforts towards implementing the 2030 Agenda for Sustainable Development adopted by the global community at the United Nations General Assembly in September 2015, including Sustainable Development Goal 1 (No Poverty) and 2 (Zero Hunger).

According to 2016 data, out of the 570 million farms in the world, more than 500 million are family farms and more than 475 million farms are smaller than 2 ha. The coverage under family farms and small farms is particularly large in South Asia, East Asia and the Pacific, where in low- and lower-middle-income countries about 70–80% of farms are smaller than 2 ha, operating about 30–40% of the land¹. In this context, small farm size and seasonality have often been a major limitation to the use and ownership of agricultural machines². Custom hiring services can play an important role in promoting the use of agricultural machinery in many countries where small farms are dominant, where the economics of machine ownership in large scale crop production is still uncertain and where timeliness of operations such as land preparation and harvesting operations is critical due to factors such as climate change.

While many custom hiring programs initiated by governments in the 1980s were not fully profitable, the programs stimulated demand for

Global distribution of farms below 10 hectares



Source: FAO (2016), *The Number, Size, and Distribution of Farms, Smallholder Farms, and Family Farms Worldwide*.

¹Sarah K. Lowder, Jakob Skoet, Terri Raney, *The Number, Size, and Distribution of Farms, Smallholder Farms, and Family Farms Worldwide* (World Development, Volume 87, 2016).

²Nazaire Housson, Collins Asante-Addo, Xinshen Diao, Shashidara Kolavalli, *Big tractors but small farms: Tractor hiring services as a farmer owner's response to an under-developed agricultural machinery market* (Ghana Strategy Support Program, IFPRI, Working Paper 39, 2015).

mechanization services that the private sector increasingly supplied³ and laid the foundation for recent successful models of custom hiring. This policy brief focuses on highlighting the importance of establishing an enabling environment for custom hiring through the implementation of effective and targeted policies. It draws upon the existing knowledge resources of the Centre for Sustainable Agricultural Mechanization (CSAM) as well as previous work on custom hiring, including the organization of a Regional Forum on Sustainable Agricultural Mechanization in Asia and the Pacific in September 2014 in Serpong, Indonesia, which focused on the importance of facilitating an enabling environment for custom hiring of agricultural machinery.

Regional Panorama

Given the predominance of smallholder farming systems in the Asia-Pacific region, custom hiring services of agricultural machinery have an existing market. In several countries, agricultural machinery hiring services have transformed machine use in farming into an almost infinitely divisible input through which even small-scale farmers cultivating as little as 0.1 ha or producing only 100 kg of grain can mechanize their operations. In the province of Punjab in India, while only 40 percent of farmers own tractors, all farmers use a tractor on their fields⁴. The situation is similar in Thailand, where contracting of large farm machinery through custom hiring is a reliable and appropriate service for most farmers to the point that more than 99 percent of combine harvesters are operated on custom-hire service basis⁵.

Another country with a successful model for custom hiring is China, which began to provide these services in 1979 after the introduction of the household contract responsibility system. The system laid the foundation for custom hiring of farm machinery and custom hiring entities began to flourish. Nowadays, many Chinese rural households purchase farm machines not only to use on their own fields, but also for custom hiring purposes: about 42 million farmers are farm machine owners, which represents 15.8 percent of the total rural households. The total operating income of farm machinery owning households has reached RMB 430 billion. In 2013, the number of machine service providing households, meaning those that make over 60 percent of their total income from custom hiring services, reached 5.2 million, which represents 12.3 percent of the total number of farm machinery owning households⁶.

In spite of certain unfavorable factors, such as high tractor prices, capital constraints, widespread smallholdings, and lack of well-trained mechanics, tractor-hiring services have also developed rapidly in Thailand, Malaysia and Pakistan⁷. In these countries, the majority of the

³ Idem.

⁴ Singh, S., H. S. Kingra and Sangeet, *Custom Hiring Services of Farm Machinery in Punjab: Impact and Policies* (Indian Research Journal of Extension Education 13 (2). 2013).

⁵ ESCAP (CAPSA – CSAM), *Training Manual: Creating an Enabling Environment for Custom Hiring of Agricultural Machinery in Myanmar's Dry Zone* (An Integrated Rural Economic and Social Development Programme for Livelihoods Improvement in the Dry Zone of Myanmar, 2017)

⁶ Idem.

⁷ Nazaire Housson, Collins Asante-Addo, Xinshen Diao, Shashidara Kolavalli, *Big tractors but small farms: Tractor hiring services as a farmer owner's response to an under-developed agricultural machinery market* (Ghana Strategy Support Program, IFPRI, Working Paper 39, 2015).

tractor service providers were non-farm contractors and farmers with landholdings about twice that of tractor-hiring farmers⁸. Moreover, medium-scale farmers in India and Pakistan hire out their tractors for about 700 tractor hours per year, achieving more than 50 percent of the annual economic utilization rates of their tractors⁹. It is important to note that providing tractor hire services can be an effective way for tractor-owning farmers to spread fixed costs over more land, reduce per unit costs, and increase cash flow.

While custom hiring has the potential to change the regional farm mechanization landscape, it still faces many constraints, such as high initial cost of equipment, lack of operational knowledge, lack of capacities for the maintenance and repair of equipment, lack of space for shelter, and suboptimal asset capacity utilization on account of crop specific requirements. With increased participation of stakeholders across the agricultural supply chain, the concept of custom hiring can be successful, however, innovation in the custom hiring model and higher participation of different public and private institutions is critical.

Recommendations

Custom hiring has the potential to be one of the most effective strategies to introduce high quality and efficient farm mechanization to the small farming structures that are widespread in many countries in the Asia-Pacific region. The custom hiring model enables new machines to be used at their maximum capacity and enables farmers to gain access to technology they would otherwise not be able to afford. Custom hiring can also significantly facilitate diversification in agriculture, specifically from wheat and paddy to other crops¹⁰. In addition, custom hiring through private entrepreneurs or co-operatives and non-farm contractors can help to increase the annual use of their equipment thereby helping to make them viable.

For the above to happen, an enabling environment is critical: governments must commit to creating the conditions and incentives for farmers with more land to buy and use machinery that could be used to offer custom hiring services to those that cannot buy such machinery. For creating an enabling environment, it is recommended for governments to focus on the following four areas:

Legal: A suitable regulatory framework and supporting policies to attract private sector investment for providing custom services are vital. Measures are required to make end users aware of custom-hiring tariffs, prior to the new cropping season. Guidelines for

⁸ FAO (Food and Agriculture Organization of the United Nations), *Farm Equipment Supply Chains. Guidelines for Policy Makers and Service Providers: Experiences from Kenya, Pakistan and Brazil* (Agriculture and Food Engineering Technical Report No. 7, 2009).

⁸ Nazaire Housson, Collins Asante-Addo, Xinshen Diao, Shashidara Kolavalli, *Big tractors but small farms: Tractor hiring services as a farmer owner's response to an under-developed agricultural machinery market* (Ghana Strategy Support Program, IFPRI, Working Paper 39, 2015).

⁹ Nazaire Housson, Collins Asante-Addo, Xinshen Diao, Shashidara Kolavalli, *Big tractors but small farms: Tractor hiring services as a farmer owner's response to an under-developed agricultural machinery market* (Ghana Strategy Support Program, IFPRI, Working Paper 39, 2015).

¹⁰ Ruhul Nissa, Mohd Zubair, Iffat Ghani, Nasreen Jahan, *Custom Hiring Centre: An Emerging Trend-Benefits, Constraints and Way Forward with Reference to Nicra Village in Wakhawan District Pulwama* (IMPACT: International Journal of Research in Applied, Natural and Social Sciences, Vol. 5, 2007).

maximum tariffs should be prepared by relevant government authorities to protect the interests of all stakeholders, at least until there is a well-functioning market, which is able to negotiate its equilibrium rates. Technical requirements and guidelines for agricultural machinery tailored to local field conditions, based on standardized evaluations, are also needed to avoid problems during use under field and crop conditions.

Financial: Mechanisms and incentives to facilitate the procurement of machinery and equipment by smallholders should be implemented and a favorable tax, duty and/or excise regime should be put in place. In this context, specific financial instruments should be devised to bring small farmers into the circle of beneficiaries of financial assistance. Consideration of whether farmers in real need of access to loans are being excluded due to their ineligibility according to existing criteria is needed. Moreover, processing of loans should be made faster and easier to navigate, since these are key for many customers when selecting an appropriate source of finance.

Supporting Policies: Measures should be undertaken to provide relevant stakeholders with concrete and specific information on the benefits of custom hiring to stimulate the diffusion of this practice. Besides, appropriate communication along the value chain including dissemination of information on the performance of various machines for corresponding agricultural operations should be promoted, appropriate training modules designed, and frequent training sessions organized to train the personnel involved in machine operations and those who are involved in repair and maintenance services. Training can also serve as a tool to increase awareness amongst various stakeholders.

Infrastructure: Infrastructure in the form of farm roads, electricity, repair and maintenance facilities, service centres and training schools should be strengthened in the region to support custom-hiring services. Increased investment in roads, rural electrification, rural microfinance and banking can provide the necessary impetus to custom hiring, as well as to agricultural mechanization in general.

Table 1: Key Actors in The Development of Custom Hiring Services

Who?	Public sector	Private Sector	Farmers
Why?	Agricultural sector modernization; implement controls and regulations to check the spread of weeds, pests	Business expansion, diversification, profit and Corporate Social Responsibility	Profit, productivity; from subsistence to profitable systems; perform role as custodian and enabler of a sustainable farming environment

	and diseases and to discourage service providers from supplying poor quality machines that can cause soil damage and crop losses		
How?	Legal and financial, support; development of adequate infrastructure; notifying rules and regulations on machinery movement and operation	Lending machinery and providing custom hiring services; linking with non-farm activities to maximize profit on their machinery	Utilize custom hiring services to maximize outputs from agricultural activities.

In addition to the above-mentioned measures, especially in countries where the access to internet is more widespread, the introduction of new connectivity technologies, and the usage of internet to connect farms can assist in the provision of several aspects related to custom hiring, including monitoring of fleet operations, monitoring of costs, information sharing/facilitation, preventive repair and maintenance of machinery, and price tracking. The development of the “sharing economy” and peer-to-peer rental models appear to be the future models of consumption. The market for agricultural machinery should also adapt to this prospect and integrate existing models to make activities such as custom hiring a propellant for the modernization of agricultural activities in the Asia-Pacific region.

In conclusion, governments need to act as catalysts for incentives to enable farmers to embrace new economic models such as custom hiring. In this context, cross-sector partnership with the private sector, financial institutions and farmers’ associations should be pursued to highlight the multiple economic benefits of custom hiring and the potential contribution towards modernization of agricultural operations and improved rural livelihoods.

