Research Paper | Management | E-ISSN : 2454-9916 | Volume : 2 | Issue : 1 | Jan 2016

FARM MECHANIZATION EXTENSION PROJECT MANAGEMENT AS NEW PARADIGM FOR SUSTAINABLE SERICULTURE DEVELOPMENT IN KARNATAKA

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ABSTRACT

Farm Mechanization Extension project in the economic sense directly or indirectly adds to the economy of the Nation. However, an introspection of the Farm Mechanization Extension project performance clearly indicates that the situation is far from satisfactory in sericulture. Most of the major and critical Farm Mechanization Extension projects in sericulture public sector are plagued by tremendous time and cost overruns.In this Farm Mechanization Extension project management as new paradigm for sustainable sericulture development in Karnataka. Feasibility study forms the backbone of Farm Mechanization Extension project formulation and presents a balanced picture incorporating all aspects of possible concern. The project feasibility studies focus on Economic and Market analysis, Technical analysis, Market analysis, Financial analysis, Economic benefits, Project risk and uncertainty and Management Aspects. The Project Formulation involves following steps are opportunity studies / support studies, identification of product / service, pre – feasibility study, feasibility study (Techno- economic feasibility), project appraisal. Some of the commonly used techniques for financial analysis in this research are like-Payback period, Return on investment (ROI), Net Present value (NPV), Profitability index (PI)/ Benefit Cost Ratio and Internal Rate of Return (IRR).The Farm Mechanization Extension Project appraisal is the project of critical examination and analysis of the proposal in totality. The appraisal goes beyond the analysis presented in the feasibility report. At this stage, if required compilation of additional information and further analysis of Farm Mechanization Extension Project dimensions are undertaken. At the end of the process an appraisal note is prepared for facilitating decision on the Farm Mechanization Extension Project implementation. The paper concluded as a Feasibility study forms the backbone of Farm Mechanization Extension Project formulation Farm Mechanization Extension Project ideas are to be examined in the light of internal constraints, external constraints, environment and limitations of the Farm Mechanization Extension Project sponsoring body. The Pre-Investment phase comprises several stages – identification of investment opportunities, preliminary selection of projects (pre feasibility), project feasibility (project formulation) and the final evaluation and investment decisions. However farm mechanization extension appraisal concentrates on aspects like market appraisal, technical appraisal, environmental appraisal, financial appraisals, economic appraisals, managerial appraisals and social cost benefit analysis. Assume importance in farm mechanization concept formulation and invest decisions. Further after project appraised and investment decisions are made a determined farm mechanization extension project report is prepared.

KEY WORDS: Farm Mechanization Extension, Sericulture, Feasibility Study, Investment, Market aspects.

Introduction

A Farm Mechanization Sericulture Extension project in the economic sense directly or indirectly adds to the economy of the Nation. However, an introspection of the Farm Mechanization Extensionproject performance clearly indicates that the situation is far from satisfactory. Most of the major and critical Farm Mechanization Extension projects in sericulture public sector are plagued by tremendous time and cost overruns. Even in the private sector the performance is not at all that satisfactory as is evident from the growing sickness in industry and rapid increase in Non-Performing Assets (NAPS) of Banks and Financial Institutions. The reasons for time and cost over runs are several and they can be broadly classified under technical, financial, procedural and managerial. Most of these problems mainly stem from inadequate project identification, formulation and Management.

Farm Mechanization Sericulture Extension Project identification

Farm Mechanization Extension identification is an important step in Farm Mechanization Extensionproject formulation. These are conceived with the objective of meeting the market demand, exploiting natural resources or creating wealth. The Farm Mechanization Extension project ideas for developmental projects come mainly from the national planning process, where as industrial projects usually stem from identification of commercial prospects and profit potential further, as Farm Mechanization Extension projects are a means to achieve certain objectives, there may be several alternative projects that will meet these objectives. It is important to indicate all the other alternatives considered with justification in favour of the specific project proposed for consideration. Sectoral studies, opportunity studies, support studies, project identification essentially focusses on screening the number of project ideas that come up based on information and data available and based on expert opinions and to come up with a limited number of Farm Mechanization Extension project options which are promising.

Farm Mechanization Sericulture Extension Project Formulation

Concept of Farm Mechanization Extension Project Formulation is the processes of presenting a project idea in a form in which it can be subjected to comparative appraisals for the purpose of determining in definitive terms the priority that should be attached to a project under severe resources constraints.Farm Mechanization Extension Project Formulation involves following steps, (1)Opportunity studies / support studies,(2)Identification of product / service,(3) Pre – feasibility study,(4)Feasibility study (Techno- economic feasibility), (5)Project appraisal,(6) Detailed project report ,(7) Appropriate guidance.

1. Opportunity studies-Identifies investment opportunities and is normally undertaken at macro level by agencies involved in eco-

nomic planning and development. In general opportunity studies are three types – Area study, sectoral and sub- sectoral studies and resource based studies. Opportunity studies and support studies provide sound basis for Farm Mechanization Extension project identification.

2. Pre-Feasibility studies / opportunity studies-should be viewed as an intermediate stage between a Farm Mechanization Extension project opportunity study and a detailed feasibility study, the difference being primarily the extent of details of the information obtained. It is the process of gathering facts and opinions pertaining to the Farm Mechanization Extension project. This information is then vetted for the purpose of tentatively determining whether the Farm Mechanization Extension project idea is worth pursuing furthering. Pre feasibility study lays stress on assessing market potential, magnitude of investment, technical feasibility analysis, risk analysis etc. The breadth and depth of pre feasibility depend upon the time available and the confidence of the decision maker. Pre feasibility studies help in preparing a Farm Mechanization Extension project profile for presentation to various stakeholders including funding agencies to solicit their support to the Farm Mechanization Extension project. Further, it also throws light on aspects of the Farm Mechanization Extension project that are critical in nature and necessitate further investigation through functional support studies. Support studies are carried out before commissioning pre feasibility or a feasibility study of Farm Mechanization Extension project requiring large scale investments. These studies also form an integral part of the feasibility studies. They cover one or more critical aspects of Farm Mechanization Extension project in detail. The contents of the support study vary dependingon the nature of the study and the Farm Mechanization Extension project comtemplated. Since it relates to a vital.

3. Farm Mechanization Extension Project identification and formulation

Aspect of the Farm Mechanization Extension project the conclusions should be clear enough to give a direction to the subsequent stage of project preparation.

4. Feasibility Study of Farm Mechanization Sericulture Extension Project

Feasibility study forms the backbone of Farm Mechanization Sericulture Extension project formulation and presents a balanced picture incorporating all aspects of possible concern. The study investigates practicalities, ways of achieving objectives, strategy options, methodology, and predict likely outcome, risk and the consequences of each course of action. It becomes the foundation on which Farm Mechanization Extensionproject definition and rationale will be based, so that the quality is reflected in subsequent project activity. A well conducted study provides a sound base for decisions, clarifications of objectives, logical planning, minimal risk, and a successful cost effective project. Assessing feasibility of a proposal requires understating of the STEEP factors. The these are like social, Technological, Ecological, Economic, and Political further, a feasibility study is not an end in itself but only a means to arrive at an investment decision. The preparation of a report is often made difficulty by the number of alternatives (regarding the choice of technology, plant capacity, location, financing etc.) and assumptions on which the decisions are made. The project feasibility studies focus on (1) Economic and Market analysis (2) Technical analysis (3) Market analysis (4) Financial analysis (5) Economic benefits (6) Project risk and uncertainity (7) Management Aspects

(1) Economic and Market Analysis of Farm Mechanization Extension

In the recent years the market analysis has undergone a paradigm shift. The demand forecast and projection of demand supply gap for products / services can no longer be based on extrapolation of past trends using statistical tools and techniques. One has to look at multiple parameters that influence the market. Demand projections are to be made keeping in view all possible developments. Reviews of the projects executed over the years suggests that many Farm Mechanization Extension Projects have failed not because of the technological and financial problems but mainly because of the fact that the projects ignored customer requirements and market forces. Further, (1) Identification of existing needs latest needs and product life cycle (2) Market outlook and competition (3) Government policies – taxes etc. (4) Socio economic factors, customer profile and marketing / Distribution practices (5) Trade practices, price and trends (6) Demand assessment / Demand supply gap-projections and import trends (7) Product substitutes and export potential

(2) Technical Analysis of Farm Mechanization Sericulture Extension Project

Technical analysis is based on the description of the product and specifications and also the requirements of quality standards. The analysis encompasses available alternative Farm Mechanization Extension technologies selection of most appropriate Farm Mechanization Extension technology in terms of optimum combination of project components, implications of the acquisition of Farm Mechanization Extension technology and contractual aspects of licensing. Special attention is given to technical dimensions such as in project selection. The Farm Mechanization Extension technology chosen should also keep in view the requirements of raw materials and other inputs in terms of quality and should ensure that the cost of production would be competitive. In brief the Farm Mechanization Extension technical analysis included the following aspects like. (1) Technology – availability (2) Alternatives (3) Latest / state-of-art (4) other implications plant capacity – market demand (5) Technological parameters (6) Market analysis (7) Availability of skilled man power. Further, In market analysis a number of factors need to be considered covering product specifications, pricing, channels of distribution, trade practices, threat of substitutes, domestic and international competition, opportunities for exports etc. It should aim at providing analysis of future market scenario so that the decision on Farm Mechanization Extension project investment can be taken in an objective manner keeping in view the market risk and uncertainty. However, Market analysis should focus on a) Inputs – Raw materials like components, power, water, fuel, others (b) Availability skilled man power like Location, logistics, Environmental considerations – pollution etc., Requirement of buildings / foundation, other relevant details.

Environmental impact studies of Farm Mechanization Sericulture Extension Project

All most all Farm Mechanization Extension projects have some impact on environment, current concern of environmental quality requires the environmental clearance for all projects. Therefore environ impact analysis needs to be undertaken before commencement of feasibility study. The objectives are like: To identify and describe the environmental Resources / values (ER/Vs) or the environmental attributes (EA) which will be affected by the project (in a quantified manner as far as possible), to describe, measure and assess the environmental effects that the proposed project will have on the ER/Vs, to describe the alternatives to the proposed project which could accomplish the same results but with a different set of environmental effects. The environment impact studies would facilitate providing necessary remedial measures in terms of the equipments and facilities to be provided in the project to comply with the environmental regulation and specifications.

The Financial Analysis of Farm Mechanization Sericulture Extension Project

Examines the viability of the project from financial or commercial considerations and indicates the return on the investments. Some of the commonly used techniques for financial analysis are like (1) Payback period (2) Return on investment (ROI), (3) Net Present value (NPV) (4) Profitability index (PI)/ Benefit Cost Ratio (5)

Internal Rate of Return (IRR).

1. Pay-back period- Is the simplest of all methods and calculates the time required to recover the initial project investment out of the subsequent cash flow. It is computed by dividing the investment amount by the sum of the annual returns (income expenditure) until it is equal to the capital cost. The drawback in this method is that it ignores any return received after the payback period and assumes equal value for the income expenditure irrespective of the time. It is also possible that Farm Mechanization Extension with projects with high return on investments beyond the pay back period may not get the deserved importance i.e., two Farm Mechanization Extension projects having same pay back period one giving no return and the other providing large return after pay back period will be treated equally, which is logically not correct.

2. Return on Investment (ROI)-Is the annual return as percentage of the initial investment ad is computed by dividing the annual return with investment and is computed by dividing the annual return with investment. It is calculated is simple when the return is uniform. Computation of ROI also suffers from similar limitation as of pay back period. It does not differentiate between two Farm Mechanization Extension projects one yielding immediate return and another project where return is received after some gestation period say about 2-3 years. Both the paybackperiod of ROI are simple ones and more suited for quick analysis of the projects and sometimes provide inadequate measures of Farm Mechanization Extension project viability. It is desirable to use these methods in conjunction with other discounted cash flow methods such as Net Present Value (NPV).

3.Internal Rate of Return (IRR) and Benefit Cost Ratio- Discounted cash flow analysis, the principle of discounting is the reverse of compounding and takes the value of money over time. To understand his let us take an example of compounding first. Assuming return of 10%, Rs. 100 would grow to Rs.110/- in the first year and Rs.121 in the second year. In a reverse statement, at a discount rate of 10% the return of Rs. 110 in the next year is equivalent to Rs. 100 at present. In other words the present worth of next years return at a discount rate 10% is only Rs. 90.91 i.e., (100/110). Similarly, Rs.121 in the second year worth Rs. 100/- at present or the present value of a return after two years is Rs. 82.64 (100/121). These values Rs. 90.91 and Rs 82.64 are known as present value of future annual return of Rs. 100 in first and second year respectively. Further, Mathematically, the formula for computing present value (PV) of a cash flow "Cn"in "n^{th}" year at discount rate of 'd'is as follows; PV=Cn/(1+d)n. The computed discount factor tables are also available for ready reference. In the financial analysis the present value is computed for both investment and returns. The results are presented in three different measures i.e NPV, B-C Ratio, and IRR.

4. Net Present Value (NPV)
Net Present Value is considered as one of important measure for deciding the financial viability of a Farm Mechanization Extension project. The sum of discounted values of the stream of investments in different years of Farm Mechanization Extension project implementation gives present value of the cost (Say C). Similarly sum of discounted returns yields the present value of benefits (Say B). The net present value (NPV) of the project is the difference between these two values (B-C). Higher the value of NPV is always desirable for a Farm Mechanization Extension project. Benefit-Cost Ratio (B-C ratio) or Profitability index (PI). The B-C Ratio also referred as Profitability Index (PI), reflex the profitability of a Farm Mechanization Extension project and computed as the ratio of total present value of the returns to the total present value of the investments (B/C). Higher the ratio better is the return.

5. Internal Rate of Return (IRR)
Internal Rate of Return (IRR) indicates the limit or the rate of discount at which the project total present value of return (B) equals to total present value of investments (C) i.e. B-C = zero. In other words it is the discount rate at which the NPV of the project is zero. The IRR is computed by iteration i.e. computing NPV at different discount rate till the value is nearly zero. It is desirable to have Farm Mechanization Extension projects with higher IRR.

Risk and Uncertainty in Farm Mechanization Sericulture Extension Project
Risk and uncertainty are associated with every Farm Mechanization Extension project. Risk is related to occurrence of adverse consequences and is quantifiable. It is analysed through probability of occurrences. Whereas uncertainty refers to inherently unpredictable dimensions and is assessed through sensitivity analysis. It is therefore necessary to analyse these dimensions during formulation and appraisal phase of the programme. Factors attributing to risk and uncertainties of a project are grouped like. (1) Technical – relates to project scope, change in technology, quality and quantity of inputs, activity times, estimation errors etc. (2) Economical – pertains to market, cost, competitive environment, change in policy, exchange rate etc. (3) Socio-political includes dimensions such as labour, stakeholders etc. (4) Environmental factors could be level of pollution, environmental degradation etc.

Economic Benefits of Farm Mechanization Sericulture Extension Project
Apart from the financial benefits (in terms of Returns on Investment) the economic benefits of the Farm Mechanization Extension project are also analysed in the feasibility study. The economic benefits include employment generation, economic development of the area where the Farm Mechanization Extension project is located, foreign exchange savings in case of import substitutes or earning of foreign exchange in case of export oriented Farm Mechanization Extension projects and others.

Management Aspects of Farm Mechanization Sericulture Extension Project
Management aspects are becoming very important in project feasibility studies. The management aspects cover the background of promoters, management philosophy, the organization set up and staffing for project implementation phase as well as operational phase, the aspects of decentralization and delegation, systems and procedures, the method of execution and finally the accountability.

Time Frame for Farm Mechanization Sericulture Extension Project Implementation
The feasibility study also presents a broad time frame for Farm Mechanization Extension Project implementation. The time frame influences preoperative expenses and cost escalations which will impact the profitability and viability of the project

Feasibility Report of Farm Mechanization Sericulture Extension Project
Based on the feasibility studies the techno economic feasibility report or the Farm Mechanization Extension Project report is prepared to facilitate project evaluation and appraisal and investment decisions.

Project Appraisal of Farm Mechanization Sericulture Extension Project
The Farm Mechanization Extension Project appraisal is the project of critical examination and analysis of the proposal in totality. The appraisal goes beyond the analysis presented in the feasibility report. At this stage, if required compilation of additional information and further analysis of Farm Mechanization Extension Project dimensions are undertaken. At the end of the process an appraisal note is prepared for facilitating decision on the Farm Mechanization Extension Project implementation. Further, the appraisal process generally concentrates on aspects like (1) Mar-

ket Appraisal are like, Focusing on demand projections, adequacy of marketing infrastructure and competence of the key marketing personnel etc. (2) Technical Appraisal are like covering product mix, capacity, process of manufacture engineering know how and technical collaboration, raw materials and consumables, location and site, building, plant and equipments, Manpower requirements and Breakeven point etc. (3) Environmental Appraisal are like Impact on land use and micro environment commitment of natural resources, and Government policy etc. (4) Financial Appraisal are like capital, rate of return, specifications, contingencies, cost projection, capacity utilization and financing pattern etc. (5) Economic Appraisal are like considered as a supportive appraisal it reviews economic rate of return, effective rate of protection and domestic resource cost etc. (6) Managerial Appraisal are like Focusses on promoters, organization structure managerial personnel, and HR management.(7) Social cost Benefit Analysis (SCBA): is a methodology for evaluating projects from the social point of view and focuses on social cost and benefits of a Farm Mechanization Extension Project. There often tend to differ from the costs incurred in monetary terms and benefits earned in monetary terms by the Farm Mechanization Extension Project SCBA may be based on UNIDO method or the Little –Mirriles (L-M) approach. Under UNIDO method the net benefits of the project are considered in terms of economic (efficiency) prices also referred to as shadow prices, further, as per the L-M approach the outputs and inputs of a Farm Mechanization Extension Project are classified into (1) traded goods and services (2) Non traded goods and services, and (3) Labour. All over the world including india currently the focus is on Economic Rate of Return (ERR) based on SCBA assume importance in Farm Mechanization Extension Project formulation and investment decisions.

Detailed Farm Mechanization Sericulture Extension Project Report (DPR)

Once the projects are appraised and the investment decisions are made a detailed Farm Mechanization Extension Project report (DPR) is prepared. It provides all the relevant details including design drawings, specifications, detailed cost estimates etc. and this would act as a blue print for Farm Mechanization Extension Project implementation.

Conclusion

Feasibility study forms the backbone of Farm Mechanization Sericulture Extension Project formulation Farm Mechanization Sericulture Extension Project ideas are to be examined in the light of internal constraints, external constraints, environment and limitations of the Farm Mechanization Sericulture Extension Project sponsoring body. The Pre-Investment phase comprises several stages – identification of investment opportunities, preliminary selection of projects (pre feasibility), project feasibility (project formulation) and the final evaluation and investment decisions. Support or functional studies are a part of the Farm Mechanization Sericulture Extension Project formulation stage and are usually done separately Farm Mechanization Extension Project formulation provides the key for success of the project.

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