



## Plastic Shredding Unit at Changlang

The District Administration of Changlang (Arunachal Pradesh) started a Plastic Shredding Unit with the main goal to reduce, reuse and recycle (RRR) plastic. The shredded plastic was proposed to be used in construction of roads.

The unit was installed in November, 2019 in Kumung Pather Village, Bordumsa Division of Changlang District, Arunachal Pradesh. It is the first-of-its-kind processing unit in eastern Arunachal, wherein single use plastic substances are processed into 2.3 mm fine particles to be mixed with aggregate bitumen for road construction.

The unit by providing employment to the local youth boosts economy and contributes towards a clean and safe environment by getting rid of plastic materials.

Purely a bottom-up approach wherein the community acts as a catalyst to prevent environmental degradation and at the same time generate local employment opportunities. At the same time, it has helped in maintaining good quality roads as bitumen with shredded plastic mix increases durability and strength of the road. The strategic trans-Arunachal

highway traversing very close to the set-up unit and also through major parts of Changlang has enabled it to be a central hub, thus catering to the entire eastern Arunachal Pradesh with tie ups extending to most of the districts like Namsai, Lohit, Longding and Tirap.

This project is significant for Changlang District, because there is rampant consumption of bottled water due to lack of pure drinking and thus lots of plastic bottles are thrown into bins. Inadequacy of physical infrastructure for plastic decomposition further compounds the problem. Also this project is helping to serve as central dumping point for all the waste generated in Bordumsa division which didn't have any centralised dumping ground earlier. This has ensured that waste generated is disposed off in a systematic and centralised manner.

Some plastic bottles are reused in constructing a functional greenhouse. The greenhouse serves as a nursery for various agricultural and horticultural crops. Operated by the horticulture department of the district, this helps in convergence of various ongoing schemes like agri-cluster and nutritional



kitchen gardens. Other parts of plastic bottles like wrapper cover and cap are segregated and sold to local recyclers separately.

The administration followed a collaborative and community based approach. The land for the said unit was given by the Kumung Pather Village Panchayat. The unit site is adjacent to the Trans-Arunachal Highway, which eases logistics and connectivity issues. The people employed at the unit are from the same village chosen by local panchayat. Profit sharing





mechanism in running the unit has been decided in the ratio of 90:10. While 10% of the profit goes to the village panchayat for ensuring regular maintenance and other contingencies, the 90% remains with the people running the unit.

The funds for setting up of the unit were mobilised from Oil India Limited (under corporate social responsibility) and untied developmental fund under ADC Bordumsa.

Raw material i.e., waste plastic for the unit is received from within the district and neighbouring districts like Namsai, Lohit, Longding and Tirap. National Highways and Infrastructure Development Corporation (NHIDCL) and the contractors constructing roads in nearby districts are the primary consumers of the processed material.

While the production and supply chain of the unit continued well from the time it was started in the November, 2019 till February, 2020, the unit had to be closed thereafter for four months due to national lockdown. The operations revived in July, 2020 and now with rising demand, more orders are likely to follow. With two plastic shredder machines in operation, around 7 tonnes of processed material has been produced. Installation of a third machine shall scale up the production to 100 kg/day.



The benefits of this project are prevention of environmental degradation and generating livelihoods. With the absence of functional plastic waste treatment infrastructure and the already stressed existing dumping grounds, it eases the pressure and helps in better disposal of plastic waste from Changlang as well as the neighbouring districts. The roads made with plastic waste have a long life. It is also a great boost to disposable income of the local people employed.

It is proposed to further scale up the operations and make it a primary hub in eastern Arunachal Pradesh for processing of plastic waste and as the source

centre of processed plastic. It is also planned to diversify and begin reusing waste plastic bottles for various beautification drives in the township areas of the district like plastic bottle garbage bins, footways made with caps of plastic bottles in urban parks. With the profits earned in running the plastic shredder unit, construction of recycle and recovery-park in its vicinity is also planned.

Thus, plastic waste, which has been a long lasting public nuisance has been converted into a potential value asset dovetailed to livelihood generation opportunities for sustainability of the project.

