

**Title: Collection, compression of Chil needles into briquettes and sale.**

**Background :** Chil (*Pinus roxburghii*) monotypic forests cover roughly 1346 sq. km. in all the districts of H.P. except Trans-Himalayas i.e. Lahaul-Spiti & Kinnaur districts. These forests are xerophytic in nature and grow on bare rocks or strata 'C' of the Soil profile. Therefore, during the dry spell, leaves of the trees are shed and ground is covered with low resin containing leaves which are highly inflammable. These are either subjected to or tend to burn on their own as the ambient temperature soars above ignition temp. of 36°C. These are potential fire hazards leading to uncontrolled fires with enormous loss of revenue as well as efforts to control them. For a long time, Forest Department has been struggling to put these needles in use through various attempts. One of the effective use of these forests fallen needles could be made into density blocks or briquettes for burning. These have been for some years utilized by the M/s. Ambuja Cement Plant at Darlaghat in Bilaspur district till the cost became prohibitive.

**Scheme :** While attempting to use pine needles here it has been taken into consideration, the past attempts. It is seen that the carriage of the needles is not at all cost effective. Therefore, the scheme is divided into following steps:

- (i) Chil area-wise CIG groups will be formed in the project area. These people will be paid wages for collection of pine needles, bundling, compressing into briquettes and loading in their respective areas.
- (ii) Two compressing units and a sky line will be fitted on a pickup van and a trolley of a tractor respectively. While sky line will be operated with the tractor shaft, the hydraulic compresses will be used for briquetting. Sky line will be utilized for bringing the needle lot in nylon net bundles uphill with the moving circular rope passing through fixed posts. 1-1.5 cft needle briquettes with a 8-10 Kg/ cft density will be compressed and tightened with binding wire will be then loaded into trucks to their respective destination.
- (iii) The net sale proceeds will be handed over to the VFDS for depositing in their accounts of all the CIG members with a fixed amount paid to VFDS accounts.

**Activities :** (i) It has been tied – up with CF Solan to provide 50Kg of fallen needles collected in gunny bags on the road side.

- (ii) The collected material will be sent for testing to form briquettes at a designated testing industry in Patiala (Punjab).
- (iii) Affixing the rope span and compressors over the van and trolley.
- (iv) Formation of CIGs on experimental basis in district Bilaspur (Jhandutta/ Shahtalai range).

**Costs involved :**

<b>No.</b>	<b>Activities</b>	<b>Units</b>	<b>Norms</b>	<b>Cost</b>
<b>1</b>	Constitution of CIG from VFDS	3	NIL	-
<b>2</b>	Collection of needles	6 daily wages	500/- per day	<b>4,50,000</b>
<b>3</b>	Cost of compressor	2	3 Lakh	<b>6,00,000</b>
<b>4</b>	Agricultural Implements	3	6,000	<b>18,000</b>
<b>5</b>	Wire span	LS	LS	<b>5,00,000</b>
<b>6</b>	Affixing cost on trolleys	LS	50,000	<b>1,00,000</b>
<b>7</b>	Nylon net	10	1000	<b>10,000</b>
<b>8</b>	Cost of Eicher tractor 380	1	10,000	<b>6,00,000</b>
<b>9</b>	Packaging binding wire	LS	LS	<b>10,000</b>
<b>10</b>	Sale & Auction	LS	LS	-
<b>11</b>	Cost of engine (5 HP)	LS		<b>20,000</b>
<b>12</b>	Cost of trolleys	2	1.5 Lakh	<b>3,00,000</b>
<b>13</b>	Transportation of material and contingency	LS	LS	<b>2,00,000</b>
	<b>Total</b>			<b>28,08,000</b>

The recurring cost will be Rs. 4.5 Lakh wages + Rs. 0.6 Lakh + Rs. 2 Lakh = Rs. 7.1 lakh x 4 = Rs. 28.4 Lakh

**Financial Returns :** The unit has a premise that 6 persons work to collect at least 18 quintals of pine needles per day. The current cost of needles being sold at Rs.500/- a quintal will result into Rs.9,000/- per day. The cost of hiring 2 units of tractors will be Rs.4,000/- per day with fuel. If the unit works for at least 3 months in summer season and 2 months in winter, the total earning will come to Rs.13,50,000/- per year. The break-even will be achieved in 2.25 years. If the machines with all their repairs function for 5 years, total earning will be Rs.67,50,000/-.

**Cost Benefit Analysis :** The benefit: cost = Rs. 67.50 Lakh / Rs. 28.08 Lakh benefit : cost = 2.40. Since the profit is ranging over a period of 5 years, the project is viable with a revolving fund of at least Rs. 10 Lakh. Rs. 67.50 Lakh / Rs. 56.48 Lakh (total cost for 5 years) = 1.19. Rs. 11.02 Lakh is the profit over a period of 5 years after deducting all expenses.

**Sustainability :** The project is **viable** and cost of **Revolving Fund** can be meted out in 4 and a quarter years.