e-ISSN : 2347 - 9671 p- ISSN : 2349 - 0187

Impact Factor : 0.998

EPRA INTERNATIONAL JOURNAL OF ECONOMIC AND BUSINESS REVIEW

www . epratrust.com

December 2014 Vol - 2 Issue- 12

FINANCIAL FEASIBILITY OF PRIVATE INVESTMENT IN DRY LAND AGRICULTURE

M.Y.Teggi[1], H. Basavaraja[2] & L.B.Kunnal[3]

[1]Associate professor, Department of Agricultural Economics, University of Agricultural Sciences (Dharwad), College of Agriculture, Bijapur, Karnataka, India.

[2&3] Professor, Department of Agricultural Economics, University of Agricultural Sciences (Dharwad), College of Agriculture, Dharwad, Karnataka, India.

ABSTRACT

The objective of the study was to analyse the cost, returns and financial feasibility of private investment pattern in dry land agriculture in Northern Karnataka. The financial feasibility analyses were employed in this study. The investment on jasmine garden was Rs.175350 per ha. The investment on digging of pits constituted the highest proportion followed by investment on plant protection and planting material. The per ha investment on citrus garden was Rs.239757. The initial investment in establishing a ber garden was Rs.68947 per ha. The total investment cost in the pomegranate garden was Rs.232000 per ha. In establishing a sapota garden the initial investment was Rs.72255 per ha. The investment on contour bund, nala bund, farm pond and land leveling and bunding for all the categories of farmers in both the zones was financially feasible. The B: C ratio for different land development structures was more than two. The NPV was positive at 12 per cent discount rate for nala bund. The internal rate of returns was more than 30 per cent for all the structures. The investment in jasmine citrus, ber, pomegranate and sapota was found to be financially feasible and profitable. The period required to recover initial investment incurred in establishing the gardens was found less than 3 years. The post investment period productivity, number of working days and annual income of the respondents were much higher in both the zones across all categories of farmers. All the land development activities were financially feasible.

KEY WORDS: *Costs, Returns, Investment, Dry land agriculture.*

INTRODUCTION

India is the second most populous country in the world. The basic needs of the human beings as well as the livestock have been increasing enormously with rising population. The country has 329 million hectares of geographical area, of which 144 million hectares are arable land. More than two thirds of this arable land continues to depend on monsoon even after the realization of full irrigation potential. The post independence period of agricultural development was characterized by a major emphasis on self-sufficiency in food grain production in the shortest time period possible. In the process, however, it overlooked the developmental needs of the vast tracts of dry land farming. The neglect was not only in the field of crop research but also in the fields of credit and extension support. The frequent failure of rainfall and the associated fluctuating productivity in dry land regions often constitutes multi facet problems and call for concerted effort to create quality assets in dry land areas.

Both public and private investments are made in agriculture to improve the quality of rural assets and enhance their productivity. The major areas of public investments in agriculture included investment in irrigation, treatment and reclamation of land, watershed development, farm supplies, electricity, flood control, agricultural research and education, investment made for creation of warehouses, processing and distribution agencies like Food Corporation of India, State Trading Corporation, Seed Corporations, Agro-industries and markets. Absence of either public or private investment leads to lopsided development in the economy since they are both complimentary to each other. There has been a great concern in the country in the recent years that the public investment in agriculture has been declining. For example, the share of public investment in agriculture in the total investment has declined from 35.30 per cent in 1960-61 to 16.20 per cent in 1996-97. The proportion of investment in agriculturein GDP has continued to decline (Hirashima, 2000). The decline in public investment has also induced a decline in private investment, which is cause of serious concern (Planning Commission, 1995). The private sector investment in agriculture comprises of investments in the household sector and corporate sector by both in organized and unorganized sectors. The organized segment contains big firms primarily engaged in agro-processing and plantation sectors, the investment estimates of which are available in their accounting books. The unorganized sector however does not have any such systematic information. These are very small and cottage agricultural enterprises like dairy, poultry agricultural implements units etc. Information on investments in such units is diverse and diffused. It is accounted through some benchmark surveys conducted by the Central Statistical Organization (CSO). For household components, CSO along with Reserve Bank of India conducts All India Rural Debt and Investment Surveys once in ten years to estimate their contribution to investment in agriculture. The household components of private investment in agriculture is categorized into seven components viz., (1) land reclamation, (2) bunding and other land improvements, (3) orchards and plantations, (4) wells and other irrigation sources, (5) agricultural implements, machinery and transport equipments, (6) farm houses and animal sheds and (7) other capital expenditure.

The nexus between private investment and agricultural growth, agriculture growth and poverty alleviation are well articulated in

literature. Given the positive impact of agriculture growth on poverty alleviation, the role of private investment in agriculture as oneof the major engines of agriculture growth has been well documented in the development policy prospective. The capital assets depreciate continuously due to use and obsolescence. Hence, a regular private investment is essential. In this context, it is pertinent to identify the pattern of private investment in dry land agriculture, the priority of private investment, sources of such investment and constraints faced by the farmers in such investments in dry land areas. Therefore, it is necessary to study the viability of investment in dry land agriculture in Northern Karnataka.

MATERIAL AND METHODS

The present study aims at analyze the investment pattern and financial feasibility of private investments in dry land area of Northern Karnataka. Hence, two major agro-climatic dry zones namely North Eastern Dry Zone (NEDZ) and Northern Dry Zone (NDZ) spread in north Karnataka which have vast tracts of dry lands were selected purposively for the study. Keeping in view, all these points of the ten zones in the states, it was proposed to study investment details in two important dry zones of the state *viz.,* north eastern dry zone and northern dry zone.

North Eastern Dry Zone covers an area of 1.76 mha spreading in parts of Raichur and Gulbarga districts. The zone is spread across 11 taluks of these districts. The principal crops grown are paddy, hybrid sorghum, sunflower, pigeonpea, bajra, *rabi* sorghum chickpea and cotton. Northern Dry Zone covers an area of 4.78 mha including Bijapur, Bagalkot, Gadag, Bellary, Koppal and parts of Dharwad, Belgaum and Raichur districts. The zone cuts across 35 taluks of these districts. The important crops grown are bajra, pigeon pea, green gram, sunflower, *rabi* jowar, chickpea, maize, groundnut, cotton, wheat, paddy and sugarcane.

The required primary data was collected from the farmers through a structured questionnaire by personal interview method. The primary data included the information on investment pattern in horticultural crops, cost of seeds, FYM, fertilizers, plant protection chemicals, human labour, bullock labour, machine labour, land revenue, land rent, yield levels, selling prices of crops and gross returns. The data pertained to the agricultural year 2007-08.

The private investment decision of farmers in irrigated area differs widely from those in dry land areas. The farmers in dry land areas are much concerned and guided by the extent and magnitude of the profitability in different investment opportunities which are limited when compared to those in irrigated areas. It is important to boost private investment in dry land areas in view of its vast area and any improvement in such areas would bring enormous changes in the agricultural scenario of the state.

The multistage sampling design was adopted keeping each zone as a stratum for eliciting the required information from the farmers. From each of the selected zones 20 per cent of the taluks with a minimum of two taluks were randomly selected at the first stage. From each selected taluk, two villages were considered at the second stage. In the third stage, ten farmers were randomly chosen from each sample villages in such a way that it included four small farmers (up to 2.00 ha), four medium farmers (2.01 to 4.00 ha) and two large farmers (above 4.00 ha). The information was generated from 180 sample farmers comprising 72 small farmers, 72 medium farmers and 36 large farmers spread over 18 villages of 9 taluks in north eastern dry zone and northern dry zone in north Karnataka.

The collected data were processed using following analytical tools viz., tabular presentation method, budgeting technique and financial feasibility analysis. The data collected were presented in tabular form to facilitate easy comparisons. This technique of tabular presentation was employed for estimating the farm size-wise composition and magnitude of private investment in dry land agriculture. The data were analyzed with the aid of statistical tools like averages and percentages to draw the meaningful results.

Financial appraisal techniques were used to evaluate the feasibility of investment. The discounted cash flow technique, which has an advantage of reducing cash flows to a single point of time, was used to facilitate the tests of feasibility. The discount factor permits the determination of the present value and has found application in evaluation of projects. Four conventionally used project evaluation techniques were used in the present study to evaluate the feasibility of investments,viz.,Net Present Value (NPV),Benefit Cost Ratio (BCR),Internal Rate of Return (IRR) and Pay Back Period (PBP)

RESULTS AND DISCUSSION

The per ha investment in citrus orchards indicated that the investment was heavy to the tune of Rs.239757 when compared with the other horticulture crops like pomegranate (Rs.232000), jasmine (Rs.175350), sapota (Rs.72255) and ber (Rs.68947). The cost of establishing the crop in the all four horticulture crops such as jasmine, citrus, pomegranate and sapota was for three years. But, in ber crop the establishing cost was for two years only Rs.8200 during first year and Rs.12182 during second year. Among jasmine, citrus, ber, pomegranate and sapota the initial per hectare investment cost in pomegranate was higher Rs.150000. The respondents from the north eastern dry zone concentrated on horticulture crops like ber, citrus and pomegranate due to suitable soil and climatic conditions. Similarly in the northern dry zone the respondents concentrated on jasmine, pomegranate, sapota because of suitable soil and favorable climatic conditions (Table 1).

The feasibility analysis showed that investment on contour bund, nala bund, farm pond and land leveling and bunding in north eastern dry zone for all the categories of farmers was (Table 2) financially feasible. The B:C ratio for different land development structures varied from 2.45 in the nala bund to 3.38 in farm ponds. The NPV was the highest for farm pond (Rs.17, 482) and the lowest (Rs.423) for nala bund. The internal rate of returns was more than 30 per cent. The non-discounting measure, payback period showed that the investment on nala bunds was recovered with in a period of 12.61 years where as in the case of other structures it was less than 3.9 years.

The investment on all the land development structures like contour bunding, nala bunds, farm ponds and land leveling and bunding for all the categories of farmers in northern dry zone was financially feasible. The payback period of investment on these structure was 11.98 years in nala bunds and less than 3.22 years in other structures. The IRR was appealing and slightly higher for large farmers and medium farmers when compared to those for small farmers. The NPV was positive in all the structures for all the farmers. The B:C ratios of all the structures across different farmers were appealing and it was more than 2.18. The investment analysis has clearly showed that investment on land development structures in dry land areas on all sizes of farmers was financially feasible.

The investment on jasmine enterprises as revealed by investment analysis was found to be financially, feasible and profitable. The investment on citrus, sapota, ber and pomegranate orchards was found to be financially feasible (table 3).

REFERENCES

1. *Nagesh A. Raikar and Shankar Murthy H.G., 1990, Investment in production and marketing of cashew in Karnataka- An economic analysis. Abstracts of Thesis 2005, p.107.*
2. *Ramachandra, V. A., 2006, Production and marketing of sapota in North Karnataka – An economic analysis. M.Sc.(Agri.) Thesis, Univ. Agric. Sci., Dharwad.*

APPENDIX

Table 1: Investment in horticulture crops

(Rs. per ha)

Crops	Initial investment (Rs.)	Establishment cost (Rs.)				Total investment (Rs.)
		I year	II year	III year	Total	
Jasmine	97165	18040	24055	36090	78185	175350
Citrus	141085	22770	30360	45543	98672	239758
Ber	48565	8200	12183	-	20383	68948
Pomegranate	150000	24000	28000	30000	82000	242000
Sapota	28922	10000	13332	20000	43332	72255

Table 2: Financial feasibility of investment in land development structures

SN	Land Development Structure	Payback period (years)				B:C ratio				NPV (Rs.)				IRR (%)			
		Small	Medium	Large	Overall	Small	Medium	Large	Overall	Small	Medium	Large	Overall	Small	Medium	Large	Overall
North Eastern Dry Zone																	
1	Contur bund	3.24	2.62	2.76	2.87	3.28	3.06	3.70	3.34	1997	2899	2690	2528	29	37	34	35.0
2	Nala bund	12.61	11.02	6.84	10.62	2.01	2.46	2.89	2.45	119	786	365	423	17	19	18	18.3
3	Farm pond	2.90	3.01	3.19	3.03	3.85	3.05	3.25	3.38	15869	17786	18788	17482	30	30	31	30.33
4	Land leveling and Bunding	3.98	3.15	3.10	3.41	2.55	3.89	3.28	3.24	14688	18197	18327	17070	39	26	29	31.33
Northern Dry Zone																	
1	Contur bund	3.02	3.55	2.33	2.96	2.08	2.89	3.35	2.77	1788	2445	2340	2191	27	34	38	33.00
2	Nala bund	11.98	9.80	6.59	9.45	2.18	2.23	2.44	2.28	109	464	255	276	15	17	16	16.00
3	Farm..pond	2.67	2.98	3.13	2.92	3.42	3.02	3.13	3.17	13434	5343	16344	15040	29	32	33	31.00
4	Land leveling and Bunding	3.22	3.06	3.09	3.12	2.35	2.95	3.14	2.81	13010	15349	17000	15119	20	25	26	30.00

Table 3: Financial feasibility of investment in horticulture crops

SI No	Particulars	Jasmine	Citrus	Ber	Pomegranate	Sapota
1	Net Present Value (Rs./acre)	4,60972.50	5,28661.00	297444.60	190215.24	131280.00
2	Benefit Cost Ratio	2.62	2.68	2.20	2.24	2.01
3	Internal Rate of Return (%)	69	56	55	46.66	61
4	Pay Back Period (Years)	2.08	3.02	2.50	4.60	2.78