First International Conference on
GLOBAL FOOD SECURITY
Noordwijkerhout, The Netherlands 29th September – 2nd October 2013

Do the current rice cropping systems allow small household farms in Sierra Leone to produce enough rice for their own needs?

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Introduction

Twelve years after the end of its civil war (1991-2001), Sierra Leone still faces the challenge of food and nutrition security:

- Smallholder farms are mainly cultivating rice as a staple food for their own consumption. They are very vulnerable to fluctuations in the amounts of rice produced.
- Rice yields are the lowest and most variable of all the countries in West Africa.
- Absence of thorough studies to explain the way rice farmers take the available production factors into account when making their decisions.

Objective

- Characterize the efficiency of rice-growing systems on small farms according to socio-economic and biophysical production factors,
- Identify levers which might improve rice yields.

Methodology

3 Steps :

1. Investigation of 81 surveys of rice farmers in Bombali, North Sierra Leone.

2. Classify into household classes, using a statistic analysis, according to the rice yield and level of rice consumption.

3. Identify, on the basis of the first analysis and on a review of the literature for agricultural and rural development strategies in Sierra Leone, potential levers for improving the performance of rice farms.

References

1. BAFD, OCDE, PNUD, CEA. 2012. Perspectives économiques en Afrique.
2. FAO. 2011. Stratégie de gestion des risques de catastrophe en Afrique de l'Ouest et au Sahel | FAO (2011 - 2013).52p.
3. Kamel Louhichi, Sergio Gomez y Paloma, Hatem Belhouchette, Thomas Allen, Jacques Fabre, María Blanco Fonseca, Roza Chenoune, Szvetlana Acs, Guillermo Flichman. 2013. Modelling Agri-Food Policy Impact at Farm-household Level in Developing Countries (FSSIM-DEV). Application in Sierra Leone.

Results

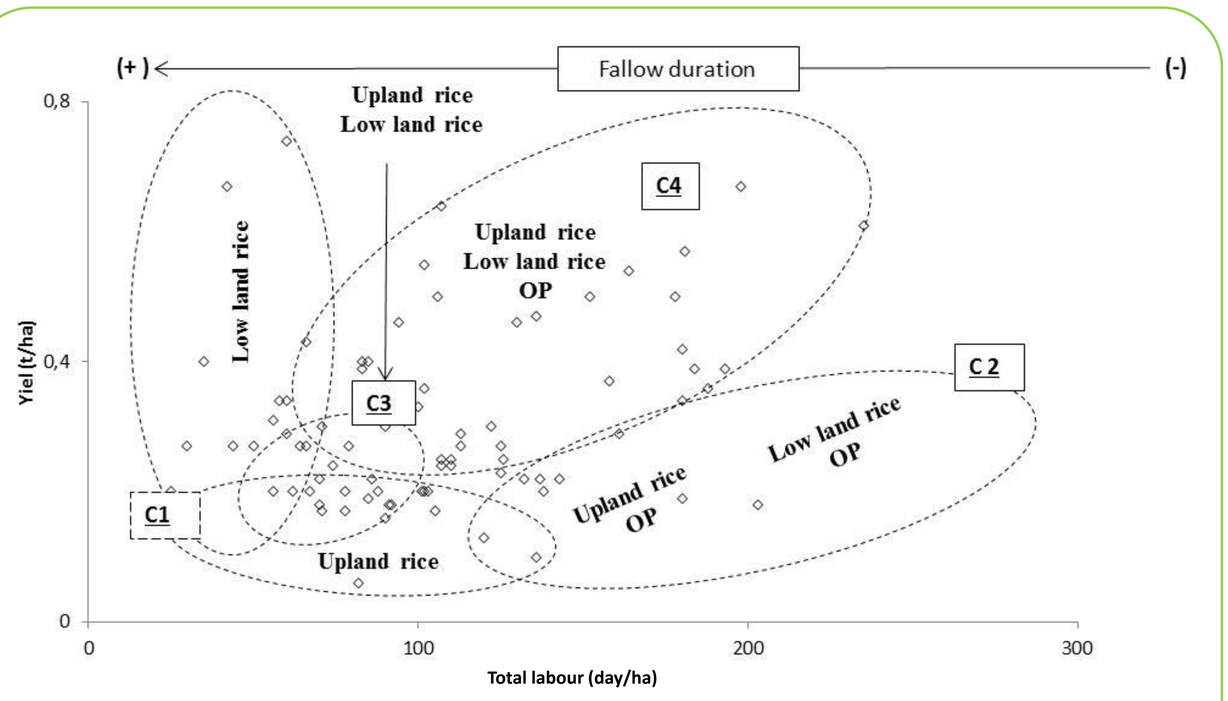

Fig.1 Variation of rice yield and rice consumption by capita (C4=30 kg/person/year / C2=18 kg/person/year /C3=17kg/person/year /C1=14 kg/person/year) for the 4 types of household rice farms (C1 to C4) by taking into account the rice ecosystems (upland , low land and the il palm (OP)).

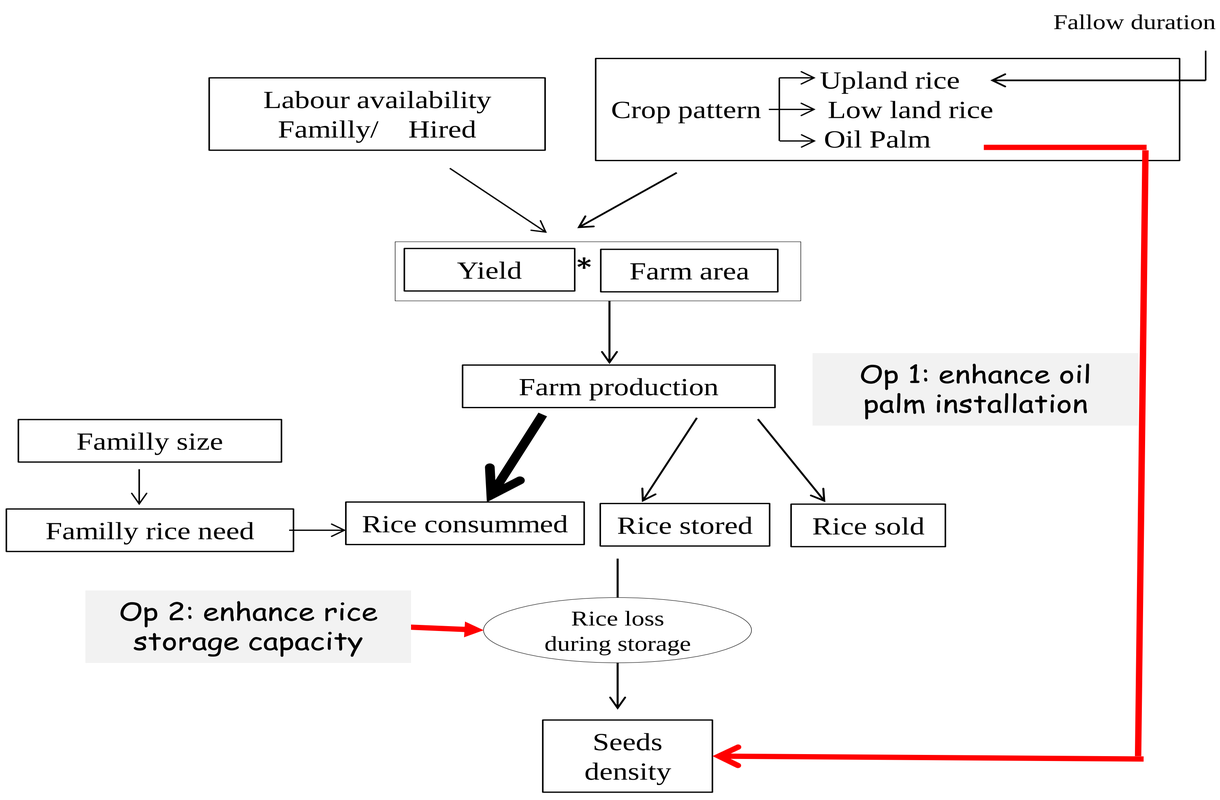

Fig 2. Representation of rice smallholder farms' production strategies and the two options (Op1 and 2) to enhance rice production.

Conclusion

1. The decision is further complicated by:

- The decision concerning the amounts of rice that should be kept for their own consumption during the year and stored as seed for the following year.
- Duration of the fallow period which determines not only the initial level of fertility of the upland rice, but also the sowing densities.
- The surface areas allotted to oil palms may affect the amounts stored for seed.

2. Develop a household model to assess the impact of incitement measures to promote the acquisition and storage of rice seed and the introduction of a cash crop such as oil palms.

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