

Farmer Equipment Service Center Model for Rice Intensification Senegal Case Study, 2015

The Context

Timely completion of field preparation and grain harvesting is a major constraint in rice-growing systems across Sub-Saharan Africa. Inadequate soil preparation can delay crop establishment, increase weed and water stress (due to uneven distribution of irrigation water) and limit the accessibility of plots for later agronomic activities. A lack of timely harvesting capacity can significantly reduce grain quantity (to seed-shattering and birds) and quality (because of moisture and toxin levels).

Appropriate equipment for preparation and harvesting can greatly improve yields, crop quality and farmer incomes. In some areas (such as the Senegal river valley), the timely provision of such services can also open the way to a second cropping season, thus potentially doubling production. Furthermore, the establishment of profitable mechanization services can help create rewarding jobs in rural settings.

However, buying appropriate machines can require significant capital investment. The up-front costs often exceed the financial capacity of producer organizations and farmer aggregators. The Syngenta Foundation for Sustainable Agriculture (SFSA) has therefore developed a model for profitable provision of mechanized services for soil preparation, harvest and grain storage. SFSA and partners have piloted this model in Senegal and Mali since 2014. It is now ready for replication in rice production systems throughout Sub-Saharan Africa.

The Concept

The basic idea behind a center for mechanized services (CEMA) is to aggregate demand and supply. This enables profitable provision of services that require larger machinery and thus considerable up-front investment. These include tractors and combine harvesters as well as, potentially, grain processing and storage facilities (depending on the setting). The center itself is owned by a farmer cooperative, an aggregator or any other third-party organization closely related to a local farming community. However, it is operationally independent and keeps to a clear business plan and service catalogue to achieve a positive return on capital investment within 2-3 years. Figure 1 provides an overview of the services offered by the pilot CEMA in Senegal and their relative contribution to overall revenue.

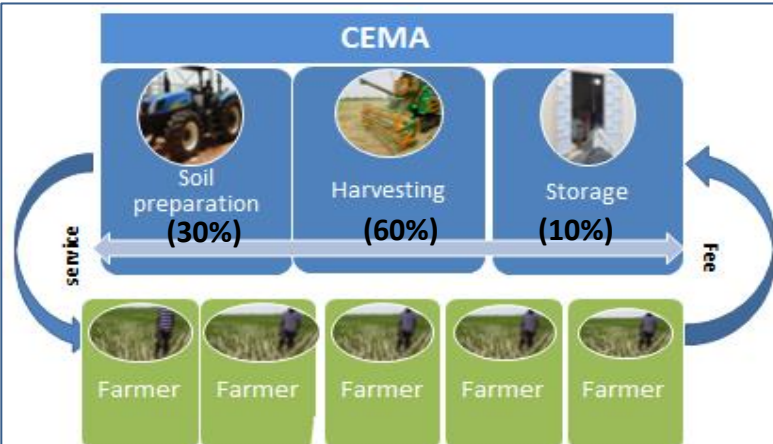


Figure 1: Business overview of the Service Center in Pont Gendarmes, Senegal

An equipment service center is a centralized facility that provides a set of services to local farmers. These include soil preparation, harvesting and storage as well as agronomic know-how. The numbers in brackets represent the relative contribution of each service category to the overall revenue.

The Financial Model

The following service propositions are incorporated in the basic concept of a CEMA:

1. Soil preparation: Offsetting, plowing, levelling, ridging
2. Harvest and threshing
3. Grain processing and/or storage



Pricing models have been established for profitability, based on equipment and labor costs. Indicative service charges are 27,500 CFA/ha for soil preparation, an average of 180,000 CFA/ha for harvesting (actual fees are paid in produce, and represent 18% of yield) and 2,000 CFA/t for grain storage. Assuming a capacity of 300-500 ha per season, a CEMA can achieve a positive return on investment in equipment (tractors, combine harvesters and store house, including labor costs) within 2-3 years. The pilot CEMA in Senegal has demonstrated great demand for the services offered. Initial figures from the first year of operation indicate that it is well on track to achieve the financial targets.

Learnings

Despite the relative novelty of this approach and thus limited operational experience, several key lessons have already emerged. These will help further to improve the service model. They include:

1. Financial security: Guarantee funds can greatly facilitate access to credit for capital investment in frequently expensive equipment (tractors, combine harvesters, etc.).
2. Organization and management: The establishment of an operationally independent, profit-oriented business unit with separate management and a clear business concept can help achieve profitability targets and thus the economic viability of service centers.
3. Supervision: Despite the benefits of operational independence, it is also important to establish a formal supervisory body to provide guidance, management and assure alignment with farmer communities. This helps achieve local acceptance and integration of service centers.

Outlook

After successful pilots in Senegal and Mali, the Syngenta Foundation aims to replicate this approach both in Senegal/Mali and elsewhere in sub-Saharan Africa. For this, we are seeking appropriate partners.

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