## Cropping systems intensification and resilience building

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## Food security and better livelihoods

## for rural dryland communities

**Activity:**

Dual purpose high yielding cultivars and context specific integrated crop management as part of matrices of intensification and resilience building (Maize, chick pea, pegion pea)

**Progress:**

Farmers’ preference of crops and cropping systems were identified based on the based on our RRAS conducted during 16-17th March 2015 at in the target villages *viz.,* Balaganur and Mannur of Sindagi taluka and Nandihal of Basavana Bagewadi taluka.This study helped to identify farmer’s crop preferences and farm level restrains.

**Identified crops and preferable traits based on farmer interaction and expert consultancy**

Pigeonpea varieties less than 150 d duration **wilt and sterility mosaic resistant improved varieties** only need to be introduced. If ICP-8863 suits, then plant protection at flowering is to be taken care.

Suitable groundnut varieties to introduce with proper seed treatment

Bajra varieties resistant to downy mildew and green year disease.

Rabi sorghum varieties with better grain and fodder quality compared to M35-1 only need to be introduced.

ICRISAT varieties of chickpea (JG-11 and KAK-2) are satisfactory to farmers in Vijayapura

Following field layout was proposed and presented by Mr **V. Nageswara Rao**

**Proposed Experimental design for DS field trials in Vijayapura(2015-16)**

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1. In each village, we have to test two major cropping systems with traditional and improved varieties, nutrient management and water management practices to evaluate NUE and WUE management systems appropriate for the season and region.
2. A set of coupled treatments would be evaluated in minimum of three farmers’ fields with two cropping systems.
3. Tantamount to 36 field trials (2 CS X 3 Replications X 6Treatments) in each village.

***Null Hypothesis to test***:

* No difference in performance of farmers’ varieties (FP) and improved varieties (IV)
* No difference in performance of varieties with fertilizer N: P: K and micronutrient to nutrient application in farmers’ management.
* No difference in performance of both varieties in response to soil water conservation (SWC) measures and conventional soil management

It is planned to conduct field trials during *kharif* and *rabi* seasons Based on the seasonal weather forecast, opinion of farmers during interactive meetings, major interventions for the existing cropping systems have been proposed. The details of finalised field trials are given below:

**On-farm trials**

(*Dual purpose high yielding cultivars and context specific integrated crop management as part of metrics of intensification and resilience building for legumes and cereals*).

**Trial I: Inter cropping system: Greengram + pigeonpea (2:1) and Groundnut + pigeonpea (4:2)**

T1 -Improved variety + Recommended fertilizer + Soil and water conservation

T2 -Improved variety + Farmer’s fertilizer + Soil and water conservation

T3 -Local variety + Farmers practice

**Trial II: Sequence cropping system: Greengram – *rabi* sorghum**

T1 -Improved variety + Recommended fertilizer + Soil and water conservation

T2 -Improved variety + Farmer’s fertilizer + Soil and water conservation

T3 -Local variety + Farmers practice

**Varieties**

Greengram: BGS 9

Groundnut: Dharani

Pigeonpea: TS3R

All the inputs *viz*., seeds (greengram, groundnut and pigeonpea), fertilizers (DAP, Urea, MOP and Gypsum) and biofertilizer (*Rhizobium*, PSB and *Trichoderma*) are kept ready for sowing. Six farmers were selected from each village for each Trial (cropping system) and list of farmers is given below. Only few farmers have taken up sowing with the help of irrigation in the absence of rains.