

Journey from Polluted wasteland to Productive Farmlands

National Agro Foundation (NAF), is implementing Water and Agriculture Development Project with the financial support of Oerlikon Friction Systems India Pvt Ltd in three villages namely Neikuppam, Kidiripettai and Poosivakkam in Walajabad block, Kancheepuram district of Tamilnadu.

The agriculture lands in these villages were polluted by dye effluents released from dye factories of Kancheepuram, thereby contaminating the water sources and aggravating soil pollution, impacting cropping in the area.

During April 2019, NAF started implementation of the project in these three villages, through focused training programs on Lean farming Technologies including soil health and water management practices, targeting the transformation of the landscape in the region.

Soil test was done for the progressive farmers and Front Line Demonstrations were established on these farmers' fields. Sunhemp green manure was raised in the fields and incorporated in to soil which favored soil organic content and reduced salinity of soil which was caused by dye effluents. Bio fertilizers were applied to these fields which

in turn increased the fertility of soil. Based on soil test results, prescriptions were made for judicious application of primary, secondary and micronutrients to facilitate balanced nutrition. Site Specific Nutrient Management and Integrated Pest and Disease



Management was implemented in all the FLDs. There was a drastic improvement in yield and profit in FLDs when compared to conventional methods.

An excellent example of the impact of the above interventions is detailed below.

Mr. Sadhasivam, a progressive farmer from Neikuppam village, established FLD in his one acre land and kept another one acre land as control. Soil sample was taken in the FLD plot and recommendation was prescribed based on soil test result. As per the recommendation of soil test, the farmer applied 50 kg DAP, 50 kg Urea and 50 kg Potash as basal just before transplanting. Paddy seedlings of Co 51 were transplanted on 28.09.2019 on both the FLD and control plots.

400g of Azospirillum and 1 kg of Phospobacteria biofertilizers were mixed in 20 kg of Farm Yard Manure and broadcasted over FLD. On third day after transplanting, he applied 2 kg Manganese sulfate, 2 kg Ferrous sulfate, 5 kg Copper Sulfate and 6 kg borax. During tilling phase, he applied 50 kg Urea and 25 kg Potash and during ear head emergence, 25 kgs each of Ammonium sulfate, 17:17:17 Complex and Potash were applied as top dressing.

To adopt IPM practices, the farmer installed bird perches, yellow traps and pheromone traps in the FLD plot. As prophylactic pest control measure, neem based pest repellent and bio fungicide were sprayed over



demo plot. To improve crop growth, organic growth promoter Panchakavyam was sprayed two times. NAF Experts visited FLD on regular basis and provided need based crop advisory services. In comparison to the above measures undertaken on his demo plot, the farmer practiced conventional methods of cultivation on his control plot.

Harvesting was done with machine, where the demo plot recorded a yield of 25 bags (1875kgs) while control plot yielded only 20 bags (1500 kgs).

The following table presents the expenses and income statement.

Sl.No	Particulars	Demo (1 acre)	Control (1 acre)
1	Yield	20 bags	15 bags
2	Sale price	18	18
3	Income	33750	27000
4	Expenses	15120	16100
5	Profit	18630	10900

The results of the impact of lean farming technologies were established and were tangible, as the farmer got 25% increase in yield and 71% increase in profit in demo plot as compared with control plot.

Prior to NAF intervention in this area, the farmers got an average yield of only 12 bags per acre, however after perceiving the benefits of Lean Farming, they are getting 20 bags yield under FLDs and in the forthcoming years, the yield will increase further due to increase in soil health and reduction in the adverse effects of dye effluents.

NAF has been successful in transformation of the polluted low agricultural lands in to fertile and highly productive fields for the farmers, thereby impacting not only the livelihoods of those farmers, but also contributing to restoration and conservation and sustainable use of the natural resources in the region.