FREE POWER TO AGRICULTURE IN ANDHRA PRADESH - IMPACT

Y. SOUJANYA

Abstract: Bharat is a country of villages and the farmer is the backbone. Agriculture sector creates employment to large number. Moreover, agriculture is more dependent on the cycle of monsoons. Now, the rains are unpredictable. This might be due to ecological imbalances and for many other reasons. The farmer is being trapped in a debt cycle. To support the farming community, in 2004 the then Govt. of Andhra Pradesh started giving power free of cost to farmers. A attempt is made in this paper to analyse the impact of free power on the welfare of the farming community and the problems faced by them in power supply.

Keywords : Agriculture , ecological imbalances , power supply.

Introduction : The electricity subsidy for the Andhra Pradesh farmers, particularly when it was extended as totally free, continues to be a debatable issue. A part of the electricity cost was recovered from the farmers on the per unit basis of consumption. It was changed to horsepower of the motor irrespective of the consumption for the convenience (economy) in collection of the amount. There was also an occasional recovery in small amounts. Thus the electricity subsidy for agriculture was a small amount to begin with but assumed gigantic proportion over time as its consumption increased. The number of electric tubewells has increased, the area under rice, which means that major irrigation requirement has increased, while the water table has gone down, which means more power is needed to draw out the same quantity of water and the cost of electricity supply has also increased. All these issues are inter-related; and, the free electricity to the farm sector is often quoted as the main precursor to the increase in the rice area, over-exploitation of groundwater and as an obstacle to diversification. The main theme of the paper is to analyse comprehensively the extent and impact of electricity subsidy on the farm economy and the possibilities of restructuring the incentives to contain the electricity subsidy for moving towards achieving the long term goals of efficiency and resource conservation.

Questionnaire has been designed to get the exact views of the farmers on problems related to power supply and free power to agriculture.

STUDY AREA: The study is limited to farmers in the jurisdiction of APEPDCL and APSPDCL (two power distribution companies in Andhra Pradesh). 75 Farmers in West Godavari district region under APEPDCL and 75 Farmers in Krishna district region under APSPDCL.

Table 1 Phase power supply is not extended to rural areas on par with urban areas

Serial No	Choice of response	Number of Respondents	Percentage
01	Strongly Agree	34	23
02	Agree	51	34
03	Undecided	35	23
04	Disagree	18	12
05	Strongly Disagree	12	08
	Total:	**150**	**100**

Weighted Average Mean Score = 3.51

Table-I shows the opinions of sample farmers on the statement-"3 phase power supply is not extended to rural areas on par with urban areas". Among the total sample farmers, majority of them who accounts for 34 percent agreed to the statement. Those who follow it and who account for 23 percent strongly agreed to the statement. An equal number of people are undecided. In the remaining sample, farmers who disagreed are relatively more than those who strongly disagreed to the statement. The overall weighted average mean score stands at 3.51. From the above analysis, it can be concluded that 3 phase power supply is not extended to rural areas on par with urban areas.

Table 2: Free power is mostly being availed by large and medium farmers

Serial No	Choice of response	Number of Respondents	Percentage
01	Strongly Agree	12	08
02	Agree	30	20
03	Undecided	12	08

04	Disagree	57	38
05	Strongly Disagree	39	26
	Total:	**150**	**100**

Weighted Average Mean Score = 2.44

Table-2 reveals the opinions of farmers on the statement-"Free power is mostly being availed by large and medium farmers". Among the total sample farmers, majority of them who accounts for 38 percent disagreed to the statement. Those who follow it and who account for 26 percent strongly disagreed to the statement. In the remaining sample, farmers who agreed are relatively more than those who strongly disagreed and undecided to the statement. The overall weighted average mean score stands at 2.44. From the above analysis, it can be concluded that free power supply is not availed by large and medium farmers.

Table 3: Timings of power supply to agricultural services are inconvenient

Serial No	Choice of response	Number of Respondents	Percentage
01	Strongly Agree	28	19
02	Agree	66	44
03	Undecided	24	16
04	Disagree	30	20
05	Strongly Disagree	02	01
	Total:	**150**	**100**

Weighted Average Mean Score = 3.59

Table-3 presents the opinions of farmers on the statement-"Timings of power supply to agricultural services are inconvenient". Among the total sample farmers, majority of them who accounts for 44 percent agreed to the statement. Those who follow it and who account for 20 percent disagreed to the statement. In the remaining sample, farmers who are strongly agreed are relatively more than those who are undecided and strongly disagreed to the statement. The overall weighted average mean score stands at 3.59. From the above analysis, it can be concluded that timings of power supply to agriculture services are inconvenient.

Table 4: Maintenance of agricultural feeders is not on par with other feeders

Serial No	Choice of response	Number of Respondents	Percentage
01	Strongly Agree	24	16
02	Agree	66	44
03	Undecided	33	22
04	Disagree	25	17
05	Strongly Disagree	02	01
	Total:	**150**	**100**

Weighted Average Mean Score = 3.57

Table-4 denotes the opinions of farmers on the statement-"Maintenance of agricultural feeders is not on par with other feeders". Among the total sample farmers, majority of them who accounts for 44 percent agreed to the statement. Those who follow it and who account for 22 percent are undecided. In the remaining sample, farmers who disagreed are relatively more than those who strongly agreed and strongly disagreed to the statement. The overall weighted average mean score stands at 3.57. From the above analysis, it can be concluded that the maintenance of agriculture feeders is not on par with other feeders.

Table 5: Agricultural consumers cannot demand quality supply as they are getting power freely

Serial No	Choice of response	Number of Respondents	Percentage
01	Strongly Agree	05	03
02	Agree	17	11
03	Undecided	17	11
04	Disagree	60	41
05	Strongly Disagree	51	34
	Total:	**150**	**100**

Weighted Average Mean Score = 2.1

Table-5 indicates the opinions of farmers on the statement-"Agricultural consumers cannot demand quality supply as they are getting power freely". Among the total sample farmers, majority of them who accounts for 41 percent disagreed to the statement. Those who follow it and who account for 34 percent strongly disagreed to the statement. It is also noticed that, farmers who agreed and who are undecided are equal in number. The remaining few sample respondents strongly agreed to the statement. The overall weighted average mean score stands at 2.69. From the above analysis, it can be concluded that agricultural consumers can demand quality as they are getting it freely power.

Table 6: Accidents have increased due to supply of power during night times

Serial No	Choice of response	Number of Respondents	Percentage
01	Strongly Agree	06	04
02	Agree	24	16
03	Undecided	46	31
04	Disagree	65	43
05	Strongly Disagree	09	06
	Total:	**150**	**100**

Weighted Average Mean Score = 2.69

Table-6 throws light on the opinions of farmers on the statement-"Accidents have increased due to the supply of power during night times". Among the total sample farmers, majority of them who accounts for 43 percent disagreed to the statement. Those who follow it and who account for 31 percent are undecided. In the remaining sample, farmers who agreed are relatively more than those who strongly disagreed and strongly agreed to the statement. The overall weighted average mean score stands at 2.69. From the above analysis, it can be concluded that accidents have increased due to the supply of power during night times.

Table 7: Accidents are mainly due to substandard equipment and unsafe practices

Serial No	Choice of response	Number of Respondents	Percentage
01	Strongly Agree	15	10
02	Agree	67	45
03	Undecided	38	25
04	Disagree	30	20
05	Strongly Disagree	--	--
	Total:	**150**	**100**

Weighted Average Mean Score = 3.90

Table-7 shows the opinions of farmers on the statement-"Accidents are mainly due to substandard equipment and unsafe practices". Among the total sample farmers, majority of them who accounts for 45 percent agreed to the statement. Those who follow it and who account for 25 percent are undecided. In the remaining sample, farmers who disagreed are relatively more than those who strongly agreed to the statement. The overall weighted average mean score stands at 3.90. From the above analysis, it can be concluded that accidents are mainly due to substandard equipment and unsafe practices.

Table 8: Unauthorised persons are attending to electrical complaints

Serial No	Choice of response	Number of Respondents	Percentage
01	Strongly Agree	09	06
02	Agree	55	37
03	Undecided	50	33
04	Disagree	34	23
05	Strongly Disagree	02	01
	Total:	**150**	**100**

Weighted Average Mean Score = 3.23

Table-8 reveals the opinions of farmers on the statement-"Unauthorized persons are attending to electrical complaints". Among the sample farmers, majority of them who accounts for 37 percent agreed to the statement. Those who follow it and who account for 33 percent are undecided. In the remaining sample, farmers who disagreed are relatively more than those who strongly agreed and strongly disagreed to the statement. The overall

weighted average mean score stands at 3.23. From the above analysis, it can be concluded that unauthorized persons are attending to electrical complaints.

Table 9: There is difficulty in getting new power connection for agriculture

Serial No	Choice of response	Number of Respondents	Percentage
01	Strongly Agree	60	40
02	Agree	67	45
03	Undecided	18	12
04	Disagree	05	03
05	Strongly Disagree	--	--
	Total:	**150**	**100**

Weighted Average Mean Score = 4.21

Table-9 presents the opinions of farmers on the statement-"There is difficulty in getting new power connection for agriculture". Among the total sample farmers, majority of them who accounts for 45 percent agreed to the statement. Those who follow it and who account for 40 percent strongly agreed to the statement. In the remaining sample, farmers who are undecided are relatively more than those who disagreed to the statement. The overall weighted average mean score stands at 4.21. From the above analysis, it can be concluded that there is difficulty in getting new power connection for agriculture.

Table 10: Replacement of a failed Distribution Transformer (DTR) is a difficult task

Serial No	Choice of response	Number of Respondents	Percentage
01	Strongly Agree	36	24
02	Agree	91	61
03	Undecided	18	12
04	Disagree	05	03
05	Strongly Disagree	--	--
	Total:	**150**	**100**

Weighted Average Mean Score = 4.05

Table-10 denotes the opinions of farmers on the statement-"Replacement of a failed distribution transformer is a difficult task". Among the total sample farmers, majority of them who accounts for 61 percent agreed to the statement. Those who follow it and who account for 24 percent agreed to the statement. In the remaining sample, farmers who are undecided are relatively more than those who disagreed to the statement. The overall weighted average mean score stands at 4.05. From the above analysis, it can be concluded that replacement of a failed distribution transformer is a difficult task.

Table 11: Staff are not attending to supply related problems

Serial No	Choice of response	Number of Respondents	Percentage
01	Strongly Agree	20	13
02	Agree	67	45
03	Undecided	27	18
04	Disagree	33	22
05	Strongly Disagree	03	02
	Total:	**150**	**100**

Weighted Average Mean Score = 3.54

Table-11 indicates reveals the opinions of farmers on the statement-"staff are not attending to supply related problems". Among the total sample farmers, majority of them who accounts for 45 percent agreed to the statement. Those who follow it and who account for 22 percent disagreed to the statement. In the remaining sample, farmers who are undecided are relatively more than those who strongly agreed and strongly disagreed to the statement. The overall weighted average mean score stands at 3.54. From the above analysis, it can be concluded that staff are not attending to supply related problems.

Table 12: Agriculture productivity increased due to the provision of free power

Serial No	Choice of response	Number of Respondents	Percentage

01	Strongly Agree	06	04
02	Agree	34	23
03	Undecided	08	05
04	Disagree	84	56
05	Strongly Disagree	18	12
	Total:	**150**	**100**

Weighted Average Mean Score = 2.50

Table-12 throws light on the opinions of farmers on the statement-"Agriculture productivity increased due to the provision of free power". Among the total sample farmers, majority of them who accounts for 43 percent agreed to the statement. Those who follow it and who account for 56 percent disagreed to the statement. Those who follow it and who account for 23 percent agreed to the statement. In the remaining sample, farmers who strongly disagreed are relatively more than those who are undecided and strongly agreed to the statement. The overall weighted average mean score stands at 2.50. From the above analysis, it can be concluded that agriculture productivity did not increase due to the provision of free power.

Table 13: Product Quality decreased due to provision of free power

Serial No	Choice of response	Number of Respondents	Percentage
01	Strongly Agree	12	08
02	Agree	25	17
03	Undecided	30	20
04	Disagree	65	43
05	Strongly Disagree	18	12
	Total:	**150**	**100**

Weighted Average Mean Score = 2.65

Table-13 indicates the opinions of sample farmers on the statement-"Product quality decreased due to provision of free power". Among the total sample farmers, majority of them who accounts for 43 percent disagreed to the statement. Those who follow it and who account for 20 percent are undecided. In the remaining sample, farmers who agreed to the statement are relatively more than those who strongly disagreed and agreed to the statement. The overall weighted average mean score stands at 2.65. From the above analysis, it can be concluded that product quality does not decrease due to the provision of free power.

Table 14: Burden of loans decreased due to the provision of free power

Serial No	Choice of response	Number of Respondents	Percentage
01	Strongly Agree	08	05
02	Agree	21	14
03	Undecided	30	20
04	Disagree	64	43
05	Strongly Disagree	27	18
	Total:	**150**	**100**

Weighted Average Mean Score = 2.46

Table-14 shows the opinions of farmers on the statement-"Burden of loans decreased due to the provision of free power". Among the total sample farmers, majority of them who accounts for 43 percent disagreed to the statement. Those who follow it and who account for 20 percent are undecided. In the remaining sample, farmers who strongly disagreed are relatively more than those who agreed and strongly agreed to the statement. The overall weighted average mean score stands at 2.46. From the above analysis, it can be concluded that burden of loans did not decrease due to the provision of free power.

Table 15: Power is being misused for non-agricultural purposes on a large scale due to free supply of power

Serial No	Choice of response	Number of Respondents	Percentage
01	Strongly Agree	55	37
02	Agree	63	42
03	Undecided	06	04

04	Disagree	18	12
05	Strongly Disagree	08	05
	Total:	**150**	**100**

Weighted Average Mean Score = 3.93

Table-15 reveals the opinions of farmers on the statement-"Power is being misused for non-agricultural purposes due to free supply of power". Among the total sample farmers, majority of them who accounts for 42 percent agreed to the statement. Those who follow it and who account for 37 percent strongly agreed to the statement. In the remaining sample, farmers who disagreed are relatively more than those who strongly disagreed and undecided. The overall weighted average mean score stands at 3.93. From the above analysis, it can be concluded that power is being misused for non-agricultural purposes on a large scale due to the supply of free power.

Table 16: Decrease in ground water level is due to free power

Serial No	Choice of response	Number of Respondents	Percentage
01	Strongly Agree	28	19
02	Agree	68	45
03	Undecided	18	12
04	Disagree	25	17
05	Strongly Disagree	11	07
	Total:	**150**	**100**

Weighted Average Mean Score = 3.51

Table-16 presents the opinions of farmers on the statement-"Ground water level decreased due to the use of free power". Among the sample farmers, majority of them who accounts for 45 percent agreed to the statement. Those who follow it and who account for 19 percent strongly agreed to the statement. In the remaining sample, farmers who disagreed are relatively more than those who are undecided and strongly disagreed to the statement. The overall weighted average mean score stands at 3.51. From the above analysis, it can be concluded that the decrease in ground water is due to free use of power.

Table 17: Power is being wasted as it is available freely

Serial No	Choice of response	Number of Respondents	Percentage
01	Strongly Agree	55	37
02	Agree	47	31
03	Undecided	09	06
04	Disagree	24	16
05	Strongly Disagree	15	10
	Total:	**150**	**100**

Weighted Average Mean Score = 3.69

Table-17 denotes the opinions of farmers on the statement-"Power is being wasted as it is available freely". Among the total sample farmers, majority of them who accounts for 37 percent strongly agreed to the statement. Those who follow it and who account for 31 percent agreed to the statement. In the remaining sample, farmers who disagreed are relatively more than those who strongly disagreed and undecided to the statement. The overall weighted average mean score stands at 3.69. From the above analysis, it can be concluded that power is being wasted as it is available freely.

Table 18: Solar pumpsets are useful to farmers where electrical lines are not available

Serial No	Choice of response	Number of Respondents	Percentage
01	Strongly Agree	54	36
02	Agree	58	39
03	Undecided	20	13
04	Disagree	18	12
05	Strongly Disagree	--	--
	Total:	**150**	**100**

Weighted Average Mean Score = 3.99

Table-18 indicates the opinions of farmers on the statement-"Solar pump sets are useful to farmers where electrical lines are not available". Among the total sample farmers, majority of them who accounts for 39 percent agreed to the statement. Those who follow it and who account for 36 percent strongly agreed to the statement. In the remaining sample, farmers who are undecided are relatively more than those who disagreed to the statement. The overall weighted average mean score stands at 3.99. From the above analysis, it can be concluded that solar pump sets are useful to farmers where electrical lines are not available.

Table 19: Solar pumpsets are useful to small farmers who cannot afford huge amount for electrical lines and transformers

Serial No	Choice of response	Number of Respondents	Percentage
01	Strongly Agree	39	26
02	Agree	85	57
03	Undecided	17	11
04	Disagree	09	06
05	Strongly Disagree	--	--
	Total:	**150**	**100**

Weighted Average Mean Score = 4.03

Table-19 throws light on the opinions of farmers on the statement-"Solar pump sets are useful to small farmers who cannot afford huge amount for electrical lines and transformers". Among the total sample farmers, majority of them who accounts for 57 percent agreed to the statement. Those who follow it and who account for 26 percent strongly agreed to the statement. In the remaining sample, farmers who are undecided are relatively more than those who disagreed to the statement. The overall weighted average mean score stands at 4.03. From the above analysis, it can be concluded that solar pump sets are useful to small farmers who cannot afford huge amount for electrical lines and transformers.

Table 20: Do you prefer metering system?

Serial No	Choice of response	Number of Respondents	Percentage
01	Yes	--	--
02	No	117	78
03	Can't say	33	22
	Total:	**150**	**100**

Table-20 shows whether sample farmers are interested in metering system or not. Among the sample farmers, majority of them who accounts for 78 percent is not interested in metering system. All the remaining sample farmers who constitute 22 percent cannot say anything. Therefore, it can be concluded that majority of the sample respondents is not interested in metering system.

Conclusion : Groundwater-based irrigation farming is the engine of rural India's economic productivity, with very major multipliers in rural agri-businesses, produce and service markets, labor generation and livelihoods. State governments, utilities, and farmers urgently need to address the groundwater-energy nexus through a set of politically and financially feasible and socially

acceptable alternatives centered on the direct delivery of power subsidy to farmers. This report provides a clear rationale and evidence for the way forward, and has been developed through a review of international best practices and broadly vetted through a stakeholder consultation process.

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Y. Soujanya
M.B.A, M.PHIL, Associate professor. Sir. C R Reddy College ,
P.G. Management Studies. , Eluru-534006.