

Survival assessment of afforestation activities in Panchkula district of Haryana

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ABSTRACT

The study was carried out in all the ranges of Morni, Pinjore forest division and the area under Haryana Community Forestry Project for the plantation year 2005-06 during 2007. Random sampling technique was used to select and lay out the sampling unit. Survival of the plantations was found maximum (90.63%) in Panchkula range followed by Morni (86.00%) and Raipur Rani (85.47%) and minimum (83.38%) in Pinjore range. Over all survival of the plantations in Morni-Pinjore Forest Division and Haryana Community Forestry Project was recorded 86.14 and 78.10 per cent respectively. In Panchkula district it was obtained 82.12 per cent. The plantation was done through the involvement of village committees. Village Forest Committees (VFCs) were constituted by the State Forest Department whereas Village Resource Management Committees (VRMCs) were formed under the Haryana Community Forestry Project. It was observed that the involvement of the local people could be further increased through organizing regular meetings, trainings, exposure visits and awareness camps. More and more people should be motivated towards social fencing concept and stall feeding practices. The active participation of the villagers at all levels can be ensured through employment generation, more incentives and proper benefit sharing mechanisms.

Keywords: Assessment, survival, afforestation, Panchkula

INTRODUCTION

Morni, Pinjore forest division falls entirely under district Panchkula which is surrounded by Himachal Pradesh in the North and Punjab in the West and South (Anon 2006a). The study area is a plain tract of Shivalik hills geographically situated

between longitude 26°- 46'- 40" West to 77°-1'-33" East and latitude 30°-40'-50" South to 30°-54'-40" North. The elevation varies from 370 m to 1570 m above mean sea level (Anon 1989, Anon 99). The Shivalik ranges are composed of sandstones, grits, conglomerates, pseudo-conglomerates, clay and silt.

Mostly the soils are sandy and deficient in humus content. However sandy loam, loamy sand and silt loam soils are also found. Generally the climate of the area is subtropical but the higher elevations are comparatively cooler. The annual rainfall varies from 350 mm to 1200 mm. About 50 to 70 per cent of the total rainfall occurs during the monsoon season and winter showers are also not uncommon. Frost is common in valleys lower down. Relative humidity in the area generally remains very high. In Panchkula district there are two agencies namely Haryana State Forest Department and Haryana Community Forestry Project (HCFP) which carried out the plantation work. The Haryana State Forest Department covered the forest land under plantation only through the formation of Village Forest Committees (VFCs) while the Haryana Community Forestry Projects undertook the plantation work on the community, Government and Panchayat land through the formation of Village Resource Management Committees (VRMCs). The State Forest Department has undertaken afforestation work in all the four ranges viz Pinjore, Panchkula, Morni and Rainpur Rani. The Haryana Community Forestry Project undertook the plantation work in Panchkula district mainly in Raipur Rani range.

METHDOLOGY

The study was carried out in all the four Ranges of Morni, Pinjore forest division

and the area under Haryana Community Forestry Project during 2007 for the plantation year 2005-06. Random sampling technique was followed to select the sampling unit. Ten per cent of the total plantation area under each land category was sampled. The sample unit size was 0.1 ha (1000 sqm) for block/compact plantations and 500 running meter for strip and ridge plantations. In all the sampling units enumeration of all the live and dead plants was done and survival percentage was calculated (Anon 2006b). Secondary data was procured from the divisional forest office, Pinjore, concerned range offices and office of Haryana Community Forestry Project at Raipur Rani (Anon 2006c). The basis of selection of sampling units is given in Table 1.

Species Planted

The quantity of seedlings planted in Morni, Pinjore forest division and Haryana Community Forestry Project (HCFP) during 2005-06 is shown in Table 2 (Anon 2006c).

RESULTS AND DISCUSSION

In the entire four ranges plantation was done on the forest land. The data presented in Table 3 depict that in Panchkula range maximum survival rate (97.30%) was registered in Ridge plantation schemes followed by RDF state scheme (86.72%) and RDF-JBIC (81.50%).

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Table 1. Basis of selection of sampling units

Agency	Land category	Scheme	Sites details		Sites selected for sampling			
			Site	Plants planted	No of sites	Plants	Samples taken	Plants sampled
Panchkula range	FL	RDF-state	3	33000	1	11000	10	1100
		RDF-JBIC	5	102470	1	24990	30	2499
		RP – JBIC	3	19492	1	10000	04	1000
		RP – state	1	10000	1	10000	04	1000
Morni	FL	RDF- state	3	38500	1	11000	10	1100
		RDF-JBIC	10	247925	2	79135	95	7914
		SP- JBIC (TP)	1	1992	1	1992	03	249
		RP – JBIC	3	15000	2	7000	03	750
Raipur Rani	FL	RDF- state	3	38500	1	11000	11	1100
		RDF-JBIC	15	24825	3	54145	65	5415
		SP- JBIC (TP)	2	2324	1	1660	02	166
		RP – state	4	15000	2	10000	04	1000
		RP – JBIC	6	22500	2	10000	04	1000
Pinjore	FL	RDF - JBIC	7	145185	1	29155	35	2915
		RDF - state	4	27500	1	11000	10	1100
		FF	1	11000	1	11000	10	1100
		SP- JBIC (TP)	1	1992	1	1992	03	249
		RP – JBIC	3	15000	1	5000	02	500
HCFP	P/C/GL	CFP	8	161600	2	44040	44	4404

Overall survival of the Range was 90.63 per cent. In Morni Range highest survival rate (95.05%) was obtained from Strip plantation followed by Ridge plantation JBIC (93.20%), RDF-JBIC (85.77%), RDF state scheme (81.91%) and lowest (74.03%) in RDF-JBIC scheme. The overall survival of the range was 86 per cent. In Raipur Rani range maximum survival rate (95.8%) was recorded from ridge plantation state scheme followed by strip plantation tall plants (90.35%), RDF state scheme (83.15%), ridge plantation state scheme (79.70%) and minimum (78.37%) in RDF-JBIC. The overall survival of the range was recorded to be 85.47%. In Pinjore range highest survival (95%) was recorded in ridge plantation JBIC scheme preceded by RDF state scheme (83.12%), strip plantation JBIC tall plants (83.12%), farm forestry (80.90%) and lowest (74.70%) in RDF-JBIC scheme. The overall survival was 83.36 per cent.

The Haryana Community Forestry Project carried out plantation in Panchayat and community land. Maximum survival (80.14%) was recorded from the Panchayat land. The survival of plantation in Community land was found to be 76.06 per cent. Over all survival was recorded 78.10 per cent. In district Panchkula the survival was 82.12 per cent. This was due to the involvement of local masses in protection of plantations in the form of committees and efforts of the state forest department.

CONCLUSIONS

Survival of the plantations was found maximum (90.63%) in Panchkula range followed by Morni (86%), Raipur Rani (85.47%) and minimum (83.38%) in Pinjore range. Overall survival of the plantations in Morni, Pinjore forest division, Haryana Community Forestry Project and Panchkula district was recorded as 86.14, 78.10 and 82.12 per cent, respectively. Due to the efforts of the committees and the agencies involved the survival of the plantations was found better. This shows that participation of the people can be increased through organizing regular meetings, trainings, exposure visits and awareness camps. More employment opportunities should also be provided to the villagers so that they may not migrate to the urban areas for seeking employment and thereby participate in plantation activities more actively. More people should be motivated towards social fencing concept and stall feeding practices for better results.

ACKNOWLEDGEMENTS

The authors are highly thankful to National Afforestation and Eco-development Board, MoEF, GoI, New Delhi for financial assistance. The help and assistance rendered by the officers and field staff of Morni, Pinjore forest division and Haryana Community Forestry Project during field visits are duly acknowledged.

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Table 2. List of species planted in 2005-06.

Name of species	Ranges (number of plants)				HCFP	Total
	Pinjore	Punchkula	Morni	Raipur Rani		
Teak (<i>Tectona grandis</i>)	16000	16630	2660	43500	1500	80290
Khair (<i>Acacia catechu</i>)	14500	75918	49218	167815	72710	80161
Papri (<i>Holoptelia integrifolia</i>)	15250	19452	5230	20535	-	60467
Amla (<i>Emblica officinalis</i>)	38490	3550	9041	31250	-	166702
Harar (<i>Terminalia chebula</i>)	-	-	2748	-	-	2748
Behra (<i>Terminalia belerica</i>)	7175	7950	12865	3004	-	30994
Arjun (<i>Terminalia arjuna</i>)	15340	3700	4220	4060	-	27320
Tatparanga (<i>Oroxylum indicum</i>)	570	-	90	200	-	860
Shisham (<i>Dalbergia sissoo</i>)	4700	2674	-	17710	-	25084
Jamun (<i>Syzygium cumini</i>)	4000	1000	2570	1690	-	9260
Imli (<i>Tamarindus indica</i>)	1370	-	-	-	-	370
Mahua (<i>Madhuca indica</i>)	100	-	-	-	-	100
Ritha (<i>Sapindus mukorossi</i>)	160	-	50	-	-	210
Siwan	150	-	-	-	-	150
Jhingan (<i>Linea coromandelica</i>)	15100	-	-	-	-	15100
Kachnar (<i>Bauhinia variegata</i>)	9555	3900	4825	450	-	18730
Banboo (<i>Dendrocalamus strictus</i>)	43078	4175	516	9095	-	56864
Neem (<i>Azadirachta indica</i>)	600	350	-	800	160	1910
Toon (<i>Toona cedrela</i>)	3700	-	9650	260	-	13610
Eucalyptus	13500	27500	6600	15000	54600	117200
Chir (<i>Pinus roxburghii</i>)	-	-	52340	-	-	52340
Siris (<i>Albizia lebbek</i>)	200	-	3450	-	-	3650
Silver oak (<i>Grevelia robusta</i>)	-	250	2305	-	-	2555
Jatropha (<i>Jatropha curcas</i>)	10600	1488	-	-	3930	16018
Amaltas (<i>Cassia fistula</i>)	740	470	800	-	-	2010
Drek (<i>Melia azedrach</i>)	5420	4050	11971	-	-	21441
Kura (<i>Cassia glauca</i>)	875	-	596	-	-	1471
Kanak Champa (<i>Pterocarpus marsupium</i>)	100	-	-	-	-	100
Chhal (<i>Anogeissus latifolia</i>)	150	-	-	-	-	150
Bel (<i>Aegle marmelos</i>)	52	-	626	-	-	678
Dhak (<i>Butea monosperma</i>)	100	-	-	-	-	100
Kamb	300	-	-	-	-	300
Shahtoot (<i>Morus alba</i>)	110	-	-	-	-	110
Sain (<i>Terminalia tomentosa</i>)	-	-	-	1580	-	150
Bargad (<i>Ficus bengalensis</i>)	-	-	-	05	-	05

Pipal (<i>Ficus religiosa</i>)	-	-	-	35	-	35
Gular (<i>Ficus glomerata</i>)	250	-	-	1050	-	1265
Pilkhan (<i>Ficus infectorious</i>)	-	-	-	465	-	465
Kikar (<i>Acacia nilotica</i>)	-	-	-	-	1500	1500
Simbal (<i>Bombax ceiba</i>)	400	1100	-	-	-	1500
Alestonia (<i>Alestonia scholaris</i>)	-	200	-	-	-	200
Jacaranda (<i>Jacaranda mimosifolia</i>)	-	-	838	-	-	838
Mango (<i>Mangifera indica</i>)	-	-	67	100	-	167
Bottle Brush (<i>Cleistemone lanceolatus</i>)	516	-	-	516	-	-
Willow (<i>Salix alba</i>)	-	110	-	-	-	110

Table 3. Survival of tree plantation activities in Punchkula district of Haryana (2005-06)

Agency	Land category	Scheme	Sample taken	Average survival (%)	Overall survival (%)
Panchkula range (HSFD)	FL	RDF – state scheme	10	86.72	90.63
		RDF – JBIC	30	81.50	
		RP – JBIC	04	97.30	
		RP – state scheme	04	97.00	
Morni range (HSFD)	FL	RDF – state scheme	10	81.91	86.00
		RDF – JBIC	40	85.77	
		RDF – JBIC	55	74.03	
		SP – JBIC (TP)	03	95.05	
Raipur Rani range (HSFD)	FL	RDF – state scheme	10	83.15	85.47
		RDF – JBIC	65	78.37	
		SP – JBIC (TP)	02	90.35	
		RP – state scheme	04	95.80	
		RP – state scheme	04	79.70	
Pinjore range (HSFD)	FL	RDF – JBIC	35	74.70	83.38
		RDF – state scheme	10	83.18	
		Farm Forestry	10	80.90	
		SP – JBIC (TP)	03	83.12	
		RP – JBIC	02	95.00	
HCFP	Panchayat land	CFP	14	80.14	78.10
	Community land	CFP	30	76.06	

HSFD: Haryana State Forest Department, HCFP: Haryana Community Forestry Project

Overall survival percentage of Morni forest division : 86.14

Overall survival percentage of HCFP : 86.14

Overall survival percentage in Panchkula district : 82.12

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Received : 12.5.2011

Accepted: 24.8.2011