AGRO 2015 MONTPELLIER
07 -10 SEPTEMBER

The International Scientific Week
on Agricultural Systems

FSD5
Proceedings

Agricultural systems by design

SEPTEMBER
7-10, 2015
Le Corum
MONTPELLIER
France

5th International Symposium for Farming Systems Design

"Multi-functional **farming systems** in a **changing world**"

ESA European Society for Agronomy

AGROPOLIS INTERNATIONAL

Proceedings of the 5th International Symposium for Farming Systems Design

FSD5

Montpellier, September 7 - 10, 2015

Editors: Gritti Emmanuel S. – Wery Jacques
Cover design: Olivier Piau – Lisbeth Michel
Final edition: Gritti Emmanuel S.

Special thanks to the scientific committee's members for their commitment in the reviewing and editing processes

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Emerging farms in Northern Cameroon: an economic and social change towards high agricultural productivity?

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1 Introduction

Sub-Saharan family farms have often been described as structures with low production means explaining their weak economic performance (Mbétid-Bessane *et al.*, 2006), and also their difficulties to innovate. In their diversity, some more efficient farms qualified as emerging were identified by the Cotton Development Company in Cameroon (SODECOTON) as being capable of cultivating more than five hectares of cotton, allowing individual marketing of their production and inputs. Fifteen years ago, these farms were rare (less than one per thousand farms). In 2014, over 4,000 emerging farms were counted (2% of all farms), growing 13% of the cotton area in North Cameroun. How these farms come to such results, and are they more likely to implement technical innovations, are questions whose answers may allow addressing in a targeted way the development of agriculture in northern Cameroon. A survey was conducted in 2014 on these farms, aiming to (i) characterize their structure, (ii) understand how their management could explain their results, and (iii) whether specific supports would improve the sustainability and efficiency of their production system.

2 Materials and Methods

Using the 2013 census (by SODECOTON) of 3,532 emerging farms in the administrative regions of North and Far North of Cameroon, a survey was conducted in 2014 with a single pass questionnaire among 45 of them located in the SODECOTON area of Ngong, in a SODECOTON area where they were particularly numerous. The questionnaire included closed and semi-open questions and had to be administered in less than one and a half hour. The results were compared with the average data of farms, using various reports and published work (Mbétid-Bessane & Havard, 2013; Bourou *et al.*, 2006).

3 Results – Discussion

3.1 Structure of emerging farms

The number of families dependent was more important than in the average of farms in the region (table 1). Immediate family was large, but collateral and permanent hired labor was found as well. It should be noted that 91% of school-age children were actually attending school, girls and boys as well. The number of equipment in animal traction and cattle existing was also more important.

Table 1. Structure of emerging farms

	Number of family dependents	Number of working age people	Number of draught animal full equipments	Tropical Livestock Units existing
Emerging farms	16.2	5.1	1.8	11.3
Regional average	5.1	2.9	0.26	1.5

3.2 Cropping Systems

Emerging farms have grown twice more surfaces per capita than the regional average for comparable crop rotation (Fig.1). They were not only the largest farms in the region but also functioned differently. To achieve this, they relied heavily on external hired labor: on average 522 working days for the 2014 crop year. The crops were also cultivated in an intensive way: the doses of fertilizers applied (in a localized manner) on cotton were close to the recommendations (while besides, the half dose is usually used, often deposited on the surface without being covered), and the recommended doses were exceeded in the cultivation of maize. All cultivated areas were treated with herbicide at least once, sometimes twice. Nearly all farms have used organic manure. Three-quarters had trees plantations. To raise their animals, almost all producers have made fodder reserves and resorted to buying food supplements. Half of the farms have made forage (forage sorghum).

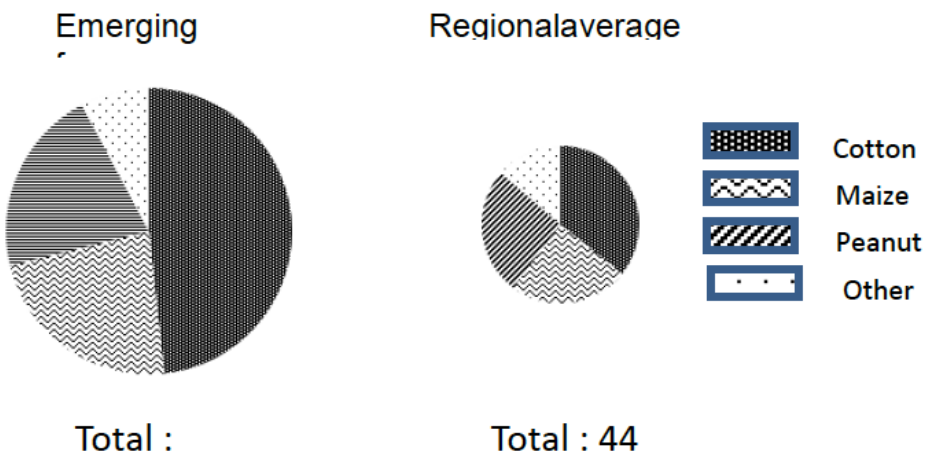

Fig.1. Emerging farms acreage per capita

3.3 Economic Approach

The survey does not establish a complete operating account, but some data can be calculated. While inputs for cotton production are subject to a seasonal credit campaign, inputs for food crops and hired labor payment are to be settled in cash. So, emerging farms spent an average of 854,000 FCFA (Table 2) during the crop year and before harvest. This high flow capacity, rare in African family farming, allowed them to set up their crop system. Note that the sale of cotton covered virtually all cropping costs, and its fixed price was an insurance to recover all of the expenses. The farms also produced food surpluses. These farms are similar to the entrepreneurial farms described by Bosc*et al.*, 2014.

Table 2. Some emerging farms costs and products data of crops in FCFA, for the crop year 2014

st of food inputs (cash)	Cost of hired labor (cash)	Cost of cotton inputs (on credit)	Total cropping costs	otton Product, 2013 crop year (for 30 farms)
427,000	427,000	1,045,000	1,898,000	1,797,000

3.4 Social environment of the production

In a region where land insecurity reigns, these farms reported being safe on 69% of their cultivated plots in average. They were confident that over half of their plots, they had the exclusive right of the profits on wood products. The heads of these farms often had traditional or economic titles (village or district chiefs, group delegates), but so far the ownership of all of these farms was in general in no way linked to traditional hierarchy.

4 Conclusions

These farms are emerging, firstly because they are becoming more and more numerous, and secondly because they put in place a system of intensive and efficient crops through a controlled economic management. The economic area and the social environment of these farms are conducive to the adoption of technical alternatives that have had little success elsewhere. Measures to limit the negative impact of the systematic use of herbicides, improving the quantity and quality of organic fertilizers produced on the farm, the establishment of an integrated fertility management for farms, are examples of targeted support that are likely to bring good results with these farms. This study also shows segregation of the farms with the poorest selling their labor and sometimes their inputs to the more efficient ones.

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