



DFID Natural Resource System Programme

## Rainwater Management for Drought Proofing Farm Pond Technology for Sustaining Groundnut Production in Anantapur

About 70% of world's groundnut production comes from Asia of which India has the major share. India ranks first in area (8.4 m.ha) and production (8.2 mt.) with a productivity of about 1.0 t/ha while China holds the highest productivity record (2.2 t/ha) in Asia. The low productivity in India is mainly attributed to the cultivation of this crop in rainfed areas. Groundnut is widely grown in arid region of South India, particularly in Anantapur district. Two-thirds of the cultivated area in the district is under groundnut. The average rainfall of Anantapur is less than 500 mm, with erratic distribution and long dry spells during the season. The soils are shallow (light textured *Alfisol*) and have very poor water holding capacity. One supplemental irrigation (10 mm by sprinkler irrigation at pod development stage) increases the yield by 33%. This brings out the importance of rainwater harvesting through farm pond technology for supplemental irrigation to save the crop during initial dry spell. This technique has been successfully demonstrated at the Agricultural Research Station (ARS), Anantapur.

DFID – NRSP project R8192 “Enabling rural poor for better livelihood through Improved Natural Resource Management in SAT India” being implemented by CRIDA, ANGRAU and BAIF in Anantapur district of Andhra Pradesh attached high priority to improve the groundnut yields under rainfed conditions through participatory NRM particularly efficient rain water management.

### Adoption process

Having realized the importance of farm ponds in saving the crop from drought, the project team proposed to excavate the ponds on farmers' fields. The farmers were initially reluctant to accept the proposition as they had fear of losing a part of the land. Most of them are small and marginal farmers. Focus group interactions were held with the villagers to sensitize them on the value of water harvesting and supplemental irrigation. They were also taken on an exposure visit to Agricultural Research Station, Anantapur. They observed the beneficial effect of supplemental irrigation during dry spell with stored rainwater in the farm pond and a few of them came forward for digging of farm ponds in their fields. The ponds were partly financed from the project funds and the farmers' contributed their share in the form of labour.



Digging of Farm Pond by the farmers

### Successful use of Farm Ponds:

The early rains (90mm) during the month of May 16 & 17, 2004 resulted in filling of all the water harvesting structures i.e. farm ponds dug out by the farmers under the project. Two farmers Mr. Mallarayudu and Mr.Kullayappa who have constructed a pond with stone lining have gone for early sowing of Groundnut crop in their fields on May 20, 2004 expecting rainfall in the ensuing



Supplementary irrigation from Farm Pond

formation and lack of rains after sowing. He could use the water collected in his farm pond to give a light irrigation to his Groundnut crop to break the crust formation which has resulted in good sprouting. Seeing the usefulness of the farm ponds for collecting and using the rain water for supplementary irrigation to save their crops, more than 24 farmers who were skeptical about the usefulness of farm ponds in a dry area like Anantapur have come forward to adopt this farm pond technology.

## Need for up-scaling

Experience gained by farmers through working with project staff has paved the way for change in the mind set of farmers in the project areas in better utilization of most important natural resource viz., rain water. The observations made by the project staff has revealed that in dry (hot) places like Anantapur with light textured soils, it is better to line the farm ponds to increase the storage period of water, as it is meant for supplementary/life saving irrigation of crops. Hence, further research is needed to reduce the cost of lining of ponds and preventing seepage losses with locally available material, so that more farmers can adopt this technology with less investment. Farmers must be encouraged to take up these structures with some support from the Government for capital expenditure. Facilitating the communities by providing technical backstopping and networking with developmental agencies, NGOs, village panchayat and state line departments is very crucial for scaling up the of the technology to avoid crop failures.

months. But, however, due to long dry spell the crop has started withering and at this stage these farmers could save their crop by giving a supplementary irrigation from the water collected in their farm pond from May rains.

Similarly another farmer Mr. Sunder Reddy who also dug up a farm pond in his land has sown Groundnut because of early July rains, has found the seedlings struggling for sprouting because of crust



Groundnut crop after supplementary irrigation



## Central Research Institute for Dryland Agriculture

Santoshnagar, Hyderabad-500 059 A.P. (India)

## Agricultural Research Station, ANGRAU

Kamalanagar, Anantapur-515 001 A.P. (India)

## BAIF Institute for Rural Development-K

Tiptur-572 202 (India)

