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

R, Chenoune *1,2*, H.Belhouchette 1,2*, G, Flichman 1, S, Gomez y Paloma 1,3, A, Capillon 1,2
1 CIHEAM-IAMM, 2 UMR SYSTEM -SupAgro , 3 JRC- Spain

**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.

**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)).](image1)

![Fig 2. Representation of rice smallholder farms’ production strategies and the two options (Op1 and 2) to enhance rice production.](image2)

**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 incentive measures to promote the acquisition and storage of rice seed and the introduction of a cash crop such as oil palms.

**References**