

SUMMARY –E.I.A & S.I.A-2016

EIA: Environmental Impact Assessment

SIA: Social Impact Assessment

SARA has raised captive plantations in around 50,000 acres of degraded land of farmers in different districts of Karnataka, Maharashtra and Andhra Pradesh. A number of fast growing species such as *Eucalyptus teretecornis*, *E. camaldulensis*, *E. pellita*, *E. urophylla*, *Eucalyptus clones*, *Acacia hybrid* and *Leucaena leucocephala* have been introduced. This activity emphasises environmental improvement and in the process provide benefit to rural communities in improving their social and economic status. With this background, a study was undertaken on the 'Regional Impact of plantations raised mostly in Uttar Kannad, Belgaum, Koppal, Dharwad districts of Karnataka, Kolhapur district of Maharashtra and Nellore district of A.P. The study included the special features of plantations, their economic impact with emphasis on growing stock & productivity and ecological & social impact. The overall assessment of regional impact of SARA plantations is presented in the tabulated form as below:

Overall assessment of SARA plantations:

S. No.	Impact Parameters	Before 2006	As on Today 2016
1.Social Impact:			
a.	Encroachment	Rampant	>50,000 ha (worth Rs 300 lacs) prevented from encroachment.
b.	Generation of Employment	Negligible	-750 person days are created for 01 ha plantation. -21800 person days are created to grow 31 lacs seedlings in nursery.
c.	Firewood availability	Collected from natural forest	25,000 t/year of fuel wood collected from SARA plantations thus Lopping and felling of natural trees prevented.
d.	Leaf litter for area ca gardens and paddy lands	Leaf manure was collected from natural forest	Hundred of tonnes of leaf litter are now available from SARA plantations.
e.	Life style of people	-	There is drastic change with more self-respect and improvement in education & economic level.

2. Economic Impact			
a.	Raw material	Entirely dependent on natural forest	SARA has achieved > 20 % self-sufficiency in raw material to cater the near by paper mills.
b.	Fire wood i. To local villagers ii. To Urban & semi urbanites	Available from natural forest Available from natural forest	Available free of cost from SARA plantation 12.5% of wood to KFD at concessional rate
c.	Leaf litter	Not available	Available in plenty.
d.	Economic position	People were deprived of essential facilities.	Substantial improved with having facilities like vehicles, entertainment facilities and others.
e.	Economic productivity of land	3 t/ha	>70 t/ha
f.	Economic benefits of indirect effect	Not much	Value addition in term of indirect benefit is high

2. Ecological impact			
a.	Biological diversity	Less	Significantly improved due to protection of adjoining shoals and Natural forest. SARA plantation act as Buffer zones.
b.	Wild life	Scare	According to Mr. Harrison a wildlife expert UK 19 species of mammals, 115 species of birds and many reappeared in these plantations.
c.	Original vegetation	Proven hacking and lopping	Plantations have now protected old growth and further committed their growth.
d.	Soil and water conservation	There was no check	Soil erosion brought by 80% and moisture conserved by 70%.
e.	Humidity and temperature	Generally hot and dry	Generally cool and humid
f.	Water table level	declined	Sustained despite a number of new wells dug
g.	Natural regeneration	No regeneration	Local forest species like <i>Alianthus malabarica</i> , <i>Toona ciliate</i> , <i>Acrocarpus</i> are naturally regenerating in wet zone Teak and Sandal in dry zone
h.	Natural forest density	About 50%	About 70 %

	and cover		
i.	Eupatorium menace	Ubiquitous	Controlled under plantations

Negative Impacts before plantation in the area.

1. Illegal felling in forest area by local people to meet out the domestic demand of fuel wood and small timber.
2. Excessive grazing on wasteland/marginal land suppresses the regeneration of natural vegetation.
3. Loss of fertile soil due to undulating topography of the land in heavy rainfall area.
4. No source of adding organic matter in the soil, thus, poor fertile status of the soil in the area.
5. No opportunity of employment in the area resulting into migration of rural population to urban area.

Negative Impacts of SARA plantation:

1. The sole plantation of Eucalyptus likely to create the monoculture and there may likely to be fear of attack of the pest or diseases in the area.
2. Non-availability of multipurpose tree species resulting in to increasing price of other species and illegal felling from adjoining forest area.
3. Monocropping of eucalyptus also do not support the favorable habitat for big wild animals.
4. Slow decomposition of leaf litter from Eucalyptus species.

Mitigation to overcome the negative impacts:

1. The suitable mix preferably multipurpose tree species are being planted according to suitability of site on the wasteland/barren land (plantation of other species like Acacia, Leucaena and Leguminous tree species) in the scattered patches.
2. Incorporation of microorganism in to soil to increase the rate of decomposition of litter fall.

3. Intercropping of leguminous crops such as Stylo grass species are grown in the initial years.

Positive impacts of SARA plantation:

1. Addition of organic manure through litter fall improves the fertility of soil.
2. Creates the alternative source of fuel wood and small timber from the plantation and fodder for livestock.
3. Regeneration of other species is being promoted which attract the wild life and other fauna also. (Act as buffer zone)
4. Improved the microclimate of the area, which helps in growing the crops with full productivity.
5. Assured income from the plantation, therefore, minimize the risk of crop failure in adverse conditions.
6. Helps to create the employment opportunity around the year, which stops the migration of the population.
7. Extra income from the wasteland/barren land, which helps to improve the socio-economic conditions of the farmers.

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ASSOC. DIRECTOR (SARA)