

Unemployment of young people in rural areas: Strategic approaches of the Centers for Mechanized Services (CEMA) Case study in Senegal and Mali - 2018

Context

In Sub-Saharan Africa, the issue of youth unemployment especially those in rural areas, remains a key concern for national governments. From 2010 to 2025, the working population in this area of the world is expected to grow by 17 million, 11 million of whom will come from a rural environment. These cohorts of young employable people requiring integration in working life are both a challenge and a lever for economic growth in this region.

As in the majority of Sub-Saharan African countries, around 200,000 – 300,000 young people join the employment market in Senegal and Mali each year; 60% of whom live in a rural environment.

In mainly agricultural economies, increased agricultural productivity is critical to reduce these inflows of labor. Only a productive agricultural sector can reduce youth unemployment and stimulate the demand for off-farm jobs. This is especially important at the level of infrastructure, storage installations, logistics, the resale of agricultural equipment and tools, jobs linked to the maintenance and repair of agricultural machinery and finally jobs created by the introduction of NICTs [new information and communication technologies] in the agricultural sector.

In Sub-Saharan Africa, the rice value chain has considerable potential for productivity and job creation, yet young people in rural areas struggle to access these opportunities due to a lack of adequate integration models, focused trainings, support and concrete openings.

For three years, the Syngenta Foundation for Sustainable Agriculture (SFSA) and its partners have therefore been working in the Senegal River Valley and in the Office du Niger on initiatives aimed at promoting agribusiness models both upstream and downstream, essentially involving young people in providing mechanized services (soil preparation, harvesting) and using digital applications to provide agricultural advice or to manage machines and equipment, storage and processing. Now that these models have been tested, they are in the process of being expanded into other rice-growing areas of Senegal and Mali in partnership with OCP, ACP and AfricaRice.

CEMA: a service hub in rural areas

A CEMA is a centralized platform (hub) which delivers a package of services to grass-roots farmers to reduce to the greatest possible extent the transaction costs linked with accessing these services.

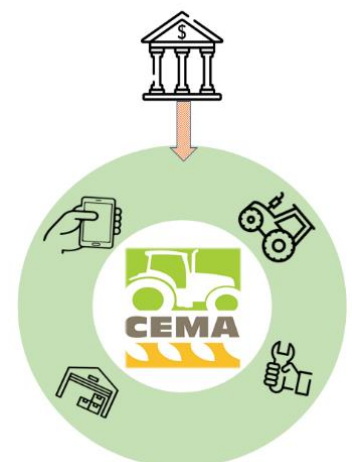
- At an operational level, it is a distinct, autonomous entity coexisting with the farmers' organization, equipped with a business plan and a whole range of services which is broad enough to guarantee a return on investment within 2 - 3 years.
- In the pilot model initially tested by SFSA, the services were centered on the provision of mechanized services such as ploughing, offsetting, soil preparation for rice planting, grading, harvesting and storing.
- Consulting services on good agronomic practices for growing productivity provided (free) by SFSA were considered an "initial investment to guarantee the quality of production".
- This pilot model demonstrated that there is a whole range of jobs in a CEMA: a manager, drivers, tally clerks, mechanics, watchmen, occasional labor, etc.
- As experience increased, new services seen as business opportunities were integrated as potential sources of jobs for youth in rural areas.
- The introduction of digital applications at CEMA level created new job opportunities i) in managing tractors and combine harvesters with the Hello Tractor application through employment of Booking Agents (to collect demand and plan supply), ii) in rational use of fertilizers with the RiceAdvice application through employment of Service Agent (SA).



E-CEMA: digital platform to manage a CEMA

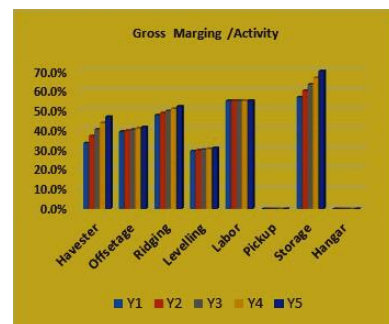
Operational organization of the CEMA

- The CEMA is a multifunctional center for the provision of agricultural services. Initially, the services were essentially around mechanization and storage infrastructures. However, recently the services offered by the CEMA have increased.
- Equipment and infrastructure are financed on credit on the basis of a guarantee fund put in place by SFSA or by other partners in a bank.
- The introduction of digital applications (Hello Tractor, RiceAdvice, e-farmers' Hub) has allowed integrated management of "just in time" activities. These digital tools are essential for the scaling-up of the CEMA model.
- The jobs created within the CEMA, besides the manager, drivers and tally clerks, have been supplemented by Booking Agents (Hello Tractor), by Service Agents (RiceAdvice), by mechanics/repair technicians and mechanics' assistants employed in the CEMA garage. We estimate that around 60-70 rural youth have benefited directly or indirectly from resources generated by the CEMA.



The financial model

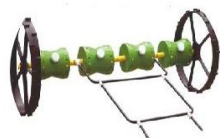
- ① Services which generate income are made up of traditional (mechanized) services plus services linked to the use of digital CEMA applications:
 1. Soil preparation: ploughing, offsetting, soil preparation for rice planting, grading, levelling, sowing, earthing-up (in the form of a package at an all-inclusive promotional cost to generalize the use of technical routes to achieve good agronomic practices).
 2. Harvesting, threshing, storing and processing.
 3. Access to and management of digital applications: booking services.
- ② Free services or those generating little expenses: training courses on good agronomic practices, payment of the Booking Agents and the Service Agents.
- ③ Pricing models for profitability have been established based on the costs of equipment and labor. The guide prices are around 27,500 CFA/ha for soil preparation, an average of 180,000 CFA/ha for harvesting (the actual costs are paid in kind from the harvest onward and represent 18 % of yield) and 2,000 CFA/bags for storing the paddy. With a production capacity of 300 to 500 hectares per season, a CEMA can achieve a return on investment for the equipment (tractors, combine harvesters, storage depot, labor costs) after 2 – 3 years.



The CEMA model: lessons learned

Through the experience gained over three years in the different areas where CEMAs were launched with different partners in Senegal and Mali, satisfaction surveys carried out showed that despite the relative novelty of the concept and the approach, it has been possible to learn some key lessons already:

- ① Without doubt, it is first and foremost the confidence that from the equipment acquired on credit from the banks involved in financing, that the credit will be reimbursed 100%.
- ② The range of services offered in the form of a package (ploughing, offsetting, grading, sowing, weeding, harvesting) at an all-inclusive promotional price allows smallholders to access essential good agronomic practices to increase productivity.
- ③ CEMAs should also be seen as *Incubation Centers with the promotion of new technologies* related to agricultural equipment.
- ④ Between 2016 and 2018, five technologies were introduced and tested in the Senegal River Valley (Indian seed drill, seed and fertilizer spreader, laser grading blade, cage wheels, channel cleaner) and four in the Office du Niger in Mali (4-row seeder, reaper, mini-harvester, mechanical transplanter).
- ⑤ In terms of development, the CEMA has improved the cropping intensity in Senegal significantly, which has risen from 0.8 to 1.8% for all seasons (dry and wet) combined. Smallholders are anticipating the cropping methods before the credit is even available. In the Senegal River Valley where CEMAs have been launched, double-cropping is effective thanks to the equipment available. Another important fact to note is that ploughing is coming back in force in the Senegal River Valley.



75% reduction in sowing rate



44% reduction in sowing rate and time (15 min/ha)



Reduction in cost and duration of transplanting



Mini-combine harvester on trailer



Cage wheels: sowing and spreading fertilizer on flooded land

Prospects

After conducting successful pilot projects in Senegal and Mali, the Syngenta Foundation started scaling-up the CEMA model in these two countries and elsewhere in Sub-Saharan Africa. The strong hypothesis posited at the outset of the launch of the CEMA model, is that it will facilitate the creation of new jobs (currently 60 - 70 jobs for rural youth for a CEMA covering 350 to 400 ha of rice). It has been validated beyond any doubt.

Jobs created (2015-2017)	CEMA UPG (300 ha) Senegal	CEMA SOCOUMA (450 ha) Mali
Permanent jobs	9	8
Temporary jobs	60	52

Based on these impressive results, the PEJERIZ project currently being implemented in Senegal and Mali with the support of the CTA and AfricaRice plans to create 10 CEMAs (5 CEMAs per country), 80 SMEs managed by young people (40 per country) and 1000 jobs for rural youth (500 per country) over the next two years (2018-2019).

The SFSA is open to extending this experience with other partners in order to facilitate access to mechanization for smallholders and to create jobs for young people in rural areas.

Contact

Syngenta Fondation for Sustainable Agriculture - Dr Youssou Diagne - Code postal, CH-4002 Bâle-Suisse
syngenta.foundation@syngenta.com - www.syngentafoundation.org