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SOCIO-ECONOMIC ASPECTS IN COST OF PRODUCTION FOR WELL IRRIGATED AND NON-WELL IRRIGATED FARMERS

Krishnan Lakshmanan[1]

[1]Freelance Data Verifier, AC-Nielsen India Pvt Ltd, Coimbatore, Tamil Nadu, India.

ABSTRACT

The study convey that economic and environmental aspect to explore the socio-economic aspect well and non-well irrigation. The agriculture sector in India uses nearly 85% of the available water though the irrigation efficiency is only 20 to 50%1 (Thiru. Sandeep Saxena, I.A.S., Agricultural Production Commissioner & Secretary to Government , Agriculture Department., Tmt. R. Vasuki, I.A.S., Executive Director i/c "Tamilnadu state perspective & strategic plan" 11th five year plan) . Average irrigation efficiency of irrigation system, at present, is very low (canal irrigation system < 40% & ground water irrigation system 60%). Significant amount of water is wasted primarily due to inefficient use of irrigation water. This study discussed systematic and proportionate random sampling method by using the value of production, cost per acre, revenue per acre, profit per acre and it can be proposed that well famers yearn more income better than non-well farmers. Well irrigated and non-well irrigated farmers.

KEYWORDS: *Well irrigated, agriculture, irrigation, rainfall, water access*

INTRODUCTION

Tamilnadu is one of the water starved states in India. Tamilnadu, which accounts for 7% of population (62.11 m) and 4% of land area (12.99 m.ha) of the country, is endowed with only 3% of water resources in India. The average annual rainfall of the State is 911.6 mm. The State with 79 reservoirs and 39202 tanks has the total surface water potential of 853 TMC. The total annual ground water recharge potential in the state is 790 TMC. Thus taking in to account of both the sources, the total water potential is estimated at 1643 TMC. Almost the entire surface water potential in the state has already been tapped and there is no scope for embarking any new major / medium projects. This resulted in tapping of ground water potential on an increasing scale, and 86% of ground water potential has already been tapped. The state's irrigation potential in terms of per-capita is only about 0.08 ha, when compared to the all India average of 0.17 ha. The State Government has contemplated to achieve the targeted growth of 4% under agriculture and allied sector and 8% in the overall economic growth in the XI Plan. (**Sandeep Saxena, I.A.S., and R.Vasuki, I.A.S.,**)

Groundwater is a crucial productive resource in both Tamil Nadu and India. For the rural agricultural population it has almost replaced land as a determinant of social and economic status. Increasing groundwater access has undermined maintenance of tank irrigation systems and other surface sources. In the process it has shifted the determinants of water access away from communities and into the hands of individuals. While access to groundwater has never been fully equitable due to natural variability in resource conditions, landownership, wealth and other factors, inequity is growing. Patterns of

inequity are socially embedded and exacerbated by factors such as inheritance patterns. In many cases, the ownership of individual wells is now divided among many people. This can be a source of conflict and often results in differential access between dominant owners and others who are less capable of exercising their partial ownership rights. Competition and conflict are increasing in the face of pollution and substantial water level declines. Falling water levels are leading to competitive deepening and in many areas large financial losses, as existing wells become dry or new, unproductive, wells are drilled. In many areas, shallow dug wells have gone dry and farmers now drill multiple bores alongside or within existing dug wells. Water level drops are also leading to the decline of surface sources, such as the traditional "spring" channels used to divert the sub-surface flow in streams. (**S.Janakarajan, Marcus Moench., 2006**)

The history of well irrigation during the colonial period is a somewhat neglected one. This is in contrast to the study of canal-systems, which dominates the literature for that period. Wells, however, provided the chief form of irrigation in many parts of India in the pre-colonial era, as they do again today. It was only during the colonial period and early post-colonial period that they suffered a temporary and only partial. Eclipse. It was estimated at the beginning of the 20th century that whereas government-owned canals provided water for about 41 per cent of the irrigated land of British India, wells provided for about 30 percent of the whole. The irrigated area of the rather different land-mass covered by the new state of India showed government canals covering 34.01 per cent of the total, wells 27.49 per cent. Well-irrigated land exceeded government-canal irrigated land from 1971-72 onwards. (**David Hardiman., 1998**)

REVIEW OF LITERATURE

AntonetteD' Sa,(2010)., Found that Irrigation in India has become increasingly dependent on groundwater, with the consequent impacts on groundwater availability and on energy use for its extraction. Efforts have been made over the past three decades – from local pilot projects, to state-wide programmer – towards improving the efficiency with which groundwater is pumped, and, more recently, for its re-charge and conservation. In this report, we have compiled the information available, from published reports and papers as well as news bulletins, on the field activities and studies carried out with respect to efficient groundwater extraction and use for agriculture. Numerous programmers' have been included, to the extent that information has been obtainable, but most are on the replacement/retrofitting of electrically-powered irrigation pump sets. This compilation has two purposes. Firstly, we are beginning a repository on such reports that is publicly accessible and can be expanded with more documents. As importantly, we intend eliciting lessons from past experiences that would benefit future programmer, thereby improving groundwater-based irrigation and conservation of energy and water.

Janakarajan. S and Marcus moench (2006)., Discussed that since in many states surface water sources have been utilized fully, there has been a massive expansion of groundwater irrigation. With the progressive decline in the water table, farmers have resorted to the competitive deepening of wells. This has resulted in increased costs of well irrigation and in a new inequity among the well-owners and between well-owning and non-well-owning farmers. Similarly, urban water demands have increased tremendously for domestic and industrial purposes. There has been an ever-increasing demand for water, there has hardly been any effort to develop infrastructure to treat used water. This contributes to the pollution of the existing water stock. Therefore, water resources are under severe threat not only because of the ever-increasing demand and competing demand (from various sectors), but also because of the diminishing quality caused by discharge of untreated domestic sewage and industrial effluents. The main objective of this study is to show how the degradation of the groundwater resource base through over-extraction and pollution contributes to inequity, conflicts, competition and, above all, to indebtedness and poverty.

STATEMENT OF THE PROBLEM

Many states surface water sources have been utilised fully, there has been a massive expansion of groundwater irrigation. With the progressive decline in the water, farmers have resorted to the competitive deepening of wells. This has resulted in increased costs of well irrigation and in a new inequity among the well-owners and between well-owning and non-well-owning farmers. Similarly, there has been an ever-increasing demand for water, there has hardly been any effort to develop infrastructure to treat used water.

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There is the contrast between food requirements and food production due to declining of ground water level sources in general. Water for irrigation and other uses is becoming more and more valuable due to the increasing cost of irrigation cost of projects and a limited supply of water of good quality. Therefore the farmers must learn how to prevent an excess use of water and to prevent the degradation of the lad and bring about its improvement for maximum crop production. Hence this study will compare the production, cost, revenue, profit and returns on investment between the well irrigation farmers and non-well irrigation farmers in Dindigul district.

OBJECTIVES

- To explore the social aspects of well irrigated and non-well irrigated farmers.
- To estimate Cost of Production the well irrigated farmers and non-well irrigated farmers.
- To assess the profit and returns on investment by well irrigated farmers and non well irrigated farmers.

HYPOTHESIS

- There is significant difference between the equally earned by the well Irrigated and non-well Irrigated Farmers with respect to ROI, Cost of Production per acre, revenue per acre, profit per acre.

TOOLS ANALYSIS

Statistical tool like Standard Deviation, Return on Investment used to analyze the data.

RESULTS AND DISCUSSION

Table 1 Social aspect of well Irrigated and Non-well Irrigated Farmers

Type of the farmer	Social group			Total	Type of Family		Total	Statistics	Size of the family	Year of family education	Working Days Per Month
	SC/ST	MBC	BC		Joint family	Nuclear family					
well irrigated	(31.9) [50.0] 15	(31.9) [48.4] 15	(36.2) [43.6] 17	(100.0) [47.0] 47	(6.4) [33.3] 3	(93.6) [48.4] 44	(100.0) [47.0] 47	Mean SD N	3.68 .922 47	27.42 14.67 47	11.70 3.18 47
Non-well irrigated	(28.3) [50.0] 15	(30.2) [51.6] 16	(41.5) [56.4] 22	(100.0) [53.0] 53	(11.3) [66.7] 6	(88.7) [51.6] 47	(100.0) [53.0] 53	Mean SD N	3.28 .701 53	23.96 13.89 53	12.24 3.29 53
Total	(30.0) [100.0] 30	(31.0) [100.0] 31	(39.0) [100.0] 39	(100.0) [100.0] 100	(9.0) [100.0] 9	(91.0) [100.0] 91	(100.0) [100.0] 100	Mean SD N	3.54 .822 100	25.83 14.37 100	11.99 3.23 100

Source: computed from primary survey (2014)

( ) parenthesis indicates that row wise percentage
[ ] parenthesis indicates that column wise percentage

Social aspects of well irrigated and non-well irrigated farmers table 1 represents. The social group of well and non-well irrigation farmers have disparities in family wise, one is joint family other one is nuclear family, last half decades most of the family would like to live in nuclear family because of their livelihood and nature of behaviors also totally changed. Old family style and priorities of family love not like that new generation most of the rural joint families little bit changing nuclear family that's, Tamil says (Thanikutithanam) because they want to yearn money from their selves, because they would notshare their yearning money and land properties extra family members only they want to live and like husband, wife, and their child's the table denote is mostly based on farm based working and cultivate non- land labourer dividing the social group category 30 percentage SC/ST farmers and 31 percentage MBC farmers then 39 percentage BC farmers have based well irrigated and non-well irrigated farmers 11.99 percentage monthly working with farm land others days worked with labour, in situational for cultivation days. The farmers family education is 25.83 percentage is around. The family size in well irrigation farmers is 3.68 percentage and non-well irrigation farmers family size is 3.28 percentage.

Table 2 Details of Cost of Production in Well Irrigated and Non-Well Irrigated Farmers

Type of the farmer	Statistics	Cost of Production						Total	Statistics	Own man power	Others man Power	Total
		Ploughing	Planting	Pesticide	Harvesting	Labour	Fertilizers					
well irrigated	Mean SD N	7595.74 4332.18 47	7451.06 2931.89 47	2793.61 5303.31 47	78000.00 49565.72 47	296.80 72.53 47	12144.68 4146.64 47	108275.53 54831.90 47	Mean SD N	3.85 4.05 47	16.36 5.51 47	20.21 9.56 47
Non-well irrigated	Mean SD N	5950.94 1674.13 53	6983.39 2389.26 53	1915.09 678.41 53	6644.33 2001.21 53	349.05 86.87 53	9171.69 2026.89 53	31014.52 7805.89 53	Mean SD N	2.37 .48 53	22.45 4.83 53	24.82 5.31 53
Total	Mean SD N	31546.68 6006.31 100	14434.45 5321.47 100	4708.7 5981.72 100	127565.72 51566.93 100	645.85 159.4 100	21316.37 6173.53 100	139290.43 62637.79 100	Mean SD N	1.26 1.24 100	1.81 3.37 100	45.03 14.87 100

Source: computed from primary survey (2014)

In Tamilnadu is one of the big agricultural state. The study mostly based on cost of production and man power, the previous table convey that listing the irrigated farmers, the farmers cultivated particular crop like a paddy and sugarcane this two crop various cost of production is used for farmers, must need this costs. The crop production properly we need own man power and other man power next the farmer must spend the ploughing cost, planting cost, pesticide cost, fertilizer cost, labour cost and harvesting cost. The farmers have not spend all this costs could not possible to production the crop cultivation. The well irrigated farmers spending more than cost because they yearly full water facility and the farmer is cultivate one year crop, only labourer cost is little bit change the non-well irrigated farmers expecting river and dank water this just only six months have used the farmer so their labourer cost is high better then well farmer, the well irrigated farmers labour cost is 349.05 percentage and the non-well irrigated farmers cost is 296.80 percentage and then man power the well irrigated farmer is 3.85 percentage they have use own man power then non-well irrigated farmers 2.37 percentage they have use own man power next other man power, other man power is the cultivated land farmers only limited own man power facility, they could not cultivate the limited own man power so the farmers want appoint to the other labourer they must pay the douceur. So the cultivate farmers planting and harvesting time they shout appoint other labourer this time they need more labourer. And the cultivate farmers mostly depending on other man power, labour supply.

Table 3 ROI For Well Irrigated and Non-Well Irrigated Farmers (Per acre/per Annum)

Type of the farmer	Statistics	Per acre cost	Per acre revenue	Per acre Profit	Net ROI
well irrigated	Mean SD N	74422.61 43548.36 47	205627.36 137743.27 47	131204.75 101278.40 47	1.16 .56 47
Non-well irrigated	Mean SD N	22421.82 7107.18 53	48751.16 22961.30 53	26329.33 18637.27 53	.85 .60 53
Total	Mean SD N	46862.19 39851.04 100	122482.97 123632.79 100	75620.78 87840.53 100	1.00 .60 100

Source: computed from primary survey (2014)

This study discussed about net return on investment the well irrigated and non-well irrigated farmers, the farmer every year they have maintain by the profit or loss account to both farmers, per acre, per acre revenue, per acre profit. The well irrigated farmers are getting more revenue, more profit the land selling and buying cost also high, because of this land yearly full as cultivation is going on they have own well and fully water facility and the state government have provide the twenty four hours free electricity. But the non-well irrigated farmers have expecting only rainfall river water and dank water. This non-well irrigated farmers seasonal cultivator sometimes monsoon failure time have no proper rainfall they have could not possible to cultivate. Their land value is low comparing then well farmer, the net return on investment well irrigated farmers are getting more then non-well irrigated famers, comparing the cost is well irrigated farmer net return is 1.16 rupees but the non-well irrigated farmers net return is .85 rupees. This means that non-well irrigated farmers are getting losess.

CONCLUSION

In set of primary household's survey results many interesting features on economic and environmental dimensions of well and non-well irrigated farmer's regarding returns on investment, production, cost of construction. The well irrigated farmer's has been using own inputs such as free of electricity also less implicit cost, so their return on investment is higher compare than non-well irrigated farmers. The results in well irrigated farmers have an advantage over their counterparts in every single dimension. Whether the returns on investment, cost of production, production and source of irrigation with running horse power favours well irrigated farmers than non-well irrigated farmers.

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