

EXPLORING THE POSSIBILITIES OF DOUBLING FARMERS INCOME BY INTEGRATING DIFFERENT AGRO FORESTRY MODELS WITH SMALL RUMINANT PRODUCTION

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Abstract: A study was carried out for exploring the possibilities of doubling the farmers' income by integrating different agro forestry models with small ruminant production. Three types of agro-forestry models were established viz. Silviculture (Type I), Horticulture (Type II) and Horticulture (Type III) each model with an area of one acre of land in the farmers field. The fodder tree saplings were planted at a space rate of 8 X 8'. Understorey pasture grass was established at a seed rate of *Cenchrus ciliaris* (2kg), Guinea grass (0.5 kg) and *Stylohamata* (1.5 kg) and *Styloscabra* (1.5 kg). The horti-plants saplings were planted at a spacing about 25' X 25'. The economics of the models under irrigated condition were studied for cost of establishment, expected income on integration with small ruminant component and additional income through horti-plants. Based on the biomass yield and anticipated integration with small ruminant component (16-20 sheep), the expected income in the three models were Rs.36,000/-Rs.32,400/- and Rs.28,800/- respectively for type I, II and III. The expected additional income from the horti plants from the fourth year was Rs. 18,000/- for type II and type III models. Hence it was observed that for effective utilization of available lands, establishment of horti-pasture and horti-silvi-pasture along with sheep production provided additional income

Keywords: Agro-froestry systems, Small Ruminant Integration, Cost economics.

Introduction

Sheep and goat farming is a promising livelihood activity for many farmers in Tamil Nadu. According to latest livestock census (2011) small ruminant population is highly concentrated in southern districts of Tamil Nadu. These areas are also significantly the native tract for many of sheep and goat breeds of Tamil Nadu. Effective utilization of available land for successful agriculture and livestock farming is highly essential. Since sheep and goat farming is now becoming a successful enterprise, it is necessary for the research to be oriented towards providing possible ways to enhance or double the farmers income by effective utilization of available resources. Hence, a study was carried out with the objective of exploring the possibilities of doubling the farmers' income by integrating different agro forestry models with small ruminant production.

Materials and Methods

Three types of agro-forestry models were established *viz.* Silviculture (Type I), Horticulture (Type II) and Horticulture (Type III) each model with an area of one acre of land in the farmers field.

<u>Agroforestry Model</u>	<u>Fodder Trees</u>	<u>Fodder crops</u> (Grass and legumes)	<u>Hortiplants</u>
Silviculture	<i>Gliricida</i> &	Guinea grass	-
	<i>Leuceana leucocephala</i>	<i>Cenchrusciliaris</i>	
		<i>Stylo hamata</i> and <i>Stylo scabra</i>	
Horti pasture		Guinea grass	Mango
		<i>Cenchrus ciliaris</i>	
		<i>Stylo hamata</i> and <i>Stylo scabra</i>	
Horticulture pasture	<i>Gliricida</i> &	Guinea grass	Mango
	<i>Leuceana leucocephala</i>	<i>Cenchrus ciliaris</i>	
		<i>Stylo hamata</i> and <i>Stylo scabra</i>	

The fodder tree saplings were planted at a space rate of 8 X 8'. Understorey pasture grass was established at a seed rate of *Cenchrusciliaris* (2kg), Guinea grass (0.5 kg) and *Stylohamata* (1.5 kg) and *Styloscabra* (1.5 kg). The horti-plants saplings were planted at a spacing about 25' X 25'. The economics of the models under irrigated condition were studied for cost of establishment, expected income on integration with small ruminant component and additional income through horti-plants.

Results and Discussion

The total expenditure for the establishment and expected revenue from respective agro forestry models are furnished in the Table 1.

Table.1. Expenditure for establishment and expected revenue from different Agroforestry Models (per acre)

Details of expenditure for establishment and revenue from different Agroforestry Models	Silvi Pasture (Rs.)	Horti Pasture (Rs.)	Horticulture Pasture (Rs.)
Land cleaning, levelling, bund formation against slope and ploughing	7500	7500	7500
Pit digging	1332	1080	1980
Production cost for fodder seedlings	1332	-	900

Production cost for Horti crops seedlings	-	2880	2880
Basal manure	3200	4000	4000
Seed Cost for grass and legumes*	1000	1000	1000
Total expenditure for establishment	14364	16460	18260
Expected income through animal component (irrigated area) (holding capacity 16-20 sheep)	36000	32400	28800
Expected additional income from Horti plants from 4 th year onwards	-	18000	18000

**Cenchrus* (2Kg) + *Stylo hamata* (1.5Kg) + *Sylo scabra* (1.5Kg) + *Guinea grass* (0.5kg)

The total expenditure for establishing Silvipasture, Hortipasture and Hortisilvipasture types of agro-forestry models in one acre of land were Rs.14,364, Rs.16,460 and Rs.18260 respectively. The establishment cost included land cleaning, land levelling, bund formation, ploughing, pit digging, production of fodder seedlings, basal manure and seed cost of grasses and legumes. Based on the biomass yield and anticipated integration with small ruminant component (16-20 sheep), the expected income in the three models were Rs.36,000/- Rs.32,400/- and Rs.28,800/- respectively for type I, II and III. The expected additional income from the horti plants from the fourth year was Rs. 18,000/- for type II and type III models. Hence it was observed that for effective utilization of available lands, establishment of horti-pasture and horti-silvi-pasture along with sheep production provided additional income Ramanaet al. (2000).

Conclusion

Establishment of horti-pasture and horti-silvi-pasture by effective utilization of available lands along with sheep production provided additional incomes in turn increased the socio economic status of the farming community.

References

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