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GOVERNMENT OF NAGALAND

SNAP EVAUATION REPORT
ON
KEY VILLAGE SCHEME IN NAGALAND

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(PLANNING & COORDINATION DEPARTMENT)
GOVERNMENT OF NAGALAND
KOHIMA

PREFACE

The Evaluation Study on Key Village Scheme in Nagaland is the first of a new series of Snap Studies initiated by the Evaluation Unit in 1975- It was taken up at a significant turning-point of the State's cattle breeding programme which crossed the Key Village phase and entered the more comprehensive phase of Intensive Cattle Development under the Fifth Five Year Plan. Of course, cross-breeding by exotic and superior bulls mainly through artificial insemination still continues to be the basic strategy of the Government programme for upgrading the local cattle. With the launching of the Intensive Cattle Development Project in 1974-75 the entire area served by the Key Village Scheme (except Tuensang district) is to be merged with that of the new intensive programme while the area not covered by the I. C. D. P. is to be served by the Key Village Extension Centres which are being opened in a phased manner.

However ambitious may be the I.CD.P. in its programme contents, its actual implementation needs to be gradual and calculated; because many of the practical difficulties confronted by the Key Village Scheme will-have to be. overcome even now. Since its inception in 1966-67 the K.V.S. in Nagaiand has been facing a number of problems and bottle-necks such as the ignorance and conservatism of the cattle-owners, lack of technical personnel, poor transport facilities and traditional apathy towards dairying practices. Consequently, the K.V.S. has so far been able to make only lopsided progress and limited impact rather than serving effectively the entire area of 1600 square kilometres which was intended to be covered under the Fourth Five Year Plan Unless organised measures are taken for spreading the benefits of improved breeding over extensive areas the sophisticated operations concentrated mostly in a few urban and semi-urban sockets will continue to look like window-dressing.

It is evident that there is a need for reviewing the progress of the Key Village Scheme so that the past drawbacks may be avoided while making definite improvement in the future performance. Realising this imperative need the Planning And Co-ordination Department, Government of Nagaland entrusted the task of under-

taking an evaluation study in this field to the Evaluation Unit. After making an appraisal of the Key Village Scheme, especially its physical performance, the present study offers some practical suggestions for consolidating the work already initiated, achieving organisational efficiency and ensuring phased implementation of a broad-based cattle upgrading programme that might serve the entire State.

The Evaluation Unit gratefully acknowledges the co-operation and assistance extended by the State Directorate of Animal Husbandry And Veterinary and in particular the Veterinary Assistant Surgeons in charge of all the Key Village Block and Centres in Nagaland. The valuable advice and suggestions obtained through discussions with Shri L. G. Goswami, Deputy Secretary (Planning) and Dr. T. Zeliang, Deputy Director, Intensive Cattle Development Programme, have been profitably utilised in this report. The research assistance rendered by Shri N. Zeliang, Investigator, deserves appreciation. It is expected that the report will prove useful to the implementing department and all those who are directly or indirectl y interested in the subject.

Kohima,
March, 1976.

K. R. Debnath,
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LIST OF TABLES PRESENTED IN THE REPORT

ABBREVIATIONS USED IN THE REPORT

A. I. — Artificial Insemination

N. S. — Natural Service

K. V. S. — Key Village Scheme

K. V. C. — Key Village Centre

K. V. B. — Key Village Block

K. V. E. C. — Key Village Extension Centre

S. M. C. — Stockman Centre.

I. C. D. P. — Intensive Cattle Development Project

V. A. S. — Veterinary Assistant Surgeon

S. V. F. A. — Supervisor Veterinary Field Assistant

V. F. A. : — Veterinary Field Assistant

CHAPTER—I INTRODUCTION

Key Village Scheme at the All-India Level

1.1 Before the inception of planning in India the Government efforts to distribute improved farm-bred bulls and exotic bulls for cross-breeding of indigenous cows could not make the expected progress due to practical limitations. The Key Village Scheme was, therefore, conceived as an effective means of upgrading the cattle population and increasing their productivity of milk. Under the First Five Year Plan the Key Village Scheme was introduced all over the country in August, 1952 with a view to promoting intensive cattle development in compact areas by utilising the limited quantity of high quality breeding stock. The Key Village was intended to cover one village or a group of neighbouring villages with a breedable cattle population of 500 or more. The main thrust of the scheme was to upgrade the local stock through artificial insemination and rapid multiplication of superior bulls. Gradually the K.V.S. embraced all the major aspects of cattle development such as superior breeding, castration of scrub bulls, fodder development, control of diseases, maintenance of records, milk recording and marketing of livestock and livestock products.

1.2 The Key Village Scheme was expected to be implemented in a phased manner with a broad perspective of 15 to 20 years; since the creation of one cattle generation involved a time-lag of about 4 years and roughly 4 to 5 such generations of improved bovines would be required for any grading programme to yield adequate supply of superior cattle. The First Five Year Plan envisaged the establishment of 600 Key Villages by the end of its fourth year. With a view to paying due attention to the comprehensive aspects of the Programme the Key Village Blocks were introduced and each of these Blocks comprised of 4 Key Village Units and one artificial insemination centre. During the First Plan 146 Key Village Blocks were set up all over the country and each of these blocks had a coverage of 2000 to 2500 breedable cattle. Subsequently during the Second Plan the coverage of each K.V.B. was further extended up to 5000 breedable cattle. Opening of more Key Village Centres and consolidation of work already started came to be emphasised under the Third Five Year Plan. Inter-linked activities like castration of scrub bulls, fodder development, veterinary cover, milk production and marketing of livestock products were also given due attention under the successive Plans. Besides, some new dimensions in the form of progeny testing, bull calf rearing etc. were added to the cattle development programme. But the basic strategy of the programme continued to centre round selective breeding in recognised breeding tracts as well as upgrading of nondescript cattle both for meat and milk purposes. Up to 1973-74 a total number of 579 Key Village Blocks came to be established throughout the country.

1.3 Another significant landmark in this field was the launching of Intensive Cattle Development Projects in 1964-65. These Projects also included the various aspects of cattle development; but they were intended to make good the deficiencies of the K.V.S. operating in small and selected areas. The main shortcomings of the K.V.S. were identified as "—insufficient inputs, lack of tie-up with proper marketing and inadequate coverage of cattle population". * Up to 1973-74 as many as 55 I.C.D. Projects were established all over the country.

The Crux of Cattle Development in Nagaland

1.4 Rearing livestock mainly as the source of meat is found to be a traditional practice among the Nagas. In the tribal community livestock is also a form of wealth which often serves as a status symbol and sometimes serves even as dowry in marriages as well as sacrificial offer in religious ceremonies. These facts clearly establish that livestock development is of crucial importance to Nagaland where agriculture and animal husbandry provide the mainstay to about 95% of aggregate population.

1.5 In fact, the prevailing animal husbandry practices coupled with the conservative ideas about the utility of livestock are not found to be conducive to the qualitative improvement of bovine population. The common practice of letting the cattle graze freely in the jungles and hill slopes shows a positive disregard to the basic considerations of breeding control, feeding control and control of diseases. Even assuming beef eating as the exclusive purpose and ignoring all other purposes like milk-consumption* it is not economically justified to leave the cattle population to a stage of virtual semi-domestication when there is a crying need for developing particular breeds of proven utility as the source of been So far as the bulk of cattle population in the State is concerned, they neither conform to any particular breed nor appear to be commendable because of their small size and low yield of milk. In this context, upgrading *of* the local stock must necessarily form the principal objective of organised cattle development activities which need to include a comprehensive breeding programme as an integral part.

** Fourth Five Year Plan, 1969-74—Government of India.*

Genesis and Progress of K.V.S. in Nagaland—

1.6 Despite an early realisation that a suitable breeding programme was essential for upgrading the local cattle, practically nothing could be achieved in this regard under the First and Second Five Year Plans mainly due to abnormal political situation. By the time Nagaland attained the Statehood considerable part of the Third Plan was already over. In fact, animal husbandry programme did not receive adequate-attention until 1964 when the concerned department was reorganized as a first step towards stimulating livestock development within the frame-work of planning. But even at that time the only scheme which was implemented in this field aimed at the distribution of bulls of improved breed at a subsidised price covering 50% of the cost. No tangible progress could be made in setting up Artificial Insemination Centres mainly due to the lack of technical personnel.

1.7 During the Third Plan period the implementation of the scheme on Hill Cattle Development-Cum-Artificial Insemination Centre signalised the first step towards organised cattle development in Nagaland. Its basic objective was cross-breeding

** As compared to the widely prevalent habit of beef eating the habit of consuming milk is of relatively recent origin in Nagaland and is found to be confined mostly to the educated and urbanites. But as this habit o£ milk consumption is expected to grow substantially and as there is already some scarcity of milk in the State capital and some headquarters of districts and sub-divisions, supply of more milk forms one of the objectives of livestock development.*

of local cattle with improved breeds so as to augment the yield of meat and milk. Subsequently, the Planning Commission recommended that this scheme should be substituted by the Key Village Scheme which was more realistic and more comprehensive than the former. According to this recommendation Nagaland tried to follow more or less the All-India model of the scheme which was already making considerable impact in many States. Though the K. V. S. was proposed by the State Government in 1964-65 its actual implementation started in 1967 and during the Fourth Plan period it was continued with more extensive efforts. A token provision of Rs. 0.75 lakh was made in order to start the initial spadework in 1965-66. By the end of the same year preliminary work such as construction of buildings and purchase of equipment was over and the expenditure incurred for the Artificial Insemination Centre at Dimapur was Rs. 0.48 lakh. The centre at Dimapur started supplying semen to all the three districts of Kohima, Mokokchung and Tuensang and the total amount spent during 1967-68 exceeded Rs. 0.76 lakh. Besides, it was also proposed to open one sub-centre at Tuensang.

1.8 Artificial- insemination work was proposed to be expanded by the opening of Key Village Centre so that adequate breeding facilities could be extended to wider areas. The Annual Plan 1968-69 envisaged the expansion of the centre at Dimapur and opening of new sub-centres at Mokokchung and Kohima with a proposed outlay of Rs. 3.49 lakhs. Action regarding implementation of these proposals was initiated in due time although no definite physical targets in terms of A. I. services could be fixed.

1. 9 Cattle development under the Fourth Five Year Plan aimed at qualitative improvement of the bovines as well as raising their productivity especially in regard to milk. The Key Village Scheme provided substantial impetus to the proposed activities in this field. During the period from 1969 to 1974 it was proposed that apart from two Key Village Centres at Dimapur and Kohima 12 Artificial Insemination Centres would be opened in selected places where the breedable cattle population was, above 200. For this purpose the total outlay approved under the Fourth Plan was Rs. 6.40 lakhs. The Annual Plan 1970-71 envisaged that apart from the maintenance and expansion of four centres at Dimapur, Kohima, Mokok-chung and Tuensang three more sub-centres (called Stockman Centres) would be opened at Wokha, Zubza and Mon. The approved plan outlay for this purpose was Rs. 1.20 lakhs.

1.10 During the subsequent Annual Plans the activities under the Key Village Scheme related to the completion of work started in the previous Annual Plan, maintenance of the four K. V. B./K. V. C.s and opening of new stockman centres in the selected areas. Consequently, these activities paved the way for the achievement of the following physical targets of the Fourth Plan by the end of 1973-74: -

(i)	Opening of Key Village Block	— 1 (at Dimapur)
(ii)	Opening of Key Key Village Centres	— 3 (one each at Kohima, Mokokchung and Tuensang)
(iii)	Opening of Stockman Centres covering an approximate area of 1600 sq. Km	— 11 (one each at Wokha, Zubza, Mon, Chiechama, Zunheboto, Dhansiripar,.Chuchuyimlang, Phek, Chakhabama, Khonoma and Piphema).

1.11 In fact, no definite physical targets were fixed in terms of either the artificial insemination cases to be performed or milk-yield to be obtained from the progeny of the improved breed. Nonetheless, officially *it is claimed that as a result of the functioning of

K.V.S. under the Fourth Plan about 3752 cows were artificially inseminated and 1700 artificial insemination progenies estimated to be of the value of about Rs.8.50 lakhs, were born. A detailed appraisal of the physical performance is attempted in Chapter III.

1.12 Though the Key Village Scheme in Nagaland has broadly followed the all-India Pattern its scope and objectives have been circumscribed by practical limitations. Consequently, it has been selective in including some (and not all) objectives of its all-India counterpart. Thus, in Nagaland the K.V.S. aims at - (a) upgrading the

* *Vide Draft Fifth Five Year Plan 1974-79, Nagaland, Vol.—II*

local cattle through A.I and improved N.S; (b) castrating the sub-standard local bulls ; (c) developing good fodder and feeds ; (d) controlling and treating cattle diseases and (e) organising publicity and demonstration in order to enlighten people about the improvement of livestock wealth.

1.13 Cattle development in Nagaland has now entered an intensive phase in which the K.V.S., after completing its seven year career, is losing its identity. With the launching of Intensive Cattle Development Project in the first year of the Fifth Five Year Plan all the Key Village Block and Centres in the State (except the K.V.C. at Tuensang) are being merged with the new set-up of the I.C.D.P. In fact, with an ambitious package of improved practices the I.C.D.P- envisages a more comprehensive item coverage and more intensive activities than those of its precursor (i.e. the K.V.S.). A brief account of the I.CD.P, recently initiated in Nagaland is given in Appendix.

Objective And Scope of the Snap Study —

1.14 Being essentially a type study this snap evaluation study has the following objectives :—

{i) Making an appraisal of the Key Village Scheme since its inception ; (ii) Studying the problems faced by the K.V.S. as well

as identifying the weak-spots ; and (iii) Making suggestions which might prove useful in rendering the State's cattle upgrading programme effective within a reasonable period.

1.15 According to Livestock Census of 1972 Nagaland has a cattle population of 88,660 (excluding buffaloes) and out of this the breedable cattle numbering 38,178 constitute about 43% of the total cattle population of the State. Quantitatively this may appear to be quite a moderate coverage for any cattle development programme. But the distribution of the bovines over interior areas suffering from transport bottleneck and absence of adequate knowledge about improved cattle breeding practices are some of the factors which have rendered the task of upgrading the local stock considerably difficult and time-consuming. Besides, the very low bovine-human ratio in Nagaland as compared to the corresponding position obtaining in other States may be regarded as another quantitative consideration which stresses the need for

"rapid cattle breeding activities. On the basis of the figures available from the Livestock Census of 1966 (in the absence of current data) we find that for every 1000 human population there are 66 breedable cattle in Naga-land, 112 breedable cattle in West Bengal, 171 breedable cattle in Assam, 171 breedable cattle in Orissa, 114 breedable cattle in Manipur, 112 breedable cattle in Bihar, 158 breedable cattle in the U. P., 191 breedable cattle in Andhra Pradesh and 304 breedable cattle in Rajasthan.

1.16 Again from the qualitative standpoint the nondescript cattle of local origin badly needs upgrading through systematic breeding control. Hence the present study which" is exclusively concerned with cattle (and not with any other item of livestock) embraces both quantitative and qualitative considerations regarding genetic improvement of livestock resources as envisaged by the Key Village Scheme. The main focus of the study is on the examination of physical performance of the K.V.S. Buffaloes have been excluded from the purview of this snap study, because the Key Village Scheme in Naga$_r$ land does not provide any record of AX Services for the buffaloes.

Methodology —

1.17 This snap study has been undertaken on a complete enumeration basis extending the enquiry to the K.V.B., at Dimapur and all the three existing K.V.C:s along with all the Stockman Centres under them. The primary information has been collected from the field through a structured schedule. The secondary items of information have been obtained from the available literature and Government reports as well as the concerned officials of the Directorate of Animal Husbandry and Veterinary, Nagaland. Though a period of 6 years from 1969-70 to 1974-75 has been taken as the Reference Period, the main focus of enquiry is on the Fourth Plan period.

CHAPTER—II
ORGANISATION AND PERSONNEL

The Decentralised Net-work of Functionaries —

9.1 Being the first artificial insemination centre in Nagaland the Key Village Block at Dimapur started functioning by the midd'e of 1967-68. This was followed b- +be opening of Kev Village Centre at Lerie in 1969-70, starting of K.V.C- at Mokokchung in 1970-71 and starting of K.VC. at Tuensang in 1971-72 so that all the three erstwhile districts *of* the State could be covered bv the funr+ionaries of the Kev Village Scheme. The Key Village Block located within Dimapur town is spread over a total area of 6 acres while the Key Village Centre at Mokokchung which is sHuated in the adjoining locality nf Ongpangkong. has a total area of 2 acres. But the K.V.C at Lerie being situated within the compound of f!'° O^fci'p Breeding Centre, does not have any separate area of its own. Similarly, the K.V.C. at Tuensang being [1]orated within the oremises of the Veterinary Disoensarv [n]ooks almost like a part of the latter. The basic particulars regarding these centres as well as their sub-centres arc furnished in Table-I at the next page.

2.2 The figures presented in Table—I indicate that most of the Stockman Centres (i-e. 70%) were opened recently within the last three years of the reference period involved in this studv. Of course, the initiation of Intensive Cattle Development Project gave an impetus to the opening of Stockman Centres and it is found that as many as 10 S.M.C.s were started in 1974-75.

2.3 The distances of the different Stockman Centres from the K.V.C. or K..V.B. with which they are attached, vary within the range of 7 Km anH 18[n] Km. Out of 23 existing Stockman Centres'* only one is 180 Km. off from its controlling K.V.C. whereas the remaining 22 S-M C.s are situated within the distance range of 7 Km. and 80 Km. from the K.V.B./K.V.C.s with which they happen

** The total number of 23 S.M.C:s has been worked out on the basis of their years of establishment as noted in the Progress Report Register of Animal Husbandry And Veterinary Department ; but because of possible time-lag involved in building construction, procurement of equipments etc. quite a few of these S.M.C.s might not have started functioning at the time of present! enquiry. However this does not affect the remarks and suggestions presented in this report.*

TABLE—I
BASIC PARTICULARS OF EXISTING KEY VILLAGE BLOCKS / CENTRES AND STOCKMAN CENTRES IN NAGALAND (AS IN 1974-75).

Type of Centre	Location	Approximate distance of SMC from KVB/KVC (Km)	Year of establishment
(1)	(2)	(3)	(4)
Key Village Block	Dimapur		1966-67
Stockman Centre	Singrijan	15	1970-71
Stockman Centre	Kasirarri	10	1971-72
Stockman Centre	Rangapahar	10	1974-75
Stockman Centre	Diphupar	7	1972-73
Stockman Centre	Dhansiripar	30	1972-73
Stockman Centre	Kosiabil	12	1971-72
Stockman Centre	Ghaspani	25	1974-75
Stockman Centre	Piphima	50	1973-74
Stockman Centre	Poilwa	65	1974-75
Stockman Centre	Ngwalwa	40	1974-75
Key Village Centre	Lerie/Kohima	—	1969-70
Stockman Centre	Zubza	25	1971-72
Stockman Centre	Chuziema	20	1972-73
Stockman Centre	Khonoma	25	1974-75
Stockman Centre	Chakhabama	35	1974-75
Stockman Centre	Chiechama (Chiephobozu)	25	1974-75
Stockman Centre	Khuzama (Checkpost)	25	1970-71
Stockman Centre			
(Attached to Vety. Hospital)	Kohima	7	1969-70
Stockman Centre	Kikruma	30	1974-75
Key Village Centre	Mokokchung	—	1970-71
Stockman Centre	Chuchuyim-lang	20	1972-73
Stockman Centre	Wokha	80	1970-71
Stockman Centre	Zunheboto	68	1973-74
Key Village Centre	Tuensang	__	1971-72
Stockman Centre	Mon	180	1971-72
Stockman Centre	Chare	45	1974-75

[Source : Field Investigation]

to be attached. About 65% of all the S-M.C.s are found to lie within 30 Km. from the concerned K.V.B./K.V.C.s and this may be regarded as a manageable distance that may not create baffling operational problems. But the remaining 35% of the S.M-Cs lying beyond 30Km. and upto 180 Km. may be regarded as being too far off to be catered to regularly by their controlling K.V.B. / K.V.C.s which are the only sources of semen for artificial insemination.

Organisational Set-up of K.V.S.—

2-4 The responsibility of implementing the Key Village Scheme in the State rests with the Department of Animal Husbandry and Veterinary, Government of Nagaland. In the pyramidal structure of organisation, the Director of Animal Husbandry and Veterinary is the administrative and financial head under whom the Key Village Officer (recently upgraded as Deputy Director) is in charge of over-all technical and administrative supervision of all the Key Village Blocks/ Centre and Sub-centres functioning in the State. The Veterinary Assistant Surgeon in charge of the only Key Village Block at Dimapur has since been upgraded to Cattle Development Officer under the Intensive Cattle Development Programme. Each of the Key Village Centres at Lerie and Mokokchung is looked after by one Veterinary Assistant Surgeon who is assisted by the Veterinary Field Assistants and a few Grade IV staff viz. Semen Carriers and Bull Attendants. But the sanctioned post of V.A.S. for the K.V.C., Tuensang being still vacant the centre is now looked after by the V.A.S. in charge of Veterinary Dispensary within the compound of which this K-V.C. happens to be located. In the K.V.B., Dimapur the complement of staff under the V.A.S. was found to include Supervisor Veterinary Field Assistant, V.F.A.s and Grade-IV staff. In general, each of the sub-centres called Stockman Centres is looked after by one V.F.A. who is assisted by one or two Grade-IV staff. Only in exceptional cases one or two S.M.C.s are found to function under Veterinary Assistant Surgeons presumably because of the need for providing veterinary aid in the concerned areas. Several Stockman Centres are attached to a K.V.B. or K.V.C. and their administrative and technical supervision is done by the concerned V-A.S.

The Staffing Pattern —

2.5 A broad idea about the staffing pattern has already-been given in the above description of organisational structure. However, further details with regard to the Key Village Block as well as the Key Village Centres are given in Table-II at the next page. There is a lack of uniformity or evenness in the quantum and pattern of staff appointment in the various K.V.C.s as well as K. V- B. although they are entrusted with similar functions. In all the K.V.B-/K.V.C.S except the K. V. C. at Tnensang all the sanctioned posts are found to be filled. Apparently the K. V. C. at Tuensang[1] seems to be under-staffed so much so that it wears the look of a mere Stockman Centre ; but a close scrutiny will reveal that its present level of activities (as analysed in Chapter—III) is rather too low to justify any further addition to personnel. In fact the number of A.I. cases done annually by this K.V.C. is lower than that recorded by many S.M.C.S in the State.

2.6 Again, the figures of staff position in the K.V.C., Lerie show that this centre is rather over-staffed vis-a-vis its level of A.I. activities particularly when it is compared with the K.V.B., Dimapur as well as the K.V.C. Mokok-chung. With 3 VFAs and 5 Grade-IV staff the K.V.B., Dimapur performed 776 A.I. cases in 1973-74 and with 3 VFAs and

4 Grade-IV staff the K.V.C, Mokokchung perfomed 102 A.I- cases whereas with 6 VFAs and 6 Grade-IV staff the K.V.C, Lerie performed only 162 A.I. cases. Taking the level of A-I. activities into account it is felt that the K.V.C, Lerie can function effectively with not more than 3 V.F.A.s and 4 Grade-IV staff.

Training of Staff —

2.7 By and large, the scarcity of trained personnel is a serious problem which is generally confronted by the technical schemes and projects launched in Nagaland. The Key Village Scheme is also faced with this common problem. In fact, collection and preservation of semen, artificial insemination and follow-up are such activities that require adequate knowledge and experience in the practical operations. Having regard to this vital consideration the arrangements for in-service training has been made at the K.V.B., Dimapur where the V.A.S. in charge is assigned the additional duties of organising and conducting short-period training courses every year. Of course, the training programme and course items are decided and controlled by the Directorate of Animal Husbandry And Veterinary, Nagaland.

2.8 From the available information as presented in Table-Ill at the next page it may be concluded that the programme of training course does not follow any regularity with regard to number of courses organised per annum, periodicity and number of trainees completing training per annum although the duration of a course is fixed at one month and not more than five trainees are taken in each course.

2.9 From the Table-III it is found that 24 out of 38 V.F.A.s working under the K.V.S. (i,e, about 63%) have been trained up to March, 1975. Quantitatively this may seem to be a fairly good progress; but the qualitative aspect needs to be judged by the realistic criteria of utilisation and usefulness of the trained staff. As far as practicable the staff trained in this specific course should not be transferred to Veterinary Outposts as is now done occasionally. Moreover, it is strongly felt that the organisation of work-oriented training courses on regular basis and with longer duration should be entrusted to some competent personnel on whole-time basis. Such regular arrangement will also cater to the need for trained staff who will be required to perform all the specific and skilled activities envisaged by the Intensive Cattle Development Programme. Again, some refresher courses may also be organised with a view to testing the utility of the training imparted and improving the practical aspects of the course.

Table-II

Staff Position of K.V.B./K.V.C.s in 1974-75

(excluding S.M.C.s)

Sl. No.	Designation of staff (with class)	Key Village Block Dimapur		Key Village Centre, Leris		Key Village Centre, Mokokchung		Key Village Centre Tuensang	
		Posts sanctioned (Nos.)	Posts filled (No.s)	Posts sanctioned (Nos.)	Posts filled (No.s)	Posts sanctioned (Nos.)	Posts filled (No.s)	Posts sanctioned (Nos.)	Posts filled (No.s)
1	2	3	4	5	6	7	8	9	10
1	Veterinary Asstt. Surgeon (Class-II, Gazetted)	1	1	1	1	1	1	1	-
2	Supervisor Veterinary Field Assistant. (Class-III, Non-Gazetted)	1	1	-	-	-	-	-	-
3	Veterinary Field Asstt. (Class-III, Non-Gazetted)	2	2	6	6	3	3	1	1
4	Grade IV staff	5	5	6	6	4	4	2	2

**The post of V.A.S. in K.V.B., Dimapur has recently been upgraded to that of Cattle Development Officer under the new set-up of I.C.D.P.*

TABLE—III

Particulars Regarding In-Service Training of V.F.As. at K. V. B., Dimapur.

Year	Number of Training Courses organized	Date of Commencing of training	No. of trainees completing training	Total No. of V.F.As working under K.V.S.
(1)	(2)	(3)	(4)	(5)
1973	2	October 8	2	26
1974	4	May June October November	14	28
1975	2	January March	8	38

[Source : Field Investigation]

Note : In September, 1973 one Refresher Course of 4 days' duration organised at Dimapur was attended by 22 trainees and since then there has been no further attempt at organising Refresher Courses.

Touring And Inspection —

2.10 Reasonable frequency of touring by field staff engaged in artificial insemination and regular inspection by the supervising officials are important steps for increasing the operational efficiency of the Scheme with

TABLE—IV

Frequency of Touring By the Staff of K.V.B. / K.V.C. during 1974-75

Staff concerned	Number of days on tour in the year			
	K.V.B. Dimapur	K.V.C. Lerie	K.V.C. Mokokchung	K.V.C. Tuensang
(1)	(2)	(3)	(4)	(5)
V.A.S. V.F.A Grade IV Staff	100 120 120	120 120 120	62 183 183	15 10 10

[Source : Field Investigation]

2.11 In the K.V.C, Tuensang the fantastically low frequency of touring by the concerned staff corresponds to the unexpectedly low record of artificial insemination performed by the Centre. Scope for further improvement is evident from the fact that only 120 days of touring per annum by the V.F.A.s in K-V.B., Dimapur and 62 days of touring by V-A.S. in Mokokchung compare unfavourably even with 183 days of touring undertaken by the V.F-A.s in K.V.C, Mokokchung and 120 days of touring by the V.A.S. in K.V.C, Lerie particularly when the corresponding levels of A.I. activities performed in the respective c[e]ntres are kept in view/By increasing the frequency of louring it is possible to achieve some reasonable target of artificial insemination without the extra burden o* increasing the staff. But at the same time unreasonable and infructuous touring should also be avoided carefully-In several Stockman Centres the frequency of touring is found to be out of tune with the .level of performance in the right direction. For example, in S.M.C., Zunheboto against 185 days of touring in 1974-75, there is a nil record of artificial insemination while only 12 natural services have been done. In the same year the S.M.C, Wokha could do no A.I. although only 40 natural services were done with 150 days of touring. In S.M.C, Mon against 55 days of touring there is a nil record of A.I. and only 13 natural services on record. An examination of the records of previous years also reveal similarly discouraging position in regard to these S.M.C.s. Such redundant touring under the K. V. Scheme can be avoided if the inspection of these S.M.C.s by the supervising officials is done regularly and meaningfully.

CHAPTER—III
PHYSICAL AND FINANCIAL PERFORMANCE

(A) Physical Performance.

3.1 On the basis of official records as well as data collected from the field the physical performance of the Key Village Scheme in Nagaland may be appraised with particular reference to its objectives. coverage and impact. Due to the absence of fixed annual targets in terms of artificial insemination, resultant progenies, milk yield etc. it is not possible to measure the progress against physical targets as is usually done in evaluating a plan scheme. Over an extensive area in the interior of the State the consciousness about improved breeding is yet to break through the oystershells of ignorance and conservatism and as such it is too early to measure the impact of the K.V.S. through studies on the knowledge and adoption of artificial insemination. As a matter of fact, the progress of A.I. activities itself may be regarded as a rough indicator of the impact of K.V.S. in the different regions of *the* State.

3.2 In Chapter-I it has already been mentioned that according to official report an aggregate of 3752* cows were artificially inseminated during the Fourth Plan period. This means that on the average about 750 A.I. cases were performed annually in the entire State. Taking the aggregate number of breedable cattle in Nagaland to be 38,178 (as per Livestock Census, 1972) the annual coverage of A.I cases comes to about 2%. Even considering that the State has a relatively small cattle population (about 1,00,000) and it suffers from various practical limitations in view of its backwardness, this level of performance in the field of improved cattle breeding does not appear to be very encouraging. Rather, it gives a general impression that the Key Village Scheme in Nagaland has not yet passed a reasonable period of gestation.

• Of course, according to field investigation conducted by the Evaluation Team the total number of A. I. eases done during the Fourth Plan was 4243. On the other hand the total number of breedable cattle in 1972-73 and 1973-74 also reached levels higher than that shown by Livestock Census, 1972 although actual figure are not available.

3.3 However, on the basis of the data collected through independent field enquiry carried out by the Evaluation Team a detailed picture 01 the physical performance of the Key Village Scheme may be built up. At the outset, it will be worthwhile to examine how and to what extent the principal objectives of the K.V.S. have so far been achieved in the regions covered by the 4 existing centres along with their 23 sub-centres.

Performance In Respect of Artificial Insemination -

3.4 In fact, the foremost objective of the K.V.S. in Nagaland is artificial insemination which may be regarded as its core activity. The performance in this particular field has been judged from the four different angles viz.

(a) coverage of breedable cattle through the A.I. services rendered ; {b} progress of breeding activities in terms of A.I. cases done ; (c) utilisation of existing A.I. capacity in the Key Village Block and Key Village Centres including their Stockman Centres and (d) rationalisation of existing technical arrangements with a view to avoiding wastage.

3.5 An idea about the coverage of breedable cattle by the Key Village Scheme may be formed from the following table :-

TABLE—V
District-wise Coverage of Breedable Cattle By the K.V.S. during 1974-75.

Erstwhile District	No. of existing K.V.B./K.V.C.	Total breedable cattle in the districts (Nos.)	Coverage ofbreedable cattle by K..V.B/K.V.C. (Nos)	Percentage coverage (% of column 4 to column 3)
(1)	(2)	(3)	(4)	(5)
Kohima	2 (18)	17,651	14,288	80.95
Mokokchung	1 (3)	6,478	6,063	93.50
Tuensang	1 (2)	14,049	2,611	18.58
Total:-	4 (23)	38,178	22,962	60.14

Notes :-
(i) The district-wise figures of breedable cattle have been taken from the State's Livestock Census,1972.
(ii) Under Column (2) the figures in brackets indicate the numbers of Stockman Centres attached to K. V. B./K. V. C.

[Source : Official Records]

3.6 At the State level the coverage of breedable cattle by the K. V. S. comes to about 60%. The district-wise figures show considerable regional disparities in coverage. The highest percentage coverage (about 93 *%)* is found in Mokokchung district whereas the lowest (about 19%} is recorded by Tuensang district. In absolute terms, of course, Kohima district scores the highest coverage of breedable cattle (14,288) which is more than double that of Mokokchung district. This is quite natural, since Kohima district has two maior centres one of which is the Key Village Block with the biggest network of 10 Stockman Centres. Besides, this district towers above others in respect of breedable cattle population (17,651). But Tuensang district which comes next to Kohima in regard to the number of breedable cattle (14,049) has a disappointing record of percentage coverage by the K. V. S. (only about 19%). This is one of the obvious indicators of unsatisfactory progress of the scheme in Tuensang.

3.7 The next important step is to study the progress of breeding activities under the K. V. S. during the Fourth Plan in the light of the figures presented in Table-VI at the next page. Artificial insemination being the core activity of Key Village Scheme much less importance is attached to natural services which are rendered as supplementary breeding measure. So increase or decrease in natural services does not materially affect the progress of the K. V. S., but if the natural services out-number artificial insemination cases in any K. V. B. or K. V, C, it may be inferred that in this particular centre efforts are going to the wrong direction and as such the situation needs remedial action.

3.8 In all the centres except that in Tuensang the A.I. cases have shown a gradually increasing trend during the Fourth Plan period (vide Table-VI). Between 1969-70 and 1973-74 the K. V. B., Dimapur and K. V. C, Lerie (both in Kohima district) have jointly recorded an increase of 91.8% in the A. I cases done while tht K, V. C, Mokokchung has recorded a spectacular increase of 537.5%. The K. V. C. at Tuensang presents a dismal picture revealing not only very low and erratic figures of A. I. cases done annually but also a peculiar position in which the number of natural services markedly exceeds the number of A. I. cases done. Any impartial observer will, therefore, come to the conclusion that such an unsatisfactory position obtaining sucessively for the last 3 years of the Fourth Plan hardly justified the existence of this K. V. C.

TABLE-VI

PROGRESS OF BREEDING ACTIVITIES UNDER K. V. S. DURING THE FOURTH PLAN

	K.V.B. Dimapur and K..V.C. kohima (Lerie)					K.V.C. Mokokchung					K.V.C Tuensang				
Years	A.I. cases done (No.)	N.S. done (No.)	Total No. of cows served for breeding	Breeding cows in Kohima District (No.)	% of Col. 4 to Col. 5 (Breeding Coverage)	A.I. cases done (No.)	N.S. done (No.)	Total no. of cows served for breeding	Breedable cows in Mokokchung District (No.)	% of Col. 9 to Col. 10 (Breeding Coverage)	A.I. cases done (No.)	N.S. done (No.)	Total No. of cows for served Breeding	Breedable cows in Tuensang District (No.)	% of Col. 14 to Co.15 (Breeding Coverage)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
1969-70	489	5	494	7,796	6.34	16	Nil	16	6,527	0.25	—	—	—	7,405	—
1970-71	836	32	868	7,796	11.13	50	Nil	50	6,527	0.77	_	__	_	7,465	—
1971-72	760	38	798	14,820	5.38	85	Nil	85	4,510	1.88	19	—	19	9,632	0.20
1972-73	811	108	919	14,820	6.20	97	32	129	4,510	2.86	27	12	39	9,632	0:40
1973-74	938	65	1,005	14,820	6.77	102	7	109	4.510	2.42	13	21	34	9,632	0.35

(i) In respect of 1969-70 and 1970-71 the figures of Breedable Cow population in the three districts have been taken from Livestock Census, 1966 oC Na.galand whereas for the years from 1971-72 to 1973-74 the similar figures of Breedable Cow Population have been taken from Livestock Census. 1972.

[Source : Field Investigation]

3.9. Even in case of K.V.B., Dimapur and K.V.C,s at Lerie and Mokokchung the present levels of A.I. activities are found to be below the quantitative standards which are regarded as economical. In 1973-74 the K. V. B., Dimapur performed 776 A.I. cases, the K.V.C., Lerie performed 162 A.I. cases and the K.V.C., Mokokchung performed 102 A.I. cases. As against these figures the K.V,C. at Tuensang has recorded a fantastically low figure of 13 A.I. cases done in 1973-74, The[1] Committee on Key Villages set up by the Ministry of Food and Agriculture, Government of India, in their Report submitted in 1961, suggested that 2000 inseminations per K. V. Block or about 350 inseminations per Unit (i.e. a group of Key Villages constituting K.V.B./K.V.C) annually should be considered as an economic proposition. It is, therefore, evident that the present level of performance needs to be improved considerably by increasing the number of inseminations done per annum in all the existing K.V.B./ K.V.C.s, Such a quantitative increase in A,I. Services will also help in improving the percentage coverage of breedable cattle by the K. V. S.

3. 10 In the field of artificial insemination the performance of Stockman Centres is, in general, very depressing as is revealed by the recent progress reports for 1973-74 and 1974-75. In 1974-75 out of a total number of 23 S.M.Cs. only 6 sub-centres (all in Kohima district) insignificant record of only 2 to 3 A.I. cases in that year. An equally dismal picture is shown by the progress report for the previous year (1973-74). An idea about the varying measures of progress achieved by the 6 S.M.Cs of Kohima district may be formed from the following- figures of A.I. cases done in 1974-75:-

Table-VII
Ranking of Stockman centers in Kohima District According to A.I. cases Done.

Controlling Centre	Location of S.M.C.	No. of A.I. cases	Ranking
K.V.B., Dimapur	Diphupar	104	1st
K.V.C.,Lerie	Veterinary		
	Hospital		
	Kohima	92	2nd
K.V.B., Dimapur	Kashiram	57	3rd
K.V.B., Dimapur	Singrijan	47	4th
K.V.C., Lerie	Chuziema	40	5th
K.V.B., Dimapur	Kosiabil	29	6th

3.11 It is really surprising to find that none of the Stockman Centres in the districts of Mokokchung and Tuensang could record a single A.I, case performed in 1974-75. It may, therefore, be concluded that the number ff sub-centres opened in a year cannot be regarded as yardstick of progress of K.V.S.. since many of the sub-centres may exist merely in name.

3.12 As regards the utilisation of existing capacity for performing artificial insemination during 1974-75 the latest available figures presented in Table-VIII Indicate that there is a gross under-utilisation of this capacity in all the centres :—

Table—VIII
Estimates of Utilisation of A.I. Capacity in 1974-75.

K.V.B./K.V.C. With location	Breeding Bulls Available Description of Breed& Number	Capacity in terms of No. of inseminations possible Annually	A.I. cases performed in 1974-75 (No.)	Extent of utilization (Col.4as % of Col. 3).
1	2	3	4	5
K.V.B.,	Jersey-4	9,600	1,042	10.92
Dimapur	R.Sindhi-1			
K.V.C.,	Jersey-2			
Lerie	R.Dane-1	5,760	200	3.41
K.V.C.,				
Mokokchung	Jersey-2	3,840	147	3.83
K.V.C.,				
Tuesang	Jersey-2	3,840	40	0.96

Note:- figures in column (4) include those of S.M.C.s.

[Source: field Investigation]

3.13 The K.V.B., Dimapur is found to record the highest extent (.10.92%) of utilisation of existing capacity for insemination in 1974-75* whereas the lowest utilisation (0.96%) is recorded by the K..V.C. at Tuensang. In this regard even the K.V.C.s at Lerie and Mokokchung are lagging behind the K.V.B. at Dimapur although all these

centres have more or less the same type of technical arrangements and the same breeds of Jersey bulls at their disposal. The difference in the degree of utilization of existing capacity might be due partly to the difference in the degree of response from the owners of cattle and partly to the variation in the efforts for setting up Stockman Centres in the interior areas of the concerned regions. Such disparities can be removed by more intensive efforts by way of demonstrations, publicity as well as establishment of required S.M.C.s in the interior regions so that the cattle-owners may be induced to make more use of the A.I. Services which will be available within more easily accessible places than ever before.

3.14 From the standpoint of efficient functioning of artificial insemination centres another important consideration is that of rationalisation of the existing technical arrangements so as to avoid wastage. Under the present system semen from the improved bulls is collected and stored at regular intervals at the K.V.B./K.V.C,s and , distributed to the S.M.C.s functioning under them. The wastage of semen collected at regular intervals in the K.V.C.s and K.V.B, poses a problem which needs to be tackled by making adequate arrangements for preservation of collected semen for longer periods. Such wastage of semen is found to result mainly from inadequate and irregular response from the cattle-owners as well as the time-lag and difficulties involved in catering to the needs of distant villages which are handicapped by poor transport and communication. An idea about the loss of semen collected in each centre may be formed from the rough estimates presented in the following table :—

**The existing capacity for inseminations per annum per centre has been roughly estimated on the basis of number of available bulls, frequency of semen collection per week per bull, quantity of semen collected per discharge per bull, maximum dilution rate currently adopted (1:20) in the State and Ihe number of A. I. cases possible with the collected semen.*

Table-IX

Estimated Loss of semen collected in K.V.B./K.V.C..s in 1974-75.

Sl,N	K.V.B./K.V.C.s with location	Quantity of Semen collected (in c.c.)	Estimated quantity of semen uswd in centers including S.M.C.s (in c.c.)	Loss of semen (In %)
(1)	(2)	(3)	(4)	(5)
1	K.V.B. Dimapur	1080	105	90.28
2	Key Village center Lerie	545	20	96.33
3	K.V.C., Mokochung	547	15	97.28
4	K.C.C., teunsang	167	4	97.60

Explanatory Note :—

Basis for estimation of semen used :

(a) Semen required per A.I. Service—2 c. c.

(b) Frequency of collection of Semen from' each bull—once in a week.

(c) Quantity of Semen collected per discharge—4 c.c,

(d) Average dilution rate of semen collected—1:20

[Source : Field Investigation]

3.15 From the statistics presented in Table—IX it is evident that on the average about 5% of the total quantity of semen collected is currently being utilised through artificial inseminations performed in this State. The loss of semen collected in all the centres except K.V.B.. Dimapur may be roughly estimated between 96% and 97%. The estimated loss of semen in K.V.B., Dimapur is oi noticeably lower magnitude (90%) than that in other centres. But in general the loss may be regarded as heavy and needs to be prevented if these centres are to function more effectively and economically. Scientific arrangements for preservation of semen for longer period need to be made at least in some central place where these K. V. Centres can deposit the surplus semen and draw upon the reserves in times of need. From this standpoint, the proposal for setting up the Semen Bank at Dimapur under the Intensive Cattle Development Proiect is a welcome measure and needs to be implemented as early as possible. Besides, loss of semen may be prevented also by the provision of better transport facilities at the Centres as well as use of better equipments (at least better than the thermos flasks which are now used) in which semen can be preserved while keeping them ready for use at the K.V.C.s or transporting them to the S.M.C,s*,

3.16 Artificial insemination involves some technical, skill, timeliness and precaution without which it is not possible to achieve the desired success in the form of improved progenies. A certain percentage of failure is. of course, unavoidable when artificial insemination cases are done in large numbers; but if this scientific breeding technique of A.I. is applied in appropriate manner and in proper time the percentage of failures can be brought down to the minimum level. It is, therefore, necessary to evaluate the operational progress of an artificial insemination programme according to some well-defined criterion which is framed in such a way as to measure, in quantitative terms, the success or failure of A.I. cases done. This purpose is served by the calculation of 'conception rate' which may be defined in the following manner :—

$$\text{Conception Rate} = \frac{\text{No. of calves born through A.I. X 100}}{\text{No. of A.I. Cases performed}}$$

For the purpose of measuring the success or failure of A.I, it is not helpful to adopt the alternative formula viz.

$$\text{Conception Rate} = \frac{\text{No. of cows pregnant X 100.}}{\text{No. of A.I. done}}$$

This is because some pregnancy cases may not lead to birth which alone is the surest test of success of A.I.

3.17 A study of Table—X at the next page reveals three important facts : (i) Since the third year (i.e. 1971-72) of the Fourth Plan there has been a marked increase in conception rate in all the existing K.V.B./K.V.C.s; fii) Except the K.V.C., Tuensang in all other centres the conception rate seems to have stabilised at a little over 40% and (iii) by the end of the Fourth Plan the average conception rate' for all the K.V.B./K.V.C.s rose to the level of about 47% as against the average conception rate of 25% recorded in the third year of this Plan. Though the

**It is gathered that' the Animal Husbandry, Veterinary And Fisheries Directorate has procured some L. N. Containers from abroad. The use of these Containers is expected to produce better results.*

Table- XVI

CENTRE – WISE BREAK – UP AVERAGE CONCEPTION RATE DURING THE FOURTH PLAN.

Years	Key village Block, Dimapur (inclufing S.M.C.s)			Key Village Centre. Lerie (incliudin g S.M.C.s.)		Key village Centre, Mokokchung (including S.M.C.s)				Key Village Centre. Tuensang (including S.M.C.s)		
	A.I. Cases done (No)	Calves born through A.I.	Conception Rate (in%)	A.I. cases done(No)	Calves born through A.I.	Conception rate (in)	A.I. cases done (No)	Calves born through A.I.	Conception Rate (in%).	A.I. cases done (No.)	Calves born through A.I.	Conception Rate (In %)
1	2	3	4	5	6	7	8	9	10	11	12	13
1969-70	489	65	13,29	Nil	Nil	Nil	16	Nil	Nil	Nil	Nil	Nil
1970-71	449	N.A	N.A.	387	51	13.18	50	16	32.00	Nil	Nil	Nil
1971-72	551	228	41.38	209	54	25.84	85	19	22.35	19	2	10.53
1972-73	606	298	49.17	205	85	41.46	97	29	29.90	27	11	40.74
1973-74	776	328	42.27	162	70	43.21	102	43	42.16	13	8	61.54

Note: - conception Rate = $\frac{\text{No. of calves born through A.I. x 100}}{\text{No. of A.I. cases done}}$

[Source: field Investigation]

present conception rate cannot be regarded as low under the prevailing conditions there is still scope for raising it around 50% by spreading the necessary knowledge about identification of heat-period of cows to ensure proper timing of artificial insemination and enforcing regular inspection of the inseminated cows by the V.F.A.s. In case the first insemination is a failure the second or third insemination should be given in time so that the failure of A.I. due to lack of mere follow-up action may not shake the faith of the people in the effectiveness of A.I. service.

Progress of Castration :—

3.13 In any programme of upgrading the local stock, large scale castration of non-descript and inferior bulls must be done in a systematic manner. Of course, ignorance and religious sentiments in a tradition-bound society

3.19 Under the K.V.S. in Nagaland the progress of castration has so far been slow and lopsided.

This conclusion emerges from the facts presented in Table—XI below :-

Table-XI
Progress of castration under the K.V.S. in Nagaland.

Year	Number of Castration cases done in center and Sub-centres.				
	K.V.B., Dimapur	K.V.C. Lerie	K.V.C. Mokokchung	K.v.C., Tuensang	Total
1	2	3	4	5	6
1969-70	60	Nil	Nil	Nil	60
1970-71	557	112	150	Nil	819
1971-72	573	136	92	Nil	801
1972-73	673	97	362	11	1143
1973-74	608	62	186	47	903
1974-75	675	84	751	55	1565
Total	3146	491	1541	113	5291

[Source: field Investigation]

3.20 In the first year of the Fourth Plan castration had a very poor record and virtually the second year of the Plan marks the beginning of this particular operation. Even subsequently the progress was hardly encouraging in the various centres. During the 4-year period between 1971-72 and 1974-75 the K.V.B. at Dimapur showed not only erratic trend but also a tendency to stagnate at a particular level (between 600 and 700 cases), the K.V.C., Lerie showed an over-all tendency towards decrease, the K.V.C., at Mokokchung showed an over-all buoyant tendency despite ups and downs (an increase of about 400% from 1971-72 to 1974-75) and the K.V.C. at Tuensang continued to lag far behind other centres by displaying a poor record of performance. From these facts and figures it is evident, that there is still much room for accelerating the pace of progress by organising and popularising castration on a more extensive scale than what is being done at present. For achieving progress in this field both persuasion and legal coercion should be tried as already suggested above. In a State where free grazing of cattle in the jungles is the prevailing system it is essential that the possibility of crossing of cows with stray bulls is removed through castration of inferior bulls.

3. 21 Further, as reported by some K.V.C. the resistence to castration offered by cattle-owners is due also to the fact that the existing arrangements for artificial insemination are still too inadequate to create confidence in their availability in the areas not very close to the K. V. C.s. Hence the present lacuna in regard to alternative arrangements for A.I. or improved N.S. (substituting crossing by non-descript bulls) needs to be removed so that the -people are persuaded to agree to castration of inferior bulls-either stray or owned by some individual. The resistence to castration is found to be minimum in the jurisdiction of K.V.B., Dimapur whereas it is found to be maximum in the areas covered by K.V.C, Tuensang.

Fodder And Feed Development:-

3.22 That fodder and feed development forms an integral part of any upgrading programme needs hardly to be elaborated. The improved progency born through artificial insemination needs greater quantities of feeds than those required by the calves of local breeds. Besides,

the feeds offered to improved progeny need to be of balanced and mixed type (including straw, green fodder and concentrates). Private cattle-owners have very little knowledge about such feeds of optimal nutritional value. Also the cost and availability of such feeds create serious difficulties to the poor owners of improved progeny. Government, should take initiative in overcoming these difficulties and adopt three important measures viz.
(i) Supply of subsidized feeds, (ii) demonstration as well as cultivation of improved fodder and (hi) distribution of fodder seeds and root-cuttings. But for a lasting and effective solution of this problem private enterprise in fodder cultivation should also come forward to play a significant role. Though in Nagaland Government programme for feed and fodder development embraces all the measures as mentioned above, cultivation of improved fodder still remains more or less confined to the K.V.B./K.V,C,s without much appreciable impact on the private cattle-owners. In order to popularise the cultivation of improved fodder efforts should be intensified through S.M.C.s., relevant functionaries of Agriculture Department as well as extension agents like V.L.Ws. It is in this context that the possibility of organising Cooperative Societies to help fodder cultivation (as in the States like U. P. and M. P.) may also be explored.
3. 23 Table-XII below shows the progress of fodder cultivation in the K.V.B./K:V:C;s during the Fourth Plan period.

TABLE — XII
Area and Output of Fodder Cultivation in the K. V. B./ K.V.C.s
(Excluding S. M. C.s.)

Year	K.V.B., Dimapur		K.V.C., Mokokchung		K.V.C., Tuensang	
	Area under Fodder (Acres)	Output of Fooder (Qtls)	Area under Fodder (Acres)	Output of Fodder (Qtls)	Area under Fodder (Acres)	Output of fodder (Qtls)
1	2	3	4	5	6	7
1969-70	N.A	N.A	Nil	Nil	Nil	Nil
1970-71	N.A	940	Nil	Nil	Nil	Nil
1971-72	6	340	Nil	Nil	3	180
1972-73	7 ½	400	1	500	Nil	Nil
1973-74	8	600	1 ½	1000	2	240

Note;- The key village center, Lerie reported no cultivation of Fodder.

[Source: field Investigation]

3.24 From the above table it is found that the progress of fodder cultivation is quite unsatisfactory even at the end of the Fourth Plan. In fact it is still in the nascent stage and needs to be improved considerably with regard to both total production and productivity. Choosing of the suitable variety of fodder for a particular area needs to be done by considering both the aspects of productivity and nutritional value. For example the potentiality of N. B.-21 plantation which has already been tried in some areas may be explored fully. Adequate arrangements for water to irrigate the lands under fodder cultivation is another important matter that deserves proper attention, as some K. V. C.s have reported this lacuna in promoting fodder cultivation in a big way. Besides, difficulties to get improved fodder seeds should also be removed.

3.25 The two other important aspects of fodder and feed development are: (i) preservation of fodder by means of silo pits or silo towers and (ii) establishment of feed mixing plant. So far as these two aspects are concerned Nagaland is yet to make successful attempts. Even distribution of chaff-cutters have not vet made any impact on the cattle-owners. In the next phase of Intensive Cattle Development Proiect (which, has already been Punched) the programme for feed and fodder development envisaged supplying fodder seeds, fencing materials and chaff-cutters at subsidized rates to the farmers interested in rearing improved breeds of cattle. The Key Village Scheme, of course, initiated the free distribution of some fodder Feeds and root-cuttings by way of incentive to progressive cattle-owners, but could not touch even the fringe of the problem as will be seen from the following table: -

Table-XIII
Distribution of Root-cuttings under the K.V.S.

K.V.B./K.V.C	Root-cutting distributed (Number)					
	1970-71	1971-72	1972-73	1973-74	1974-75	Total
1	2	3	4	5	6	7
K.V.B., Dimapur	6,800	5,125	19,930	21,255	1,705	54,815
K.V.C., Lerie	5,000	10,300	6,900	22,200	100	44,500
K.V.C., Mokokchung	Nil	6,00	1,900	1,850	2,250	12,000
K.V.C., tuensang	Nil	5,000	Nil	1,400	Nil	6,400

Note:- No distribution of root cutting has been reported by any of the centers during 1969-70

[Source: field investigation]

3.26- It is really strange to find that, up to the end of the Fourth Plan the distribution of root-cuttings revealed a more or Jess encouraging trend while in 1974-75 all centres except that in Mokokchung showed a sharp decline. The K.V.C., Tuensang seems to have neglected this aspect of fodder development for successive years. Again, the position regarding the distribution of fodder seeds is still more depressing. During the Fourth Plan period the K.V.C., Tuensang did not distribute any fodder seeds, K.V.C., Mokokchung distributed only 114 Kgs. of fodder seeds, the K.V.C., Lerie distributed 619 Kgs. of fodder seeds and the K.V.B., Dimapur distributed 609 Kgs. of fodder seeds. In this regard the K.V.B,, Dimapur and other K.V. C.s have shown inadequate attention as revealed by the nil or negligible figures recorded in 1974-75. Even assuming that this aspect is

expected to be looked after under the I.CD.P. started in 1974-75 it is not reasonable for the K.V.S. to suddenly withdraw its support to this promotional activity which may help fodder development to achieve the desired success. Of course, the poor progress of the K.V.S. in this field may provide valuable lessons to the I.C.D.P. which has a fairly ambitious programme for fodder development and feed mixing.

Control And Treatment of Cattle Diseases :-

3.27 Though the Veterinary Dispensaries are mainly responsible for the control and treatment of animal diseases the A.I. centres are also required to extend some veterinary aid in the areas covered by them. Apart from doing[1] the vaccinations and inoculations periodically the A.I. centres have to treat the cases of infertility, reproductive diseases and diseases of foot and mouth.* They are also to make regular arrangements for de-worming of calves and curative as well as prophylactic treatment of common diseases like diarrhoea and pneumonia. The existing arrangements for the supply of medicines, vaccines and equipments especially to the outlying Stockman Centres need further improvement Provision ding facilities for treatment of diseases may even lead to an eventual loss of people's confidence in this scientific technique.

3.28 The factual account given in Table—XIV shows the progress of control and treatment of cattle diseases under the K.V.S. It is interesting to find that these veterinary services were started in the A.I. centres virtually from 1971-72 and since then the K.V.S. has been showing some ups and downs in regard to both the number of cases treated and the number, of vaccinations done in the respective centres.

3.29 Taking all the A.I. centres together it is found that the total number of cases treated were 2022 in 1971-72, 8591 in 1972-73, 7768 in 1973-74 and 7586 in 1974-75. These figures clearly indicate that after an initial rise of about 325% between 1971-72 and 1972-73 the total number of cases treated started showing slowly declining trends of about 10% between 1972-73 and 1973-74 and about 2% between 1973-74 and 1974-75. This slackening in the pace of progress appears rather depressing particularly when it is recalled that during these years the A.I. cases performed in all the existing centres recorded gradual increase. The main reason for the recent decline in the number ,of cases treated seems to be the fact that the Stockman Centres opened during these years could not organise the veterinary services in the expected manner.

3.30 Of course, the progress in respect of vaccination is rather encouraging in view of a steadily rising annual trend. From the figures presented in Table—XIV it is found that the vaccination cases marked an increase of about 7% between 1971-72 and 1972-73, an increase of about 14%. between 1972-73 and 1973-74 and an increase of about 121% between 1973-74 and 1974-75. During field investigation no-complaint regarding scarcity of vaccines was reported to the Evaluation Team by any of the A.I. centres under study.

** The incidence of foot and mouth diseases among the cattle in Nagaland is considerably high.*

Table-XIV

Control And Treatment of Cattle Diseases Under the K.V.S.
(from 1969-70 to 1974-75)

Year	Key Village Block, Dimapur		Key Village cnetre, Lerie		Key Village center, Mokokchung		Key village center, tuensang	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1969-70	Nil	Nil	Nil	Nil	Nil	nil	Nil	Nil
1970-71	Nil	1,527	122	391	60	30	Nil	Nil
1971-72	667	1,156	1,044	163	239	5,100	72	Nil
1972-73	1,861	1,412	3,770	676	1,797	4,585	1,163	214
1973-74	1,624	1,304	4,050	1,650	850	4,845	1,244	63
1974-75	2,049	1,595	2,449	1,966	1,564	4,996	1,524	8,801

[Source: Field investigation]

Publicity And Incentives: -

3.31 Effective functioning of the K.V.S. depends, to a large extent, on a regular system of publicity and incentives which not only creates the necessary consciousness but also helps to accelerate the pace of progress. It is, therefore, necessary to study the activities recently undertaken by the K.V.B./K.V.C.s in this particular field. Organisation of film shows and calf rallies every year is found to b? the usual method of popularising the main activities carried out under the Scheme. Exhibitions organised occasionally in some particular places cannot be regarded as a regular measure adopted by .all the existing A.I. centres. Besides, the level of performance in this field has been more or less identical in all the K.V.B/ K.V.C.s during the last few years. The following figures relating to 1974-75 give a rough measure of the average level of performance in a year: -

Publicity Measures Taken Under the K. V. S. in 1974-75

Centres with location	Number of calf rallies Organised in 1974-75	No. of Film Shows Organised in 1974-75i
(1)	(2)	(3)
K.V.B., Dimapur	2	2
K.V.C., Lerie	1	4
K.V.C., Mokokchung	1	1
K.V.C., Tuensang	1	1
Total	5	8

Note: -

(i) The K. V C, Lerie also organised exhibition of Cattle on the Republic Day in 1974-75.
(ii) The K.V.B., Dimapur also organised 9 Film Shows under the I. C. D. P. in 1974-75,

3. 32 By organising merely one or two film shows/ calf rallies in a year it is hardly possible to make any appreciable impact on the prospective beneficiaries of the scheme. Judged by any standard this performance falls much below the expected level. Here it may also be emphasised that at least the film shows need to be organised more frequently in the interior areas than in the headquarters of the K.V.B./K/V.Cs, Apart from the film shows the practical demonstrations artificial insemination can also produce quite tangible results by way of educating the progressive farmers. Somehow or other the K.V.S. in Nagaland has not yet tried this convincing method of field extension on a regular basis so as to disseminate the knowledge about artificial insemination and its benefits.

3.33 The usual incentives offered under the K. V. S. are of two broad types : (i) incentives to the field staff carrying out artificial insemination and (ii) incentives to the cattle-owners who come forward to avail themselves of the facilities for artificial insemination. The first type of incentives includes cash rewards of Re. 1.00 (for each V. F. A.) and 0.50 P. (for each Gd, IV staff) per A. I. cad-done and Rs. 3.00 {for each V. F. A.) per calf born out of A.I. service. The second type of incentives is provided both in cash and kind. For example, during cattle shows and calf rallies the prize-winning entries get attractive cash prizes and rewards in kind (e.g. free supply of cattle feeds for 10 months) whereas all entrants to the competition get consolation prizes of Rs.5/- each. The system of incentives under the K. V. S. appears to be satisfactorily.

(B) Financial Performance.

3.34 The financial performance of the K.V.S. may be assessed broadly by measuring it against the targets of outlays envisaged by the Fourth Five Year Plan. Of course, it is also necessary to examine the quantum and pattern of expenditure vis-a-vis the nature and extent of physical performance as analysed above. But one important point to note here is that the conventional cost-and-returns analysis has no relevance to this benefit-oriented scheme which offers very little scope for yielding revenue, Further, at the initial stage of growth the Key Village Scheme continues to be capital-intensive at least for some years and as such the non-recurring expenditure occupies a predominant place in the aggregate outlays. Having regard to these facts it is felt that the appraisal of financial performance need not be much detailed.

Phasing of Annual Outlays —

3. 35 During the Fourth Plan period the originally approved outlay of Rs. 6.40 lakhs for the Key Village. Scheme was subsequently raised to Rs. 7.70 lakhs. The figures presented in Table-XV below throw light on the financial performance of the K.V.S. :-

Table—XV
Financial Performance o£ the K.V.S, During the Fourth Plan Period.

Year	Financial Target (Budget Provision)		Achievement (Actual Expenditure)	
	Plan	Non-Plan	Plan	Non-Plan
(1)	(2)	(3)	(4)	(5)
1969-70	0.95	-	0.95	-
1970-71	1.20	-	0.89	-
1971-72	1.60	-	1.70	-
1972-73	1.55	0. 84	1.14	1.76
1973-74	2.40	1.97	2.35	1.06
Total: -	7.70	2.81	7.03	2.82

Note:

The Non-Plan Budget was started only from 1972-73

[Source: Key Village Officer, Kohima]

3.36 With the raising of financial target mainly in the last year of Fourth Plan the actual level of Plan expenditure (Rs.7.03 lakhs) could be kept within bounds and it left an over-all shortfall of Rs.0.67 lakh. On the other hand, the Non-Plan outlay shows practically no divergence between the target and achievement. But the annual phasing of the outlays (both Plan and Non-Plan) does, not reveal signs of systematic financial planning for a programme the greater part of which was proposed to be merged with the Intensive Cattle Development Project (having a bigger budget of its own) in 1974-75. In such a context it could be expected that the level of annual outlays would touch the peak towards the middle of the Fourth Plan period rather than burdening the last year of the Fourth Plan with a disproportionately large outlay incurred all in a hurry when the K.V.S. Was going to be stripped of its major part.

3.37 As a matter of fact, ih 1973-74 the Plan and Non-Plan outlays together (Its.3.41 lakhs) much exceeded the total Plan and Non-Plan outlays of the first three years of the Fourth Plan taken together (i.e. Rs.2,54 lakhs), Thus, about one-third of the total Fourth Plan outlay came to be spent in its last year alone (i.e. 1973-74). It gives an impression that a frantic attempt to cover up the shortfall of the previous years and take full advantage of the incremental provision might have pushed up the financial performance to an unusually high level. But it is disappointing to find that this spectacular increase in Plan outlay in 1973-74 was not matched by correspondingly high level of physical performance either in terms of artificial insemination or the number of S.M.C.s opened in 1973-74. It is, therefore, presumed that payment of outstanding bills and spill-over expenditure on the building works might have mainly accounted for the piling up of financial obligations in a single year. Such performance can hardly be regarded as a sign of progress in the right direction.

Pattern of Outlay :-

3,38 A broad idea about the pattern of outlay may be formed from the data presented in Table—XVI. These figures showing the break-up of Plan outlay into major items of expenditure also indicate the percentage share of each individual item in the aggregate annual outlay.: Remarkable variation in the annual figures of such percentage shares is found to be a common tendency in case of all the items of outlay. But in 1973-74 the

percentage share of the item-'works (Capital)' increased abnormally at the cost of the percentage shares of other two items which recorded drastic fall much below the levels reached in the previous year. This diversion of an unusually large proportion (77.44%) of total outlay to building works does not show adequate concern about increasing the operational efficiency of the scheme.

Table- XVI

Break-up of Plan Outlays into Major Items

Items of Outlay	Actual plan Outlay (in Rs.Lakh)		
	1971-72	1972-73	1973-74
(1)	(2)	(3)	(4)
Works (Capital) (a) P.W.D.	0.15 (8.82)	0.05 (4.39)	
(b) Departmental	0.79 (46.47)	0.31 (27.19)	1.82 (77.44)
Establishment Charges	0.41 (24.12)	0.53 (46.49)	0.52 (10.64)
Other (Viz, Bull Feeds, cultivation, Medicine, Equipment, Land compensation	0.35 (20.59)	0.25 (21.93)	0.28 (11.92)
Total	1.70 (100.00)	1.14 (100.00)	2.35 (100.00)

Note :

Figures in brackets indicate percentage shares in the total outlay.

[Source: Planning Cell, Directorate of Animal Husbandry & Veterinary]

CHAPTER—IV
PROBLEMS AND BOTTLENECKS

4. I Several problems and bottlenecks faced by the Key Village Scheme in Nagaland largely account for the slow and uneven progress of artificial insemination. If the implementation of the K. V. S, is to be improved substantially the removal of practical obstacles to progress should be achieved through organised efforts within a reasonable period of time. It is, therefore, worthwhile to analyse briefly the major problems and bottlenecks in the light of the facts and figures presented in the previous chapters.

4. 2 Ignorance and conservatism of cattle-owners constitute the foremost problem that needs to be tackled .if artificial insemination is to succeed in a big way. The villagers, in general, are found to be ignorant of improved breeding and feeding as well as measures for controlling cattle diseases. The age-old practice of letting the cattle graze freely in the jungles and hill slopes does not provide scope for identification of heat period of cows for timely application of artificial insemination. Even when cow-herds are engaged by the cattle-owners there is .no intention to keep regular watch on the breedable cows and isolate them from the company of sub-standard bulls. Finding the cattle-owners interested only in beef and not the milk the hired cow-herds show no interest in improved breeding or maintaining the cattle in good health. The position becomes still worse in winter when the services of the cow-herds are dispensed with in view of the slack reason of agriculture. But maximum number of cows are found to be in the heat period during the period from September to February and natural crossing of animal continues to take place in large numbers. In such a situation of traditional indifference to the benefits of improver! breeding it is natural to find many cattle-owners refusing to get their bulls castrated even if they are quite sub-standard. Under the existing condition, it is not possible to enforce Cattle Improvement Act and compel the unwilling cattle-owners to get their inferior bulls castrated.

4. 3 Secondly, the cattle population of Nagaland is thinly scattered over extensive areas which are handicapped by the lack of regular transport and communication facilities. It becomes difficult for the concerned staff of the A. I, Centres to perform inseminations at far-flung places within the short time-limit by traversing long distance very often on foot. On the one hand the motility of the semen is likely to be affected adversely by a long time factor and on the other hand artificial insemination may prove ineffective if it is not performed within 20 hours of the onset of heat period. All these indicate that transport and communication facilities are essential for the field staff engaged in A. I. Though each of the K.V,B. and K.V.C,s has been provided with a motor cycle it is found that all the motor cycles except the one at K;V.B., Dimapur are lying out of order for a long time without the .facilities for repair. It is impossible to use bi-cycles because of the rugged and uneven topography of the hilly terrains. Provision of jeeps to the Stockman Centres is also out of question. Besides, result bus service linking all the villages under the jurisdiction of A.I. Centres is now unthinkable. In view of all these limitations the transport bottleneck appears to be virtually insuperable. Thirdly, lack of adequately trained personnel is an operational problem that not only retards progress of artificial insemination but also leads to a situation in which the intending beneficiaries might lose faith in this new-technique. In various sub-centres like those at Zubza, Piphema and Zunheboto lack of trained personnel has been responsible for poor record of artificial insemination continuously in successive years as revealed by the Progress Reports.

4.4 Fourthly, the paucity of land and water supply constitutes another important problem for the cultivation of fodder on a large scale. Even the K.V.C,s at Lerie and Tuensang are

facing this problem without any immediate means of tackling it. The problem is all the more difficult for private cattle-owners who are generally unwilling to transfer a part of their limited land holdings from the cultivation of food crops to that of fodder. Moreover, the luxuriant growth of poisonous weeds called 'Runaigi' (Eupatorium Adenophorum Sprang) is also a serious threat to fodder cultivation and as such their eradication is an imperative need.

4.5 Lastly, after some years of functioning of the Key Village Scheme it is necessary to provide adequate arrangements for the marketing of livestock and livestock products so that the cattle-owners may derive substantial benefits in terms of profitable earnings. But cattle-owners of Nagaland being primarily interested in meat and' virtually indifferent to milk and milk products it is a problem to set up marketing organisation, with a prospect of sufficient turnover that might prove to be. an economic, proposition.

Interest in milk and dairy products Is discernible among the cattle-owners of the area served by the K.V.B., Dimapur whereas in other parts of the State it is yet to be developed.

CHAPTER—V
CONCLUSIONS AND RECOMMENDATIONS

(A) Conclusions.

5. 1, An examination of the working of Key Village Scheme in Nagaland for about 7 years of its career* gives an impression that it has virtually come to a premature end after being stripped of its vital part which is merged with the Intensive Cattle Development Project. In fact, the K. V. S. could not get a fairly reasonable period of trial after overcoming the initial difficulties. Now that the I.C.D.P, has already been launched there is an imperative need for taking adequate precaution against the recurrence of past weakness and drawbacks which inhibited the progress of K. V. S.

5.2 Through a network of 3 Key Village Centres, 1 Key Village Block and 23 Stockman Centres the K. V. S, intended to cover a substantial proportion of the State's breedable cattle in the three erstwhile districts of Kohima, Mokokchung and Tuensang; but in reality its impact (as roughly indicated by the number of A. I. Case done) has not been appreciable except in some parts of Kohima district. Many of the Stockman Centres, especially those in the districts of Mokokchung and Tuensang. have failed to prove that they exist mainly for artificial insemination. Lack of adequate response, unmanageable distance, difficult terrain and absence of suitable transport facilities have been the main obstacles to the progress of A. I. operations in the S.M.C.s. With regard to the staffing pattern, availability of technical know-how and training facilities some K.V.C.s and S.M.C.s. show disparities and deficiencies which militate against their operational efficiency (vide paragraphs 2.4. 2.5. 2.6. and 2,7 of Chapter-II).

5.3 With a record of about 60% coverage of breedable cattle in the State, about 92% increase in A. I. cases done in Kohima district as well as 537% increase in A. I. cases done in Mokokchung district between 1969-70 and 1973-74 and also with an average conception rate of about 47% the performance of Key Village Scheme in Nagaland appears to be fairly good (vide paragraphs 3,6,

** Out of this 7 year period only the last three lo four years showed some indications of progress.*

3.8 and 3,17 of Chapter-Ill). But judged by the standards of economic functioning as suggested by the Committee on Key Village Scheme, Government of India (1961). even

this quantitative achievement in artificial insemination does not measure up to expectation (vide paragraph 3.0). Moreover, the records of about *11%* maximum utilisation of A. I, capacity (the minimum being less than even 1%), about 95% loss of collected semen, uneven progress of castration of inferior bulls, haphazard fodder development and erratic progress of veterinary services under the K.V.S. lead anybody to the conclusion that the performance of this scheme in Nagaland is lagging behind the expected level (vide paragraphs 3,13 3,15, 3,20, 3,24 and 3,29). The publicity measures for popularising the activities under the K.V,S, are found to be much inadequate (vide paragraphs 3.31 & 3.32). Lack of organised marketing outlets for livestock and livestock products stands in the way of spreading the tangible benefits of cattle upgrading measures.

(B) Recommendations.

General Recommendations :-

5.4 For the successful implementation of any programme of upgrading the cattle population in Nagaland it is necessary to identify carefully the areas of operation dividing them into the following categories so that the programme operation may be adjusted to the needs and conditions :-

(i) Areas with the immediate prospect for success in artificial insemination because of available infra-structural advantages and scope for good response from the cattle-owners. Dimapur, Kohima and Ghaspani are the areas falling within this category.

(ii) Areas which, though not very promising in regard to immediate success of artificial insemination, having some potentialities for stimulating fairly good response and developing infrastructural facilities in the short period. Mokokchung and Zunheboto are the areas falling within this category.

(iii) Areas with no short period prospect for the success of A. I. programme, as they suffer from infra-structural deficiencies as well as ignorance and conservatism of the cattleowners who show practically no interest in artificial insemination. The backward areas like Tuensang, Mon and Phek fall within this category.

5.5 In the areas falling within the first category great emphasis should be laid on organising and popularising artificial insemination in a big way. Of course, the selection of Dimapur as the Headquarters of I.C.D.P, has been quite appropriate ; but instead of concentrating all the important activities in the headquarters, organised efforts should be directed towards escalating the artificial insemination activities to the surrounding places. Even though the K.V.B,. Dimapur received a lot of attention under the Key Village Scheme it is disappointing to find that within its jurisdiction a promising area like Ghas-pan could not receive due attention. Early steps should, therefore, be taken in establish properly the hitherto neglected Stockman Centre at Ghaspani in a permanent building and provide it with the necessary equipments.* Again. the K.. V. C. at Lerie, along with its S. M. C. in Veterinary Dispensary. Kohima, should improve its activities not only regarding artificial insemination buy a1 so regarding fodder development.

5.6 In the areas grouped under the second category the policy should be to pay due attention to both artificial insemination and natural service : because it is not possible to extend the A.I. facilities to many villages which are handicapped by the lack of transport and difficulties of accessibility. Instead of opening more Stockman Centres indiscriminately the existing S. M. C,s in the districts of Mokokchung and Zvmheboto should be managed properly to improve their performance and a few Key Village Extension Centres may be opened for providing natural service by superior bulls.

5.7 In the areas under the third category the success of artificial insemination being a remote possibility an over-all reliance on natural service should form the basin strategy for upgrading the local breeds. The K.V.C,, Tuensang along with its S.M.C.s should be closed down and in its place a network of Key Village Extension Centres should be opened with the main objective of providing natural service by improved bulls *A Key Villa.ee which covers only about 19% of breedable cattle in the district, uiilises less than *1%* of its A.T. capacity, performs about a dozen AI. cases in a year and does more N.S cases than A.I. cases cannot have enough justification for its further continuation. The Report of the Committee on fey" "Villages. Ministry of Food & Agriculture (1961) has already suggested the? closure of unsuccessful *Key* Village Centres, The K.V.E.C.s in Tuensang, Mon and Phek should not only be able io provide N S. but also select and train up some village leaders progressive farmers in the feeding and maintenance of superior bulls that might be distributed natural service in groups of villages.

recently the Stockman Centre, Ghaspani has been shifted to a good building in a suitable location. It is now expected that better operational arrangements will follow.

5.8 It is strongly felt that the K.V.S, being just one of the major schemes of cattle development should function with proper co-ordination with the other concurrently running schemes of cattle development viz, the schemes on Cattle Breeding Farm, Assistance to Cattle Breeders, Bull Calf Rearing Centres, Cattle Breeding-cum-Demonstration Centre and Feed And Fodder Demonstration-Cum-Seed Production Farm. The proposed co-ordination may be achieved effectively on a regular basis if the task t>f suiting and controlling the formulation and implements-lion of ih** State level co-ordination programme is entrusted to a Departmental Cattle Development Committee,

5.9 The functional efficiency of the Kev Village-Centres and especially their sub-centres may be increased) by taking the measures as suggested below :-

(a) Indiscriminate opening of Stockman Centres should be avoided (vide paragraphs 3,10 and 3.11) and no further K,V,C. or S. M. P, should be opened studying the concerned area's cattle population, existing animal husbandry practices, local condition, and potential resources r

* *Contrary to the view held by the Animal Husbandry And Veterinary Department, the Evaluation Team is of firm opinion that the K.V.C., Tuensang should closed down; because the local conditions ate still too unsuitable for the successful working of an artificial insemination centre. Rather vigoroug-extenstion and demonstration work should prepare the for future.*

(b) Paucity of trained personnel should no longer retard the progress of artificial insemination as is found in the Stockman Centres like Zubza. As the existing arrangements for in-service training at K.V.B., Dimapur are both irregular and inadequate, it is strongly felt that early steps should be taken to organise work oriented training courses on regular basis and with reasonably long duration and competent personnel should be deployed for devoting whole-time attention to conducting the training courses (vide paras 2.8 & 2.9). The newly established V.F.A, Training Institute may be entrusted with the task of organising the training course in artificial insemination, v

(c) Str'ctn3ss and regularity should be observed in regard to the suspervision of Stockman Centres ensuring prompt fcPow-urj of the suggested measures. The fre-

quency of touring by staff engaged in A. I. should be commensurate with the level of A. I. services done (vide para 2,11),

(6) It is advisable for the Directorate of Animal Husbandry and Veterinary to conduct a thorough investigation into the working of Stockman Centres with a view to ascertaining the specific steps that should be taken to enable the S.M.C.s to function effectively. If necessary, some ineffective S.M.C.s may be wound up and some others may be transferred to better location.

Specific Recommendations :-

5.10 The following are the specific points which call for careful consideration and follw-up action":—

(i) The arrangement for preservation as well as despatch of semen to the sub-centres need some definite improvement so that the motility of the semen is not adversely affected. The establishment of the proposed Centralised Semen Bank at Dimapur and arrangement for refrigerators* in the selected S.M.C,s showing good progress are some of the measures that can improve the present position. The dilution of semen being a very skilled operation should never be handled by inexperienced need staff. These calculated measures will minimise the loss of semen and failure of A. I. Service.

**If necessary, in the areas not served by electricity even the refrigerators operated with Kerosene may also be tried.*

(ii) The post-insemination follow-up and recording of details should be so organised that in case the first insemination is unsuccessful the timely arrangement for second and, if necessary, even third insemination may be made. This will minimise the percentage of failures and thereby strengthen the confidence in A. I.

(iii) The follow-up of A. I. service needs to be improved particularly in respect of progeny testing, calf-rearing and control of cattle diseases. In cases where the maintenance and rearing of improved progeny by private individuals is not found satisfactory the Government should purchase particularly the superior bullcalves and . send them to the Cattle Breeding Farms so that in the mature stage they may be utilised for improved breeding.

(iv) Mass campaign for conducting and popularising the castration of scrub bulls in a systematic manner should be organised extensively. Cattle-owners should be assure that after the castration of inferior bulls the alternative arrangements for A. I. or improved natural-service will be available to them without much difficulty. Post-castration inspection to assess the position should be done at regular intervals.

(v) Much remains yet to be done in regard to feed and fodder development as indicated in (paragraphs 3.22, 3.23, 3.24 and 3.25). Here it is important to note that unless private enterprise—either individual or co-operative, is encouraged to take up fodder cultivation on a massive Scale it is not possible for the Government Farms to meet the entire requirements of fodder created by the progressive implementation of cattle upgrading programme. It is necessary to explore the possibilities of organising co-operative societies for fodder cultivation and feed mixing. In this field co-operatives have already been started in the States like Uttar Pradesh and Madhya Pradesh. Besides, under the I.CD,P. efforts may also be taken up to establish a Fodder And Feeds Research Station preferably with technical guidance from the Indian Council of Agricultural Research.

* The results of research in this institution will offer tangible benefits in regard to (a) selection of quick-growing varieties of fodder crops with high productivity and nutritional value which may be suitable for cultivation at different altitudes;

** The proposed Fodder And Feeds Research Station may gradually extend its activities to cover research in poultry and piggery feeds.*

(b) control of plant diseases and removal of harmful weeds such as the poisonous 'Runaigi' which is at present posing a serious threat to fodder cultivation in this State (vide paragraph 4.4); and (c) introduction of scientific methods of feed processing and mixing.

(vi) The existing arrangements for publicity and propaganda need definite improvement (vide paragraph 3.13). Every year a good number of film shows, cattle shows and calf rallies need to be organised regularly all over the State. As an effective means of field extension the practical demonstrations of artificial insemination should also be arranged from time to time (vide paragraph 3.32). Besides, mobile training camps may also be organised extensively for training up the progressive farmers and cattle-owners in the various aspects of upgrading the local cattle. It is expected that the establishment of a separate Publicity Wing attached to the I.CDP- will facilitate the systematic implementation of all aspects of a multi-pronged publicity programme.

(vii) Financial Planning needs to be properly adjusted to the requirements of physical programme and the capital expenditure on building works should not continue to take a disproportionately large share of total outlay leaving an insignificant proportion of available funds to be spent on the recurring items of expenditure (vide paragraphs 3.36, 3.37 and 3.38). It calls for strict financial control on the pattern and phasing of annual ex-penditure.

(viii) Without preliminary survey of Project area, market surveys of livestock and livestock products, survey of technical in-puts and production potential, survey -of milk production and periodical review of progress it is not possible to implement the I.CD.P, effectively avoiding slippages and ensuring improvement in future performance. It is, therefore, felt that the I. C. D. P. should have its own statistical cell with the necessary field staff.

APPENDIX
An Outline of the Intensive Cattle Development Project Launched in Nagaland in 1974-75.

With a view to improving the quality of cattle and raising their productivity particularly in respect of milk it is proposed to take up a massive cattle development programme under the Fifth Plan through the introduction of Intensive Cattle Development Project. The entire area (except Tuensang district) covered by the Key Village Services up to the end of Fourth Plan will be amalgamated with the I. C D. P, which will have its headquarters at Dimapur. The Project will cover 0.50 to 0.60 lakh breedable cows and buffaloes at the initial stage. The existing Key Village Block at Dimapur will be converted into Centralised Semen Bank while the Key Village Centre at Mokokchung will be upgraded to Regional Artificial Insemination Centre.

The organisational set-up of the Project will include a senior specialist of the rank of Deputy Director as the head who will be assisted by other officers like the Cattle Development Officer, Rural Dairy Extension Officer, Fodder Development Officer etc. The main activities -of the Project may be enumerated as follows :-

(i) Under the direct supervision of Cattle Development Officer artificial insemination after natural service facilities will be provided to meet the breeding requirements of the entire bovine population.

(ii) A mass castration campaign will be organised for the complete removal of all scrub bulls from the Project area.

(iii) Periodic prophylactic vaccination of livestock as well as Veterinary Aid will be provided extensively and for this purpose all the Stockman Centres will be adequately equipped.

(iv) The I.C,D,P, aims at adequate supply of feeds and fodder by increasing the area under fodder cultivation and cultivating quick growing and high yielding fodder crops. Establishment of a balanced cattle feed preparation unit and provision of loan assistance for buying cattle feeds are also contemplated.

(v) Publicity and propaganda work will be done widely by organising cattle show, calf rally or exhibition and by utilising a mobile van fitted with audio-visual aids.

(vi) The Project will be linked up with the milk chilling plants and milk assembling units will be set up for collection of milk before sending to chilling plants.

(vii) For the purpose of organising co-operative societies of milk producers and cattle breeders an Assistant Registrar of Co-operative Societies will be appointed.

(viii) Among the various subsidies and production incentives proposed to be offered by the I.C.D.P, mention may be made of proficiency award to the working staff and supply of chaff cutters, fencing, materials, seeds, milch animals etc. at subsidised rates.

fix) During the Fifth Plan period it is proposed to open 20 Stockman Centres — each covering 1000 to 1500 breedable bovines and having a staff complement of one V. F. A. and a Bull Attendant. The main activities of these S.M.C.s will include A.T., castration, control and treatment of animal diseases, fodder extension work and milk recording.

(x) The Centralised Semen Bank which is proposed to be set up at Dimapur will serve as a Reserve Bank of Semen of renowned bulls and ensure regular supply of semen to the various S.M.C.s.

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