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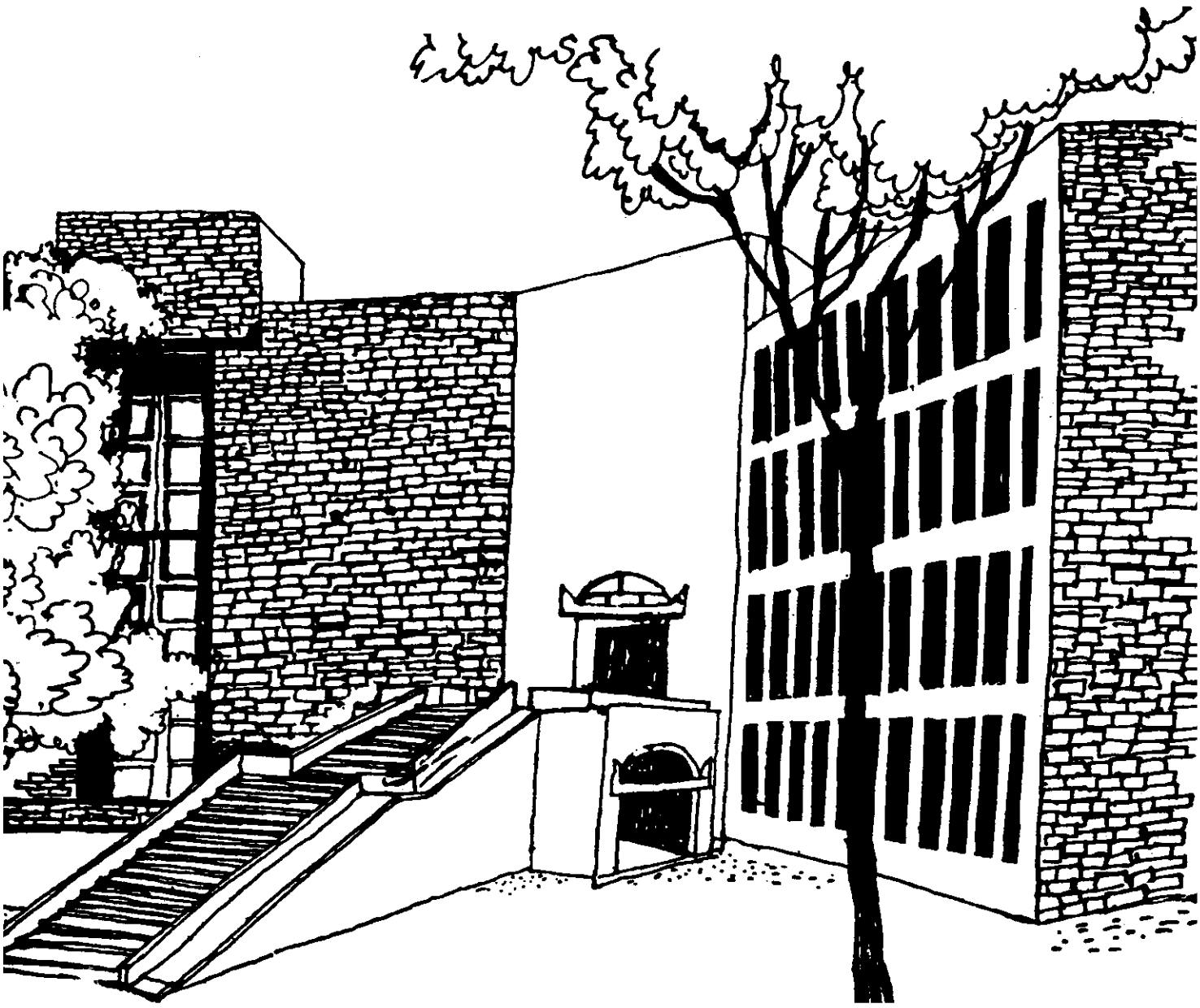

FINANCING MARKETING OF AGRICULTURAL INPUTS

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ABSTRACT

This paper conceptualises the need for stocking agricultural inputs to match supply with their demand. The stocks in turn have to be financed. Because of seasonality in demand the general credit limits extended by the banks to the input enterprises are found to be inadequate. Thus the input enterprises, depending upon the nature of demand for their products, formulate schemes to tap funds available with the channel to partly finance their marketing operations. Here is a case of a seed enterprise which came up with a scheme to collects advances against future supply of certain seed. The case identifies factors that affect the economics of the proposed scheme. It shows that the scheme not only generates the much needed liquidity for the enterprise but also reserves shelf place with the channel and ensures sales at an agreed price.

Financing Marketing of Agricultural Inputs

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A. Conceptual Framework

Seasonality in Demand for Agri-Inputs

Unlike industrial raw materials, the consumption of agricultural inputs (referred to as inputs hereafter) is seasonal and hence their demand is seasonal. Among the three major material inputs, namely; seed, fertiliser and pesticides, seasonality in demand is very high for seed because of short sowing period for individual crops. Similarly, the demand for potashic and phosphatic fertilisers which are primarily used as basal dose coincides with the demand for seed. Though generally the use of nitrogenous fertiliser and pesticides is spread over the large portion of the crop season, it is less or negligible in the later stages of crop maturity. However, pesticides are also used to protect the crop produce in the storage. Nevertheless seasonality in demand for these inputs is a fact of life.

Why Stock Inputs

While the consumption of inputs is seasonal, their production is either continuous or it does not immediately precede consumption. Thus the inputs have to be stocked for some time. To understand the dynamics of stocking requirements of the inputs, one has to

examine their production and consumption pattern. Figures 1 to 4 depict the stocking pattern of individual inputs to match supply with demand. These figures are derived from the data given in Appendix 1. The comparative study of these figures reveal that seasonality is higher in case of seed for individual seasons (Fig. 4) as seeds are produced once in a year and have to be stocked for 6 to 9 months before they are finally consumed in the next season. The unused seed has to wait for another year to get consumed provided its genetic viability is intact. The seasonality in stocking seed smoothens when three seasons are considered together (Fig 3). However, the stocks remain at high level throughout because seed for two of the three seasons is always in stocks. In the case of pesticides where production is continuous and uniform (assumed) throughout the year, stocks have two distinct periods between two main seasons i.e., kharif and rabi, and rabi and kharif respectively (Fig 2). This is because pesticide consumption in summer season is relatively very low. In case of fertiliser, the stocks remain high for most part of the year. Stocks get depleted during kharif which is perhaps the main fertiliser consumption season (Fig 1). Figures 1 to 3 also show how stocks have to be matched with the seasonality in demand for different inputs. While for fertiliser and pesticides stocks curves tend to come closer to the respective sales curves, for seed the two curves maintain a more or less constant distance and stocks curve is always above the sales curve. This happens because demand for fertiliser and pesticides is met from stocks as well as current production whereas a particular seed has to

Pattern of Monthly Stocks and Sales of Fertiliser

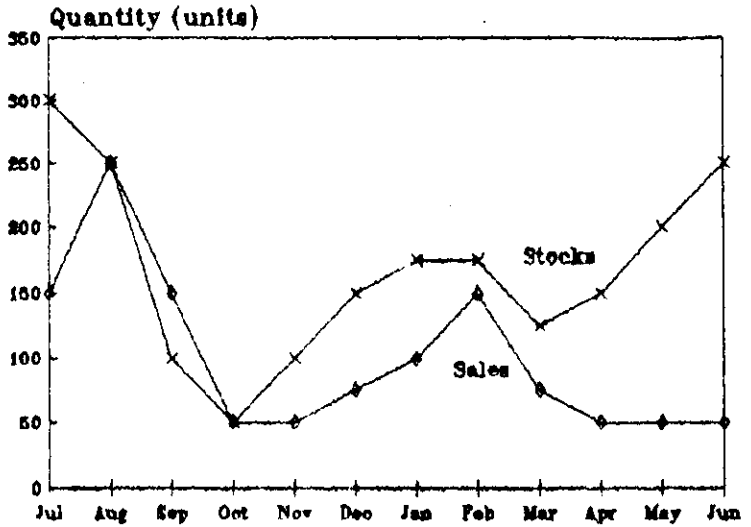

Fig. 1

Pattern of Monthly stocks and Sales of Pesticides

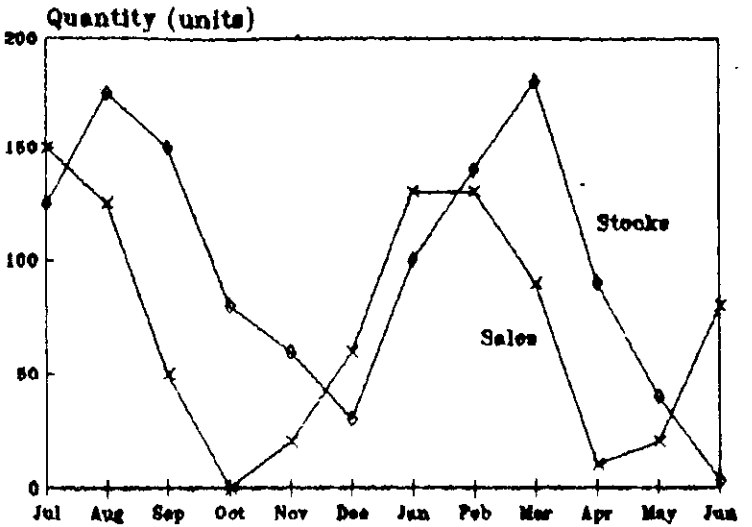

Fig. 2

Pattern of Monthly Stocks and Sales of Seed

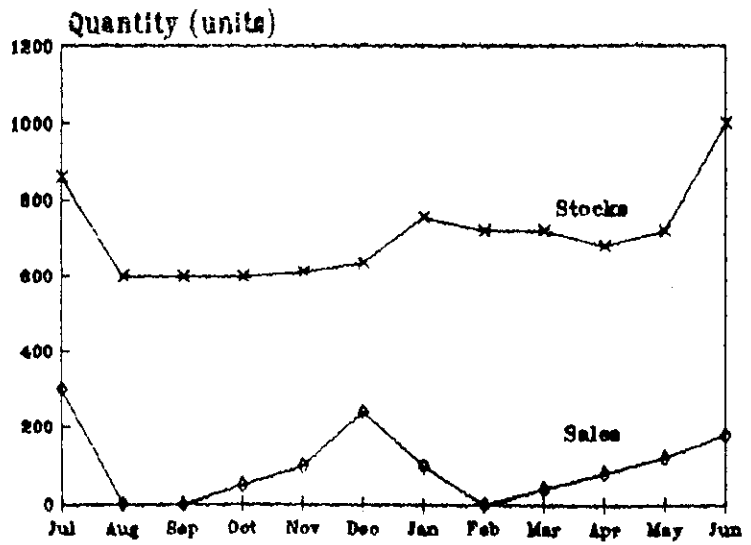

Fig. 3

Monthly Stocks of Seed for Three Crop Seasons

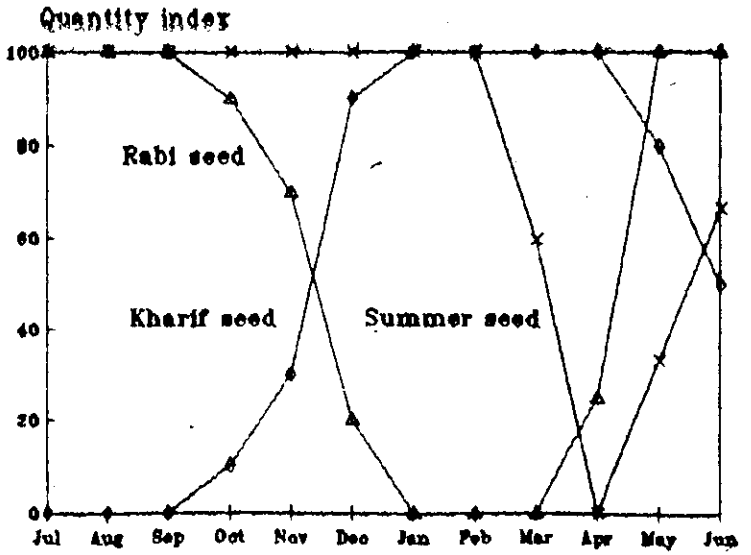

Fig. 4

remain in stocks for the rest two seasons before it gets consumed. Further, there could be no current production of seed to supplement its availability during sowing season except in case of some vegetable crops, where more than one crop a year is possible, the seed produced in a season could be used immediately in the following season. These characteristics of seed make the business in this input more expensive.

Financing Stocking of Inputs

Once inputs are manufactured/produced, they have to be stocked till they finally get consumed. The inputs may either be stocked at production point by the company or close to the consumption centres by the channel. The latter alternative is more desirable as it would avoid unnecessary delay in delivery of inputs and it would not require investment in huge storage structure by the company. Though one may argue for decentralised stocking by the company itself, it perhaps would be more expensive to manage Moreover, stocking by the channel may reflect at least to some extent expected demand for input for the commencing season. Nevertheless, stocking is a requirement and has to be financed.

An input dealer/firm avails institutional credit in the form of credit limit to finance stocking of inputs. Normally, these limits are sanctioned taking into consideration average business of individual firms and assuming definite turnovers. Therefore the limits are generally inadequate to meet the working capital requirements of the firms during peak stocking periods. The banks

on their part do not sanction additional limits for those periods. Figure 5 depicts the situation more clearly. The deficit in working capital shown for the peak periods has to be managed. In case of seed, because of the risk of deterioration in its quality, it is generally treated as normal crop produce by the banks and hence underfinanced. Moreover, because of continuous stocking for the year around and no rotation of working capital possible, the working capital requirements are for prolonged period. Beacause of liquidity norms, the banks desist from blocking their resources for longer period. Thus it is not always possible to raise sufficient funds to finance working capital requirements from the institutional sources. At the same time, the fims/companies are not allowed to mobilise deposits from individual savers. Under the circumstances, they have to sell inputs to the channel on cash. However it is not possible always and credit sales are, therefore, not uncommon especially where demand is less uncertain or supply is not a constraint. In some cases the input enterprises help the channel in securing finance from institutional sources for stocking their inputs by the channel. Where expected demand for certain inputs is more than expected supply, the firms may resort to collection of advances against future delivery of inputs. This is more true in case of some seeds than for fertiliser. However, the company pays additional discount on price of input. Though advance sales may have the advantages of assured sales and secured shelf place, the company may incur a net expenditure in the process. In what follows is a case of advance sales by a seed company.

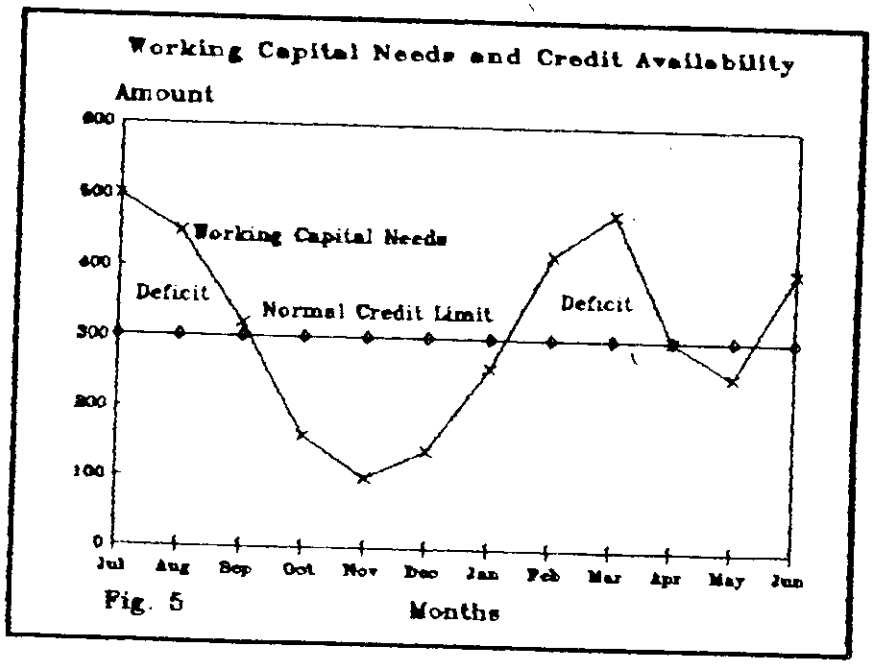

Fig. 5

B. The Case Study: Kisan Seeds

The Setting

Kisan Seeds (KISE) is an exclusive seed enterprise. It has developed its own hybrids of maize, bajra, sorghum and summer fodders. Sorghum Sudan Hybrid (SSH), a multi-cut summer fodder sown from mid-February to mid -June is introduced in Northern Region. It fits very well in Berseem - SSH rotation. If sown early it not only provides fodder during hot summer months when no other fodder is available but also continued fodder supply in kharif months and hence replaces other fodders from April to August. The only competing fodder is Sudan glass - a public variety. But its share in total summer and kharif fodder supply is hardly 10 per cent. Thus, SSH has great potential as it can conviently replace single cut Kharif fodders in the region. However, at least seven other seed companies compete in the market for SSH which together account for 75 per cent share of SSH market. KISE plans to increase its sales from 300 tonnes of SSH seed in 1989-90 to 420 tonnes in 1990-91.

KISE has established market channel in the region comprising of a distributor, 44 dealers and a network of retailers. However, the management is not happy with the performance of the channel as for 1989-90 season, it had to sanction additional discount on sales to avoid carry over of stocks. The strategy planned for the year 1990-91 season is: i) to increase volume of sales per dealer, ii) to appoint more dealers such that target sales are

achieved without resorting to price cuts. The company is well aware of its rivals, who generally followed its pricing and who is eager to snatch away a part of its market by resorting to higher discount, credit sales and lower price (See; Appendix 2 for details). It has planned an aggressive promotion policy and is confident of exceeding the targeted sales in the coming season.

Performance in 1989-90 Season

While measures proposed are expected to increase sales they have financial implications in terms of net cost of the scheme and working capital requirements. The enterprise is already facing liquidity problems. The management is thinking of supplementing the working capital availability for the marketing division through different ways. Channel financing the company's operations is one source which is being exploited in the past. Appendix 3 gives the experience of the company in financing for 1989-90 season. While Table 3.1 gives the quantity of SSH seed supplied to dealers at different rate of discount, Tables 3.2 and 3.3 show the advances collected and sales affected under different levels of advance amount. While sales against advances and on cash are shown in Table 3.4, Table 3.5 gives the amount of advance for different length of time whereas Table 3.6 gives the districtwise sales of SSH.

Approach for 1990-91 Season

Some modifications made in the policy for 1990-91 include; (a) no relaxation in the last date for acceptance of advance, (b) additional incentive for bigger amount of advance, (c) no credit sales, and (d) no reduction in retail price (MRP). The company aims at (a) higher market share (volume),(b) increased contribution, and (c) improved cash flow. To achieve these goals, it formulated the folowing strategy.

i) Increase retailer's profitability by reducing layers in the distribution channel, keeping two middle men i.e. dealers and retailers.

ii) Expand retailing by making the product available within easy reach of the farmers,

iii) Eliminate price cutting in channel by offering identical discount to dealers and retailers. The dealers may be given distribution charges of 3 per cent on quantities sold to retailers. They should be wholesaling and not retailing.

iv) Focus on retailer push.

v) Overriding commission on institutional sales only.

The last date for receipt of advances is fixed at December 31, 1990. The normal discount is 18 per cent, additional 3 per cent against 50 per cent advance and 8 per cent against 100 per cent advance. A 3 per cent additional discount as target incentive is also stipulated in the scheme.

Under the scheme the delivery of seed is to be made from March 15 to 31, 1991 ie. saving of 3.75 to 4.5 per cent on advances assuming 1.5 per cent per month rate of interest as cost to the company. Another financial gain to the company is the saving on storage cost for sales after stipulated delivery period. On the cost side, the company incurs an expenditure of 8 per cent additional discount on MRP it offers for sales against 100 per cent advance. The non-pecunary gain is the assured sales and timely availability of seed. The cost of and gain from 50 per cent advance will however be different. Seemingly, the company has opted for high cost alternative of financing. However if (a) the company is unable to generate finance for marketing at normal cost, (b) inventory cost passed on to the channel are significant, and c) a part of the cost is debited to promotion head, the scheme could be quite useful.

Thus in brief the profitability of scheme would depend on:

i) Opportunity cost of company's capital saved for advance period of 2.5 to 3 months.

ii) Inventory cost saved by the company by dumping the input to the channel, the amount of which would depend on the pattern of sales.

iii) Proporton of total sales against 50 and 100 per cent advance.

iv) Period of advance.

v) Additional dicount paid against 50 and 100 per cent advance.

This may be more clear from the following excercise.

The Excercise

Assumptions:

i) Interest cost for the company @ Rs.1.5 per cent per month

ii) Storage cost @ Rs.Ø.2 per cent per month

iii) Inventory cost per month (1.5 + Ø.2)= 1.7 per cent

iv) Storage period with the channel at 2.5 months

v) Advance period at 2.5 months

vi) Inventory period, sales pattern and inventory cost

Storage Period	% Sales	Inventory (%)	Inventory cost index
March 16-31	15	100	.8500
April 1-15	35	85	.7225
April 16-30	20	50	.4250
May 1-15	10	30	.2550
May 16-31	15	20	.1700
June 1-15	5	5	.0425
		Total	2.4650

vii) Planned sales, dicount rate and discounted price

Planned sales	Per cent of total	Discount rate (%)	Discounted MRP(P)
Normal sales	40	18	.82P
Against 50% advance	30	21	.79P
Against 100% "	30	26	.74P

viii) Total cost of the scheme

Particulars	100% advance	50% advance
a. Savings on advances	(1.5*2.5*.74P)/100 = .02775P	(1.5*2.5*.79P)/(100*2) = .0148125P
b. Savings on storage	(.82P * 2.465)/100 = .020213P	(.82P * 2.465)/100 = .020213P
c. Total savings (a + b)	.047963	.0350255
d. Total cost (additional discount on advance)	.08P	.03P

e.	Net cost or gain (c - d)	(.Ø32Ø37P)	(.ØØ5Ø255)P
f.	Assuming MRP at Rs. 2Ø,ØØØ per tonne net cost or gain/tonne	(64Ø.74)	1ØØ.51

g. Per tonne net cost/gain from the scheme :
(-64Ø.74 * .3) + (1ØØ.51 * .3) = -162.Ø7
ie., a net cost of Rs. 162/- per tonne of seed

h. Price receivable under normal sales = Rs.16,4ØØ

i. Cost as per cent of receivable price = Less than 1%

Conclusion

The scheme costs hardly 1 per cent of the realisable price to the company. At the same time it has promotional value. It ensures sales to the extent of 6Ø per cent and reserves shelf place for the product of the company to that extent. All this means non-pecuniary gains to the company which could have much higher value compared to 1 per cent additional cost. However, this is not the only source of finance for distribution of inputs. Depending on the nature of input, its supply and demand pattern, liquidity position of the company, availability of bank finance for marketing, and funds availability with the channel different alternatives schemes could be perceived for smooth disposal of inputs to the ultimate consumers.

Appendix 1

Pattern of Monthly Opening Stock, Poduction and Sales of Fertiliser, Pesticides, and Seed for a Hypothetical Situation

Month	Fertiliser			Pesticides			Seed		
	Opening stocks	Production	Sales	Opening stocks	Production	Sales	Opening stocks	Production	Sales
July	300	100	150	150	100	125	860	40a	300b
August	250	100	250	125	100	175	600	0	0
September	100	100	150	50	100	150	600	0	0
October	50	100	50	0	100	80	600	60b	46c
November	100	100	50	20	100	60	612	120b	96c
December	150	100	75	60	100	80	636	360b	240c
January	175	100	100	130	100	100	756	60b	96c
February	175	100	150	130	100	140	720	0	0
March	125	100	75	90	100	180	720	0	40a
April	150	100	50	10	100	90	680	120c	80a
May	200	100	50	20	100	40	720	360c +40a	120b
June	250	100	50	80	100	30	1000	40a	180b
Total	2025	1200	1200	865	1200	1200	8504	1200	1200
Average	169	100	100	72	100	100	709	100	100

a = Summer crops b = Kharif crops c = Rabi crops

Source : Figures are generated assuming a cropping pattern for Northern India and total production and consumption at 1200 units. In case of seed the ratio for kharif, rabi and summer seasons is taken as 5:4:1.

Appendix 2

Comparative Picture of Competing Seed Companies : Market Share, Channel Discount and Other Terms

Enterprise	SSH market share (%)	Gross discount(%)	Other terms
KISE	26	32*	MRP = Rs. 18.00 per kg
ALFA	24	37	Low price of seed
BETA	21	42	Low price of seed, credit sales, discount linked to levels of sales
CEMA	17	40	Gift scheme for higher sales
Others	12	-	-

* This discount was on sales against advance of Rs. 1.00 lakh or higher. For advance of less than Rs. 1.00 lakh the discount was 28% and on cash sales it was 24%. Three per cent additional discount was allowed on unsold stocks.

Appendix 3

In 1989-90, the company provided incentive to the dealers in terms of additional discount of 4 per cent for advance of less than Rs 1.00 lakh and 8 per cent or 2 per cent plus trip to Wonderland for advance money of Rs 1.00 lakh or more. At later date, sensing the problem of carry over stocks, KISE allowd additional discount of 3 per cent against the sale of unsold stocks. The sales performance and advance collection by the company could be seen from the following tables.

Table 3.1 : Sale of SSH at different discount rates 1989-90

Discount(%)	Bags sold (no.) (No.)	Sales Rs. Gross	Sales Rs. Net*	Net sale price (Rs. per tonne)
28	176(2)**	2,53,440	1,80,403	1,036.80
32	156	2,24,640	1,52,755	979.20
34	33	47,520	31,363	950.40
35	3,413(228)	49,14,720	29,81,160	936.04
Total	3,778(230)	54,40,320	33,45,681	945.11

* After deducting value of bags returned and discount paid.
** Figure in parentheses are number of bags returned.

Table 3.2 : Advance received from dealers for SSH booking, 1989-90

Period	Advance (Rs. '000)					
	Less than 25	25-49	5-99	100 & more	Total	No. of transactions
1989						
Upto Dec. 31	15	130	175	200	520	10
1990						
Jan.1 to 15	60	50	50	-	160	7
Jan. 16 to 31	42	150	110	100	402	13
Feb. 1 to 15	50	-	-	-	50	3
Feb. 16 to 28	16	25	50	-	91	4
Mar. 1 to 15	9	-	-	-	9	1
Mar. 16 to 31	-	-	-	-	-	-
Apr. 1 to 15	-	-	-	-	-	-
Apr. 16 to 30	-	-	50	-	50	1
May 1 to 15	29	55	-	-	84	4
May 16 to 31	53	30	-	-	83	6
Total	274	440	435	300	1449	49

Table 3.3 : Sales at Different Levels of Advance, 1989-90

Level of advance (Rs '000)	Amount of advance (Rs '000)	Sales (Rs '000)	No. of dealers		
			Total	Purchaases more than advance	Purchases less than advance
100 & more	482	838 (582)*	4(-)**	4	1
50 to 99	661	1068 (742)	9(3)	4	5
25 to 50	258	446 (310)	9(1)	5	4
Less than 25	48	196 (136)	4(-)	4	-
No advance	-	2892(2008)	18(5)	-	-
Total	1449	5440(3778)	44(9)	16	10

* No. of bags lifted by dealers
** No. of dealers returned some bags

Table 3.4 : Sales Under Different Size Lots, 1989-90

Lot size (bags)	No. of dealers		
	Against advance	On cash	Total
Upto 25	5 (120)	5 (73)	10 (193)
26 to 50	10 (403)	4 (165)	14 (568)
51 to 100	3 (204)	2 (178)	5 (385)
101 to 150	7 (829)	4 (464)	11 (1293)
More than 150	1 (212)	3 (1139)	4 (1351)
Total	26(1770)	18 (2008)	44 (3778)

Figures in parentheses are number of bags lifted.

Table 3.5 : Amount of Advance by Dealers for Different Length of Period, 1989-90

Period (approx.)	No. of dealers	Amount realised (Rs '000)	Interest cost at 18% per year (Rs)
3 months	13	665	29,925
2 & half months	3	45	1,678
2 months	13	422	12,660
1 & half months	3	66	1,485
1 month	2	34	510
Half month	10	217	1,627
Total	26	1449	47,885

Table 3.6 : Districtwise Sales in the Region, 1989-90

District	Advances (Rs'000)	Sales through dealers (bags)		
		Against advance	On Cash	Total
1	170	212 (1)	234 (2)	446 (3)
2	320	376 (5)	432 (5)	808 (10)
3	447	588 (10)	67 (2)	655 (12)
4	357	417 (4)	88 (4)	605 (8)
5	50	49 (2)	30 (1)	79 (3)
6	35	58 (2)	-	50 (2)
7	20	28 (1)	18 (1)	46 (1)
8	-	-	173 (1)	173 (1)
9	-	-	242 (1)	242 (1)
10	-	-	724 (1)	724 (1)
11	50	50 (1)	-	50 (1)
All dists.	1449	1770 (26)	2008 (18)	3778 (44)

Figures in parenthesis indicate number of dealers.