Essentially, all life depends upon the soil.... There can be no life without soil and no soil without life; they have evolved together.

- Charles.E.Kellogg

AME Foundation promotes ecological agriculture among small and marginal farmers in the semi arid areas of the Deccan Plateau by generating farming alternatives, enriching farmers knowledge, linking development agencies and sharing experience.

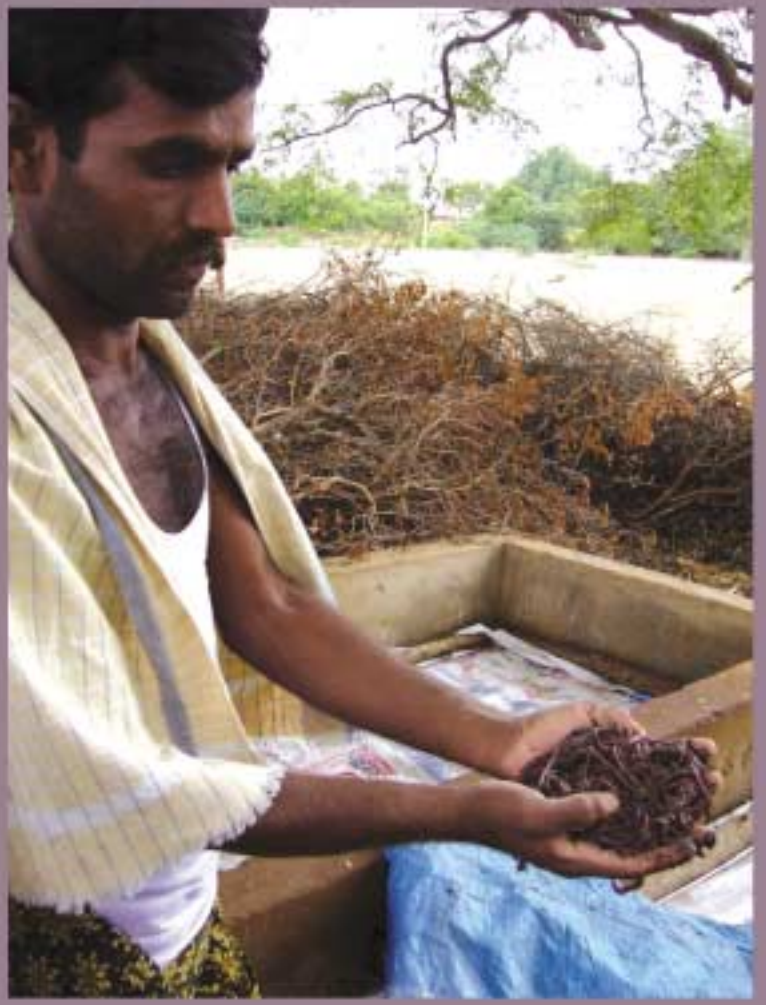
January 2007

AME Foundation
No. 204, 100 ft. Ring road, 3rd Phase,
Banashankari 2nd Block, 3rd Stage, Bangalore 85
Ph: 080-26699512, 26699522 Fax: 91-80-26699410
amebang@giasbg01.vsnl.net.in;
amefbang@amefound.org Website:amefound.org

AMEF Case Study Series 6

Vermicomposting brings better yields and returns

A small farmer shows the way



This is the case of a small farmer who chose to be different from the typical resource-poor farmers struggling to make a living in the degraded drylands. His deep 'love for life' has not only earned him a decent living, but more importantly, it has inspired many other farmers to emulate him.

In the District Stakeholders Workshop organized by AME Foundation, Bellary, in November 2006, there was an opportunity for many 'players in development' to share how they could be useful to each other. The gathering included farmers, NGO staff, representatives from the Department of Agriculture and Horticulture, University Scientists and members of NABARD. **Chandranna,** a young farmer, explained why he was known as *'Nursery Chandranna'* before and *'Vermicompost Chandranna'* now. Everybody was amused by his story. Suddenly, the audience heard him with disbelief when he said he earned Rs. 1.4 lakhs from the sale of vermicompost and earthworms in three years. It has now become a fairytale in the region where the average annual earnings for a small farmer like him does not exceed Rs. 15000.

An ideal village, an unfavourable setting

Chandranna lives in Tumkurlahalli, a village with 650 households in Molakalmuru Taluk of Chitradurga District. It is located about 8 kilometers off the State highway, with most of the basic amenities in place. The village has a primary health center, a primary school and a high school, an overhead tank that supplies drinking water through 150 taps across the village, and even a small government library.

The village consists predominantly the backward communities – 410 SC families, 100 muslims and 100 lingayat families with a population of 3800. The village has about 3322 ha. of which 15% is dryland and 3.5% is under bore well irrigation. The remaining 2695 ha. (81.5%) is common land that includes wasteland, common grazing land and the 'reserve forest' where only shrubs and bushes are seen, occasionally.

The terrain, in general, has shallow red sandy soils. With boulders scattered all over, it is not an ideal village for remunerative farming. With less than 500 mm. average annual rainfall, the farmers are forced into a gamble with groundnut cultivation, the only cash crop grown year after year. Over 30 years of monocropping, with groundnut and groundnut alone, has resulted in the yield levels declining to a dismal 8 q./ha. Though agriculture is hardly a lucrative proposition, majority of the people still depend on agriculture and wage labour for their livelihoods. Naturally, the village witnesses migration of men folk for most part of the year.

Small farmer with big hopes

In a village where agriculture hardly throws up surprises, Chandranna's case demonstrates that keen interest and self-belief can make agriculture a dependable enterprise. For, it is not a story of overnight success but one of a systematic effort to utilize opportunities offered to the farmers in the village from a variety of agencies.

Coming from a poor farming family, Chandranna has inherited 3 acres of dryland of which one acre is uncultivable wasteland. Wage labour, hence, was more important a source of livelihood for the family than agriculture in the two acre land. His parents wanted their only son to study. It was however not possible for him to go beyond the pre-university level, owing to poverty. He was forced to return and join his parents in farming.

In the Karnataka Watershed Development (KAWAD) project, with AME Foundation as a resource agency, Chandranna joined a Self-Help Group (SHG). The first SHG he joined did not survive for more than 2 months. As an youngster, he was bemused by the other young members who did not find enough motivation to continue in the SHG. It was with the support of the Group for Urban and Rural Development (GUARD), an NGO, that Chandranna mobilized 15 new members to form another SHG, *'Shri Bedara Kannappa SHG'*. He took up the responsibility of writing the records and maintaining the books of the SHG. Gradually, Chandranna became the center of action for many good reasons.

The triggering point

In 2000, Chandranna participated in a training on nursery raising at BAIF Institute of Rural Development, Karnataka (BIRD K), in Tiptur. But, he was more curious to know about vermicomposting, a parallel training session being organised for another group of farmers at the same time. He would join the group whenever possible. He got excited about rearing earthworms and preparing vermicompost.

On his return from nursery training, his group was given an opportunity to raise a nursery of 15,000 seedlings. The task was entrusted to Chandranna. Chandranna raised nursery for three consecutive years starting from the year 2000. His nursery was rated the best in the watershed project in 2003 and Chandranna became popular as *'Nursery Chandranna'*.

A modest beginning and a spectacular surge

His curiosity about vermicomposting continued. With the little knowledge that he had gained during the training, he tried multiplying local species of earthworms in coconut shells. However, they did not survive.

In 2003, Chandranna built four vermicompost pits of size 6x3x3 cu.ft. with the support of KAWAD project. He didn't know how to use the pits, though. A staff of GUARD then brought 2 kg. of earthworms which costed Chandranna Rs. 300. With the 2 kg. earthworms, he produced 20 q. vermicompost which he applied to his 2 acres of ragi crop. Growing ragi itself was an experiment in Tumkarlahalli as no one had grown ragi in the village before. He got 14 q. from 2 acres.

In 2004, he applied 6 q. of good quality vermicompost and 2 tractor loads of FYM (2 tons) along with a bag of DAP to 2 acres. This time he cultivated groundnut and obtained an yield of 20 bags weighing 9 q. of groundnuts.

In the early 2005, when GUARD partnered with AME Foundation, Bellary, it started looking into the systematics of sustainable agriculture. A few farmers of GUARD, including Chandranna, were taken on a 'vision-building' study tour to AMEF activities in Bijapur and BIRD K activities in Dharwad.

The purpose of the tour was to show evidence of profitable agriculture and motivate farmers to try out alternative farming practices in drylands. Visiting tree-based farming systems, interacting with farmers who had been successful in composting and vermicomposting helped Chandranna in getting a broader idea about sustainable agriculture. He learnt more about vermicomposting with his visit to another progressive farmer in nearby village, B G Kere. With further motivation from GUARD staff and AMEF support, Chandranna embarked on vermicomposting in a big way.

In the year 2005, Chandranna got involved in SA promotion activities under AMEF guidance. This time he applied 6 q. vermicompost to one acre PTD plot along with sets of combination of practices like summer ploughing, seed treatment with bio agents (Rhizobium and Trichoderma), application of Gypsum (50 kg.), using a higher than normal seed rate (45 kg.), growing intercrops and border crops. The yield went up to 13 bags from one acre giving him 6.5 q. groundnuts. It was the highest yield recorded by a farmer from one acre in the last four years of AMEF's work in the region. What was remarkable was the weight of each bag, which ranged between 50 and 60 kg. While Chandranna's 25 bags weighed 13 q., his neighbour Tippeswamy's 40 bags, weighed only 13 q. The trader buying the produce could not believe this. Infact the traders forced Chandranna to pour the contents out of the bag to make sure the bag did not contain stones. It was unusual that a bag of groundnut pods weighed more than 50 kgs. The uniform pod maturity and proper filling had improved the quality of groundnuts significantly.

Vermicomposting, a lucrative enterprise

Chandranna did not stop at producing vermicompost and applying it to his two acre land. He started selling both the earthworms and the vermicompost from 2004.

In 2004, Chandranna sold 124 kg. earthworms at Rs. 150 per kg. earning Rs. 18,600. He earned another Rs. 7500 by selling 15 q. vermicompost at Rs. 500/q. On the whole, he earned around Rs. 26,100.

Chandranna preparing compost

Inspired by an income higher than the one from groundnut, he intensified production and sale of worms and compost in 2005. In the process, he learned some lessons the hard way. He once packed 30 kg. of earthworms in soil culture for selling, which died before the deal was over. Later, he started selling worms packed in cow dung. When the watershed project, in its concluding year, offered more vermicompost pits to large number of farmers, the demand for earthworms further increased. He could earn Rs. 41,700 from sale of 278 kg. worms (at Rs. 150/kg.) and Rs. 11,500 from the sale of 23 q. compost at Rs. 500/q. That brought him a total of Rs. 53,200 in 2005. He further increased the number of vermicomposting pits. He started looking out for more crop residues and agricultural wastes. The four pongemia trees in his field, the biomass from the trees along the canal and the dry eucalyptus leaves provided raw material for his vermicompost pits. Realising the need for cowdung for vermicomposting, Chandranna started maintaining a pair of bullocks, a cow and 20 hens.

The returns are on the rise, consistently. In the year 2006, in an year that witnessed unprecedented drought-like situation that was not seen in the last 50 years, Chandranna still managed to earn Rs. 58,750 by way of selling 285 kg. worms and 32 q. of vermicompost. His total earning since 2003 has been Rs. 1,38,050. The actual earnings could be much more. The Rs. 1.4 lakhs he earned is recorded in the account he has maintained by offering receipts. His 'customers' are mostly the SHGs and farmers coming from many NGOs in Bellary, Chitradurga, Bagalkot and Bijapur districts, who insist on bills. There are individual farmers buying compost or worms without asking for bills, in which case no records are available on the transactions. Now, he is offering a special price of Rs.100/kg. for SHGs, whereas others have to pay Rs.150. The nearby customers get an additional after-sales service from Chandranna. Chandranna visits his customers farms and if the survival of worms is not satisfactory, he provides some more worms, free of cost.

The beacon of hope for the hopeless

The popular name *'Nursery Chandranna'* has now changed to *'Vermicompost Chandranna'*. A modest mud house is now getting extended with cement walls along with the increasing number of vermicomposting pits in the backyard.

He has already inspired many farmers in his village to try out alternative farming practices in general and take up vermicomposting in particular. The number of farmers involved in vermicomposting includes 48 farmers known to GUARD and many more farmers unaccounted. When the AMEF team in Bellary wrote an article about him they fittingly titled it 'A farmer who wanted to be a model farmer, turned the whole village into a model village'. The self motivated farmers like Chandranna are just the kind of catalysts the NGOs look for in converting small successes into mass movements. It is just the right kind of urge many resource poor farmers need to overcome the limitations and defy the odds.