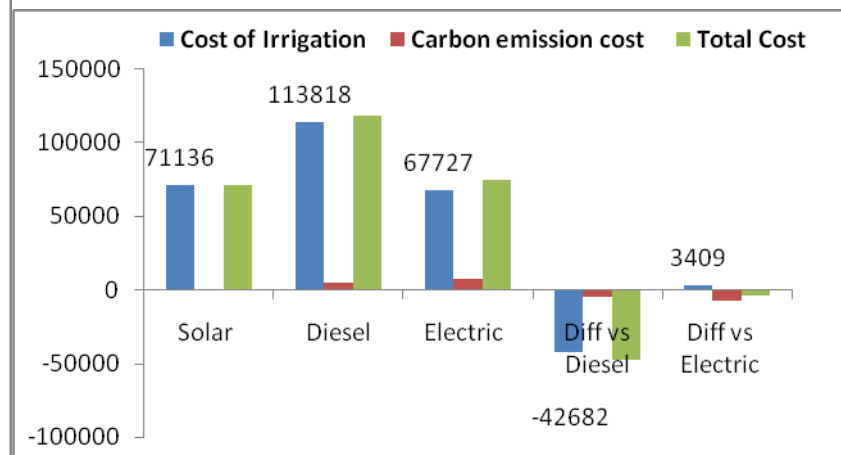
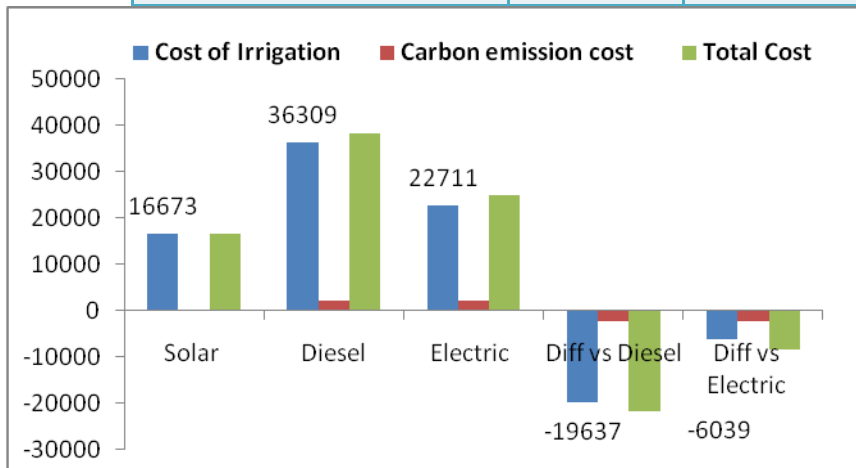


ANNEXURE - 13

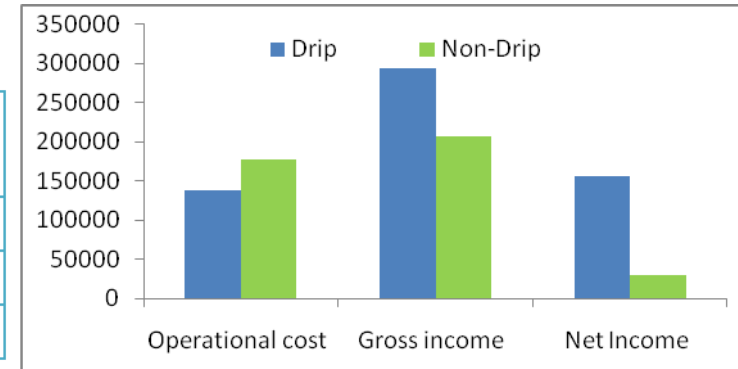
Economic Evaluation of Solar Powered Pumping Difference in Cost of Irrigation (Rs. per ha for 5 HP)

Particulars	Surface irrigation			Difference between Solar &	
	Solar	Oil engine	Electric	Oil engine	Electric pumps
Paddy					
I. Cost of Irrigation	16673	36309	22711	-19637	-6039
II. Carbon emission cost	0	2097	2276	-2097	-2276
Total Cost / Benefit	16673	38406	24987	-21733	-8315
Sugarcane					
I. Cost of Irrigation	71136	113818	67727	-42682	3409
II. Carbon emission cost	0	5032	7283	-5032	-7283
Total Cost / Benefit	71136	118849	75010	-47713	-3874



Difference in Net Income in Sugarcane (Rs. per ha)

Sugarcane - Drip	Solar Pumping System		Difference over drip
	Drip	Non-Drip	
operational cost	138018	177561	-39543
Gross income	294354	207002	87352
Net Income	156336	29441	126895



Constraints

- High initial cost of investment
- No back up facility for storing electricity
- No back up facility for storing water
- Damage (panel, inverter cables) by cyclone, wind, physical damage / No follow up or service after installation / damage to system
- Solar system will work and could be able to lift water up to 150m depth Pump locations wherever, ground water table depletes beyond 150m during summer / drought seasons, the system could not deliver water.

Suggestions

- Facility for storing water may be provided through surface storage tank / farm ponds with and poly ethylene cover or aluminum sheets to avoid evaporation losses at subsidized cost.
- Back up facility for storing electricity can be provided at subsidized cost.