



**His Majesty's Government  
Ministry of Agriculture  
Department of Livestock Services  
Animal Breeding and Artificial Insemination Section**



**Annual Report  
2053-54  
(1996-97)**

**Khumaltar, Lalitpur  
Falgun 2054  
(March 1997)**

**P O Box No. 8814  
Kathmandu, Nepal**

## TABLE OF CONTENTS

<b>HISTORICAL BACKGROUND</b>	<b>5</b>
<b>VISION</b>	<b>5</b>
<b>OBJECTIVES</b>	<b>6</b>
<b>LONG TERM</b>	<b>6</b>
<b>SHORT AND MEDIUM TERM</b>	<b>6</b>
<b>BREEDING POLICY</b>	<b>6</b>
<b>FOR CATTLE AND BUFFALO</b>	<b>6</b>
<b>FOR SHEEP AND GOAT</b>	<b>7</b>
<b>FOR PIG AND POULTRY</b>	<b>7</b>
<b>STRATEGY</b>	<b>7</b>
<b>AI COVERAGE</b>	<b>8</b>
<b>REGIONAL AI COVERAGE</b>	<b>10</b>
<b>EFFECTIVENESS OF AI</b>	<b>13</b>
<b>INTRODUCTION</b>	<b>13</b>
<b>METHODOLOGY</b>	<b>13</b>
<b>RESULTS AND DISCUSSIONS</b>	<b>13</b>
<b>JOCV/JICA CONTRIBUTION</b>	<b>15</b>
<b>ARTIFICIAL INSEMINATION TRAINING</b>	<b>16</b>
<b>SOURCES OF GENETIC IMPROVEMENT</b>	<b>18</b>

**APPENDICES**

<b>APPENDIX 1 : AI PROGRESS, LN2 AND SEMEN (2047/48 – 2053/54)</b>	<b>22</b>
<b>APPENDIX 2 : AI PROGRESS (2018/19 – 2053/54)</b>	<b>24</b>
<b>APPENDIX 3 : PHYSICAL FACILITIES AVAILABLE UP TO 2053-54</b>	<b>25</b>
<b>APPENDIX 4 : ARTIFICIAL INSEMINATION TRAINING</b>	<b>29</b>
<b>APPENDIX 5 : CAPITAL ITEMS</b>	<b>31</b>
<b>APPENDIX 6 : NO. OF AI CENTERS AT THE END OF 2053/54</b>	<b>33</b>
<b>APPENDIX 7 : REGION WISE AI PROGRESS (2047/48) – 2053/54)</b>	<b>34</b>
<b>APPENDIX 8 :DISTRICT WISE AI PROGRESS, SEMEN AND LN2 CONSUMPTION 2053/54</b>	<b>35</b>
<b>APPENDIX 9 :ANNUAL TARGET AND PROGRESS 2053/54</b>	<b>38</b>
<b>APPENDIX 10 :DETAILS OF REVENUE OF DISTRIBUTED SEMEN 2053/54</b>	<b>39</b>
<b>APPENDIX 11 :MANPOWER OF ABAI</b>	<b>41</b>
<b>APPENDIX 12 : MONTHLY AI PROGRESS REPORT 2053/54</b>	<b>42</b>
<b>APPENDIX 13 : APPROVED BUDGET AND ACTUAL EXPENSES</b>	<b>44</b>
<b>APPENDIX 14 :BULLS PEDIGREE RECORDS</b>	<b>45</b>
<b>APPENDIX 15 :IMPACT OF AI IN TERMS OF MILK PRODUCTION</b>	<b>46</b>
<b>APPENDIX 16 : MONITORING FORMAT</b>	<b>50</b>
<b>APPENDIX 17 : SURVEY OF FARMERS RECEIVING AI SERVICES</b>	<b>52</b>
<b>APPENDIX 18: ARTIFICIAL INSEMINATION CENTER FORMAT</b>	<b>55</b>
<b>APPENDIX 19 : AI PROGRESS REPORT FORMAT</b>	<b>56</b>
<b>APPENDIX 20 :NATURAL INSEMINATION PROGRESS REPORT FORMAT</b>	<b>57</b>
<b>APPENDIX 21:MONITORING OF BREEDING MALE FORMAT</b>	<b>58</b>
<b>APPENDIX 22: HEAT SYNCHRONIZATION FORMAT</b>	<b>59</b>

## HISTORICAL BACKGROUND

Livestock development has been initiated with the importation of European cows from the United Kingdom by Shri 3 Jang Bahadur Rana in around Bikram Era 1917. After this period, many improved cows were brought in by then Ranas from India. People working in Rana palace began to raise such high yielding cows.

Officially, Livestock Improvement Section was established in B.E. 2008 (1952) with the main objective to increase the genetic potentialities of indigenous cows in terms of milk yield through the introduction of exotic breed such as Red Sindhi, Sahiwal, Jersey and Brown Swiss using "grading-up" system of breeding. Limited number of graded cows, commonly known as crossbred animals were produced in Kathmandu valley. To produce a significant number of improved cattle, artificial insemination program with warm semen was commenced in B.E. 2017-18 (1961-62) in the capital city. From the fiscal year 2018-19 (1962-63) warm semen of Jersey, Red Sindhi, Holstein and Brown Swiss were used to upgrade the native cows.

To speed up the AI program, Artificial Insemination Project was set up at Tripureswor, Kathmandu in 2025-26 (1969-70). The AI program received momentum when frozen semen and warm semen were used for artificial breeding after the establishment of Liquid Nitrogen (LN) Plant at Tripureswor in 2037-38 (1980-81). The Project was renamed as Animal Breeding Division (ABD) which was moved to Khumaltar in 2041-42 (1985-86). The ABD broadened its breeding activities in cattle, buffalo, sheep, goat, pig, and chickens with the main emphasis on artificial insemination in cattle and buffalo. After the ABD has become a part of Nepal Agriculture Research and Services Center (NARSC), the AI program was named as "Artificial Insemination Services" under HMG/N in 2046 (1989). This Services was renamed as "Animal Breeding and Artificial Insemination Program" in 2048/49 (1991/92) under the Department of Agriculture Development (DoAD). When the Department of Livestock Services was recreated in 2051/52 (1994/95), the Program was renamed as "Animal Breeding and Artificial Insemination Section" with the following vision and objectives:

## VISION

Nepal is rich in domestic animal diversity. Genetic potentialities of indigenous livestock in terms of disease resistant and adaptability in a harsh condition will be conserved, and harnessed with the proper induction of exotic blood. Low producing nondescript animal will be upgraded through artificial and natural breeding with suitable exotic breeds in different Eco-zones. New breeds of cattle will be developed using native and exotic blood adaptable to different Eco-belts of the country. Productivity of each domesticated animal will be increased to meet the demand of the Nepalese populace. Import substitution production for milk and meat will be given top priority in the national perspective. As slaughtering of cattle in Hindu religion is banned and, buffalo being a dual purpose (milk and meat), disease resistant and best roughage converter should be the choice of animal for both milk and meat productions, therefore, buffalo will be promoted and propagated in Nepal. However, as buffalo alone cannot meet the national demand for milk and draft power, therefore, upgrading of nondescript cattle with exotic blood up to 62.5 % will be continued to increase the production and productivity.

## OBJECTIVES

### *Long Term*

- Development of suitable breeds of cattle for hills and Terai belts in collaboration with Animal Breeding Division of Nepal Agriculture Research Council (NARC) and Institute of Agriculture and Animal Science (IAAS), Rampur.
- Conservation through utilization of endangered domestic animal genetic resources such as Yak, Lulu, Achhame cattle, Bhyanglung, Baruwai, Kage, Lampuchhre sheep, Chyangra, Khari goat, Chwonche, Hurrah pig, and Sakini fowl through sustainable group breeding scheme.
- Increase the production and productivity of nondescript animals by artificial and natural breeding system.
- Self reliance in improved animal genetic resource supply through establishment of organized resource farms in private sector
- Import substitution of milk and meat products by increasing the domestic production

### *Short and Medium Term*

- Complete characterization, identification, selection, conservation and utilization of indigenous animal genetic resources for better production and productivity
- Increase the productivity of cattle and buffalo through artificial insemination program in road approachable milk shed areas
- Provide technical guidelines for the establishment of improved animal genetic resources (cattle, buffalo, goat, sheep, pig and poultry) centers in private sector.
- Select superior sires and dams in cattle and buffalo for the production of bulls to be used in frozen semen production through Embryo Transfer Technology.
- Expand the AI coverage either through intensive AI program in selected potential districts or through privatization of AI services in the potential areas

## BREEDING POLICY

### *For Cattle and Buffalo*

1. In Middle Hills, foothills and Terai, Jersey bull /semen should be used to upgrade the nondescript and crossbred cows. The exotic blood level should not be increased more than 62.5 %. This 62.5% blood level is allowed in the areas where there is plenty of green grass, feed and improved management.
2. In Terai, Hariana bull/semen should be used to upgrade the native cows for both milk and draft purpose.
3. In the dairy pocket areas, where Holstein and Brown Swiss crossbred animals are already present will be maintained at 62.5 % of respective exotic blood level. Holstein and Brown Swiss bull/semen will be used to upgrade nondescript cows up to the 62.5 % of exotic blood level and degrade those animals which have more than 62.5 % of exotic blood level in them through back-crossing. This is allowed only in the areas where there is plenty of green grass, feed and improved management.

4. Murrah buffalo bull/semen should be used to upgrade low producing buffalo cows. There will not be any restriction in Murrah blood level maintenance especially in the Terai belt. However, 62.5 % of the Murrah breed should be the upper limit for buffalo cows in the Middle hills.
5. The productivity of Yak, Lulu, Achhame cattle will be improved through group breeding scheme to conserve and maintain their population up to 5000 heads.
6. Bull exchange program between user groups will be followed to check inbreeding defects.
7. In intensive AI coverage districts, nondescript bull elimination program should be launched for controlled breeding so that desired exotic blood level is maintained in the herd.

#### ***For Sheep and Goat***

1. Carpet wool type breed Border Leicester, Romney Marsh will be introduced to upgrade Kage and Baruwal sheep.
2. Barberi breed will be used to increase the body weight of Khari and nondescript goat.
3. No exotic blood will be introduced to increase the productivity of Bhyanglung and Lampuchhre sheep, Chyangra and Sinhal goat. Instead selective group breeding scheme will be followed to improve the pure line's productivity.
4. Ram and buck exchange program between user groups will be followed to check inbreeding.
5. Artificial insemination program will be launched for the sheep and goat breed improvement.

#### ***For Pig and Poultry***

1. Pure breeding of Landrace, Yorkshire, Hampshire and Duroc will be encouraged. Crossbreeding and Criss-crossing among these breeds will be practiced for commercial pork production.
2. New Hampshire and Aurtolorp breed of poultry will be used to improve egg and chicken production in the backyard farming in the villages.
3. Artificial insemination program will be launched for the pig and poultry breed improvement.

To implement the above breeding policy a series of breeding strategy has to be adopted which is listed as follows:

#### **STRATEGY**

1. Incorporation of conservation and maintenance of indigenous animal genetic resources program in the annual program of District Livestock Services Office (DLSO).
2. Intensive mobile AI Program in the potential areas of the potential district.
3. Expansion of AI services through private artificial inseminator (PAI) especially in the urban and commercial dairy farm areas
4. Distribution of serviceable quality breeding bulls of cattle and buffalo produced through Embryo Transfer Technology (ETT) especially in road-inaccessible areas.
5. Development of suitable breeds of cattle for different ecological zones in collaboration of Nepal Agriculture Research Council / IAAS.
6. Strengthening Animal Breeding & Artificial Insemination Section and 3 Semen Banks for quality frozen semen production.

progress rate for this region can be attributed to lack of proper AI Extension services. For this reason, DLSOs of the Central Region have to be closely monitored by both Semen Bank Nepalganj and Regional Directorate. Given the increasing number of AI centers in this region, there is an urgent need for introducing mandatory mobile AI services by the DLSOs so that better AI coverage is made possible in future.

## EFFECTIVENESS OF AI

### **Introduction**

Although the artificial insemination program was initiated in B.E. 2017-18, actual efficacy of AI has not been carried out through proper monitoring mechanism. Our target-oriented plan did not include the target for finding out the real output of the AI program which covered 46 districts through 115 AI centers. Target was stereotype such as AI services - 24473 in cow and buffalo, liquid nitrogen production and distribution - 27000 liter, frozen semen production - 15000 doses. Because of this planning flaws we never know the actual impact of the AI services in terms of how many number of genetically improved cows and buffaloes were produced through AI. To address such problems, this section has redefined its objectives and included monitoring and evaluation of 43 AI run districts in its 2053-54 program as the main component so as to find out effectiveness of AI in each AI districts.

### **Methodology**

From each AI - run districts at least 40 cattle's owners were randomly selected (random number were generated by the computer on the basis of AI services done from Shrawan, 2052 to Marg, 2052) in order to get the required information of at least 30 animals. Same sampling method was applied in case of buffalo. Since the number of buffalo received AI was very limited and almost none in most districts, buffalo number could reach up to above stated figure. The ABAI and Animal Breeding Division, NARC sent technicians to 13 districts providing monitoring formiats (See Appendix-14) developed. They went door to door of each randomly selected farmer accompanied by the AI technician of the district and filled the format.

### **Results and Discussions**

Data were inputted into the computer and analyzed with simple mathematics to find out the conception rate in animal basis and AI basis.

$$\text{Conception rate (AI basis)} = \frac{\text{No. of pregnant/calf delivered animal}}{\text{No. AI services}} \times 100$$

$$\text{Conception rate (Animal basis)} = \frac{\text{No. of pregnant/calf delivered animal}}{\text{No. of AI animals}} \times 100$$

Out of thirty-five districts closely monitored, Rupendehi and Kathmandu districts showed the highest conception rate on AI basis (53.19%) followed by Sarlahi (48.14%), Dang (47.05 %) and so on, with Udaypur having the lowest (10 %) as shown in the Table 2 The average conception rate on AI basis was 34.72 %. This means that only 35 calves were delivered out of

100 AI services. This figure seems to be the lowest in the world. Low conception rate may be due to following factors: (1) When the animal repeats her estrus cycle after the first or second AI, farmers use local bull or sale (15%), (2) Untrained technician for efficient AI, (3) Untimely insemination and (4) Poor heat detection

**Table 2 Conception rate of cow**

S.N	District	Total Monitored animal	Prgnant or Calf Born	Concep rate (Anim. basis)
1	Ilam	32	10	31.25
2	Jhapa	29	9	31.00
3	Morang	22	10	45.00
4	Sunsari	30	10	33.33
5	Saptari	24	6	25.00
6	Siraha	30	13	43.33
7	Udayapur	10	1	10.00
8	Dhanusha	48	12	25.00
9	Mahottari	27	9	48.14
10	Sarlahi	12	3	25.00
11	Bara	25	10	40.00
12	Parsha	24	4	16.66
13	Rautahat	28	11	39.28
14	Makwanpur	28	10	35.70
15	Kabhre	12	15	38.70
16	Chitawan	50	17	34.00
17	Lalitpur	30	12	40.00
18	Kathmandu	69	32	53.19
19	Rashuwa	17	4	23.53
20	Nuwakot	21	8	38.00
21	Rupendehi	47	25	53.19
22	Palpa	16	6	37.50
23	Gorkha	12	5	41.66
24	Tanahu	19	8	42.01
25	Kaski	19	12	46.15
26	Syangja	26	8	30.76
27	Kapilbastu	42	13	30.95
28	Salyan	14	3	21.42
29	Pyuthan	32	11	34.37
30	Dang	17	8	47.05
31	Banke	30	8	26.66
32	Bardiya	31	11	32.35
33	Kanchanpur	22	6	27.27
34	Kailali	35	15	42.85
35	Doti	24	6	25.00
<b>Total</b>		<b>957</b>	<b>351</b>	<b>34.72</b>

When eighteen districts were closely monitored for the efficacy of artificial insemination in buffalo, average conception rate on AI basis is found to be 28.84 % (Table 3.). The low conception rate may be due to farmer's unwillingness to bring his animal for the second or third AI, untimely insemination, poor heat detection and untrained AI technicians.



Table 3 Conception Rate of Buffalo

S.N	District	Total Monitored animal	Prgnant or Calf Born	Concep rate (Anim. basis)
1	Jhapa	5	2	40.00
2	Siraha	30	8	26.26
3	Dhanusha	23	6	26.00
4	Mahottari	13	3	23.07
5	Sarlahi	7	1	14.28
6	Bara	5	1	20.00
7	Parsa	6	1	16.66
8	Palpa	8	4	50.00
9	Gorkha	15	2	13.33
10	Tanahu	12	4	33.33
11	Kaski	8	2	25.00
12	Syangja	4	1	25.00
13	Kapilbastu	27	13	48.00
14	Dang	21	7	33.33
15	Banke	27	14	51.85
16	Bardiya	33	12	36.36
17	Kanchanpur	15	3	20.00
18	Kailali	30	17	56.56
	<b>Total</b>	<b>289</b>	<b>101</b>	<b>28.84</b>

The estimated conception rate from the random sampling technique seems to be rather over estimated due to out liars. In the absence of proper sample size, it is difficult to withdraw valid statistical inferences. However, these crude information indicate current trend in conception rates of AI in cattle and buffalo.

### JOCV/JICA CONTRIBUTION

Mr. Sugiura was the first JOCV to serve this section from July 1985 to July 1988. During his tenure, he demonstrated an excellent ability for the efficient AI in cows. He also worked in the laboratory for production of frozen semen.

Mr. Matsumoto was the second JOCV to work in the AI program from July 1989 to July 1991. He efficiently worked in the laboratory for processing and storing the frozen semen. He also taught the AI trainees for efficient artificial insemination in cattle.

Mr. Shimomura was the third JOCV working in this AI program from April 1990 to April 1992. During period, he and Mr. Matsumoto managed to construct a trainer's cow shed (18 cow capacity) with the financial help of JOCV/JICA in addition to his main job in collecting, processing and storing the frozen semen.

Dr. Yoichiro FUJIKAWA served this ABAI section as a JOCV with a tenure of two years. He completed his tenure on April 6, 1994 and returned to Japan on April 7, 1996. During his stay in Nepal, he managed to bring a plastic cow model for

training, 38 liquid nitrogen containers, 23 semen refrigerators from JOCV/JICA. Without these equipment this ABAI Section could not meet district demand of LN on time.

He is now replaced by Dr. Shino KANEKO from August 29, 1996. She will serve this section for two years. Her main job will be quality frozen semen production, correct diagnosis of reproductive disorders and their treatment. She will also manage to add some more AI equipment from JOCV/JICA for this section during her tenure

## ARTIFICIAL INSEMINATION TRAINING

During the fiscal year 2052-53 (1995-96), altogether 32 JT/JTAs from 22 different districts were trained by this section in 3 different lots by Dr. Laxman Sherchand, Mr. Purna P Manadhar and Dr. Tej B Rijal (Appendix- 4). In this training period, they were given a practical knowledge of reproductive tract, heat detection, repeat breeding, heat synchronization, liquid nitrogen transportation and semen handling, efficient AI techniques, record maintenance, and number of AI practices in trainer cows. In fiscal year 2053/54 (1996/97), given the popularity and usefulness of the aforesaid AI training, a more practical and pragmatic AI training were given to 24 JT/JTAs of 22 districts. Apart from this training 25 trainees of CTEVT, Uttarpani, Dhankuta were also trained in basic AI training from this Section. The name and address of AI trainees is presented in Table 1.4.

**Table 4 A.I. Training Program from 2053/5/2 to 2053/5/15**

### List of Training Participants

S.N	Name	Post	District DLSD
1	Mr. Chet Narayan Raya	JTA	Nawalparasi
2	Mr. Jit Narayan Bhagat	..	Dhanusha
3	Mr. Bal Dev Yadav	..	Makwanpur
4	Mr. Buddhi N. Neupane	..	Rasuwa
5	Mr. Anil Lama	..	Kabhre
6	Mr. Sita Ram Mahara	JT	Baglung
7	Mr. Ram Dular Yadav	JTA	Mahottari
8	Mrs. Shila Pant	..	..
9	Mrs. Jangilal Shaha	JT	Sarlahi
10	Mr. Yogendra Yadav	JTA	Chitwan
11	Mr. Bimal Pd. Sharma	JT	Parbat
12	Ms. Sita Bhattarai	JT	Kaski

**A.I. Training Program from 2053/6/13 to 2053/6/26**

S.N	Name	Post	District DLSD
1	Mr. Ganesh K. Pradhan	JTA	Sunsari
2	Mrs. Kalpana Khanal	..	Tanahu
3	Mr. Jagat N. Mandal	..	Jhapa
4	Mr. Ram Bahadur Shaha	..	Saptari
5	Mr. Chandeshwar P. Shah	..	Kathmandu
6	Mr. Gulab Prasad Singh	..	Morang
7	Mr. Kaushalendra Bhagat	..	Ilam
8	Mr. Chandra Bdr. Rana	JT	Palpa
9	Mr. Dev Narayan Pandit	JTA	Syangja
10	Mr. Indra Bahadur Bhatta	JT	Gorkha
11	Mr. Pramod Jha	..	Siraha
12	Mr. Phuleswar Mandal	JTA	Morang

**A.I. Training Program from 2053/5/30 to 2053/6/4 (Group A) CTEVT**

S.No.	Name	Address
1	Mr. Harka Bahadur	CTEVT Uttarpani
2	Mr. Sapta Bahadur Rawal	CTEVT Uttarpani
3	Mr. Sher Bahadur Jirel	CTEVT Uttarpani
4	Mr. Badri Narayan Yadav	CTEVT Uttarpani
5	Mr. Bhim Singh Gurung	CTEVT Uttarpani
6	Mr. Matuk Lal Chaudhari	CTEVT Uttarpani
7	Mr. Tanka Bahadur Karki	CTEVT Uttarpani
8	Mr. Kush Bahadur Jirel	CTEVT Uttarpani
9	Mr. Shyam Sundar Yadav	CTEVT Uttarpani
10	Mr. Lakh Bahadur Rai	CTEVT Uttarpani
11	Mr. Prachanda Khadka Chhetri	CTEVT Uttarpani
12	Mr. Narayan Prasad Neupane	CTEVT Uttarpani

**A.I. Training Program from 2053/6/6 to 2053/6/11 (Group B) CTEVT**

S.N	Name	Address
1	Ms. Gita Dhamal	CTEVT Uttarpani
2	Ms. Bhim Kumari Rai	CTEVT Uttarpani
3	Mr. Dil Bahadur Thapa	CTEVT Uttarpani
4	Mr. Jagat Bajgain	CTEVT Uttarpani
5	Mr. Maheswar Dhakal	CTEVT Uttarpani
6	Mr. Kaji Bahadur Shrestha	CTEVT Uttarpani
7	Mr. Achyut Acharya	CTEVT Uttarpani
8	Mr. Hum Raj Timilsina	CTEVT Uttarpani
9	Mr. Shuk Raj Limbu	CTEVT Uttarpani
10	Mr. Makar Rai	CTEVT Uttarpani
11	Mr. Mankumar Rai	CTEVT Uttarpani
12	Mr. Rajendra Bist	CTEVT Uttarpani
13	Mrs. Gauri Devi Thapa	CTEVT Uttarpani

## APPENDICES

### Appendix 1 : AI Progress, LN2 and Semen (2047/48 – 2053/54)

#### AI Progress Report 2047-48

S.N	Region	Annual target	Total AI progress			Total Distribution	
			Cow	Buffalo	Total	LN	Semen
1	Eastern	2150	2157	420	2577	3420	4405
2	Central	7270	12291	896	13187	8420	14301
3	Western	1842	1824	658	2482	5926	10814
4	Mid-west	580	187	46	233	716	1412
5	Far-west	0	0	0	0	0	0
	Total	11842	16459	2020	18479	18482	30932

#### AI Progress Report 2048-49

S.N	Region	Annual target	Total AI progress			Total Distribution	
			Cow	Buffalo	Total	LN	Semen
1	Eastern	2970	2516	1073	3589	5639	5619
2	Central	14052	12932	1094	14026	10323	19008
3	Western	2930	2767	894	3661	4349	4740
4	Mid-west	670	250	142	392	2670	1750
5	Far-west	75	0	0	0	178	128
	Total	20697	18465	3203	21668	23159	31245

#### AI Progress Report 2049-50

S.N	Region	Annual target	Total AI progress			Total Distribution	
			Cow	Buffalo	Total	LN	Semen
1	Eastern		3487	888	4375	3707	4208
2	Central		10916	1062	11978	10967	11257
3	Western		3628	1083	4711	2388	6010
4	Mid-west		563	363	926	332	798
5	Far-west		74	55	129	30	15
	Total		18668	3451	22119	17424	22288

**AI Progress Report 2050-51**

S.N	Region	Annual target	Total AI progress			Total distribution	
			Cow	Buffalo	Total	LN	Semen
1	Eastern	2715	2910	696	3606	4730	4714
2	Central	11455	9273	676	9949	13828	12370
3	Western	3260	3370	925	4295	1424.5	3512
4	Mid-west	300	322	366	688	2541	1541
5	Far-west	370	129	148	277	908	311
	<b>Total</b>	<b>18100</b>	<b>16004</b>	<b>2811</b>	<b>18815</b>	<b>23431.5</b>	<b>22448</b>

**AI Progress Report 2051-52**

S.N.	Region	Annual target	Total AI progress			Total Distribution	
			Cow	Buffalo	Total	LN	Semen
1	Eastern	3350	3775	722	4497	5281	5657
2	Central	3145	6964	569	7533	12495	13762
3	Western	3570	3661	781	4442	5556	8733
4	Mid-west	580	247	497	744	2165	580
5	Far-west	360	175	161	336	420	275
	<b>Total</b>	<b>11005</b>	<b>14822</b>	<b>2730</b>	<b>17552</b>	<b>25917</b>	<b>29007</b>

**AI Progress Report 2052-53**

S.N	Region	Annual target	Total AI progress			Total distribution	
			Cow	Buffalo	Total	LN	Semen
1	Eastern	6160	3990	669	4659	4607	6478
2	Central	11815	9992	763	10755	15047	15339
3	Western	3895	4893	1563	6456	883	8805
4	Mid-west	695	337	419	756	2009	1634
5	Far-west	350	149	131	280	578	446
	<b>Total</b>	<b>22915</b>	<b>19361</b>	<b>3545</b>	<b>22906</b>	<b>23124</b>	<b>32702</b>

**AI Progress Report 2053-54**

S.N	Region	Annual target	Total AI progress			Total distribution	
			Cow	Buffalo	Total	LN	Semen
1	Eastern	5470	4635	913	5548	5938	6829
2	Central	12450	10594	856	11450	17340	17251
3	Western	4565	5418	1908	7326	6196	8652
4	Mid-west	1580	444	631	1075	3219	1495
5	Far-west	590	296	170	466	1075	856
	<b>Total</b>	<b>24655</b>	<b>21387</b>	<b>4478</b>	<b>25865</b>	<b>33768</b>	<b>35083</b>

Appendix 2 : AI Progress (2018/19 – 2053/54)

Annual Artificial Insemination from 2018/19 – 2053/54

Fiscal Year	Number of A. I.
2018/19 (1961/62)	36
2019/20 (1962/63)	480
2020/21 (1963/64)	854
2021/22 (1964/65)	1096
<b>Total</b>	<b>2466</b>
2022/23 (1965/66)	1476
2023/24 (1966/67)	2381
2024/25 (1967/68)	1818
2025/26 (1968/69)	1909
2026/27 (1969/70)	1550
<b>Total</b>	<b>9134</b>
2027/28 (1970/71)	1438
2028/29 (1971/72)	2049
2029/30 (1972/73)	2269
2030/31 (1973/74)	1986
2031/32 (1974/75)	3421
<b>Total</b>	<b>11163</b>
2032/33 (1975/76)	2675
2033/34 (1976/77)	6075
2034/35 (1977/78)	7732
2035/36 (1978/79)	8208
2036/37 (1979/80)	7413
<b>Total</b>	<b>32103</b>

Fiscal Year	Number of A. I.
2037/38 (1980/81)	5753
2038/39 (1981/82)	7383
2039/40 (1982/83)	10810
2040/41 (1983/84)	15896
2041/42 (1984/85)	16050
<b>Total</b>	<b>55892</b>
2042/43 (1985/86)	18000
2043/44 (1986/87)	18000
2044/45 (1987/88)	18000
2045/46 (1988/89)	21720
2046/47 (1989/90)	19929
2047/48 (1990/91)	18594
2048/49 (1991/92)	21458
<b>Total</b>	<b>135701</b>
2049/50 (1992/93)	22119
2050/51 (1993/94)	18475
2051/52 (1994/95)	17552
2052/53 (1995/96)	22906
2053/54 (1996/97)	25865
<b>Total</b>	<b>106917</b>

**Appendix 4 : Artificial Insemination Training**

Number of AI trainees in 2052-53 (1995-96)

S.No	Trainee's Name	Position	District	Duration
1	Bishnu Bista	JTA	ABAI, Khumal	052-6-29 to 52-7-3
2	Taranath Sharma	JTA	Palpa	"
3	Deviram Marasaini	JT	Palpa	"
4	RB Deuja	JTA	Bhaktapur	"
5	Arjun Khadka	JTA	LDF, Jiri	"
6	Ram Prasad Khanal	FA	Rasuwa	"
7	RAdhesh Pradhan	JT	Rasuwa	"
8	Mrs. Gaurdevi Thapa	JTA	Lalitpur	"
9	Salikram Paudel	JTA	Chitwan	"
10	Yogendra Yadav	JTA	Chitwan	"
11	Narayan P Bhusal	JT	Parbat	52-10-24 to 52-11-4
12	Shivram Shreshtha	JTA	Parbat	"
13	Shailendra P Singh	JT	Pyuthan	"
14	Kailash Thapa	JTA	Salyan	"
15	Chandrakant Pant	JTA	Doti	"
16	Udish Das	JTA	Syangja	"
17	Mrs. Rammaya Dhakal	JTA	Bhaktapur	"
18	Gagan B Bista	JT	ABAI, Khumal	"
19	Ashol K Upadhyaya	JT	Bardia	"
20	Rewat Raj Sah	JTA	Tanahu	"
21	Jagat B Singkhada	JT	Chitwan	"
22	Basant P Jamarkatel	JT	Dhading	"
23	Chandra B Magar	FA	Saptari	53-2-9 to 52-2-18
24	Dev Narayan Yadav	JT	Illam	"
25	Arun Kumar Singh	JTA	Udaipur	"
26	Hari Bahadur Dhital	JT	Tanahu	"
27	Cansi Raj Joshi	JT	Baitadi	"
28	Mrs. Lalita Thapa	JTA	ABAI, Khumal	"
29	Tara Datta Awasthi	JTA	Kanchanpur	"
30	Bharat Raj Kandel	JT	Jhapa	"
31	Laxman Kumar Shrestha	JTA	Sindhupalchok	"
32	Dev Nath Yadav	JT	Panchthar	"

Number of AI trainees in 2051-52 (1994-95)

S.No	Trainee's Name	Position	District	Duration
1	Jangi Lal Sah	JT	Parsa	051-5-19 to 51-5-24
2	Krishna B Nagakoti	JT	Kavre	"
3	Sanu Bhai K.C.	JTA	Kathmandu	"
4	Dharma Nanda Joshi	JTA	Kathmandu	"
5	Tarani P Yadav	JT	Sindhupalchok	"
6	Dhurba Rayan Chaudari	JTA	Lalitpur	"
7	Hridaya Ram Acharya	JTA	Bhaktapur	"
8	Shyam Raj Devkota	JTA	Rasuwa	"
9	Hari Govida Pandey	JT	Nuwakot	"
10	Moti P. Lamichhane	JTA	Khumaltar	"
11	Rup Narayan Shrestha	JTA	Kapilbastu	51-11-14 to 51-11-19
12	Barud Kumar Thakur	JTA	Siraha	"
13	Bhoj Raj Khanal	FA	Pokhara	"
14	Ramesh P Neupane	JT	Dolakha	"
15	Jhalmath Neupane	JTA	Tanahu	"
16	Deva Kumari Shrestha	JTA	Shyanja	"
17	Hum Narayan Shrestha	JT	Shyanja	"
18	Santosh Gopal Shrestha	JTA	Nawalparasi	"
19	Hari Prasad Khanal	JT	Gorkha	"
20	Parsu Ram Singh Basnet	JT	Gorkha	"
21	Utar Kumar Rijal	JTA	Bara	"
22	Lalit Kumar Lal	JT	Sindhupalchok	52-2-21 to 52-2-26
23	Saya Hama Jaki	Volent.	Syangja	"
24	Ganesh B Thapa	JTA	Parbat	"
25	Uttam Lal Das	JTA	Makawanpur	"
26	Ram Kumar Sharma	JTA	Dhankuta	"
27	Ram Niwas Yadav	JTA	Parsa	"
28	Firoz Ahmad Khan	JTA	Lalitpur	"
29	Keshav Shrestha	JTA	Sunsari	"
30	Chiranjibi Sharma	JTA	Kavre	"
31	Ram Prasad Yadav	JTA	Khumaltar	"
32	Achyut P Dhungel	JTA	Khumaltar	"



Appendix 6 :No. of A.I. Centers at the end of 2053/54			
AI Centres			
S.N.	District	No. of AI Centres	Name of the AI Center
<b>Eastern</b>			
1	Ilam	3	Aitabare, Phikkal, Ilam
2	Jhapa	1	Bhadrapur
3	Morang	7	Biratnagar, Raugali, Urlabari, Indrapur, Bahumi, Birat Gai, Umat gai,
4	Sunsari	4	Inaruwa, Itahari, Dharau, Tarabara
5	Dhankuta	1	Dhankuta,
6	Saptari	2	Rajbiraj, Mahuli
7	Siraha	4	Siraha, Simen bank Lahan, Golbazar, Bhagawanpur
8	Udaipur	1	Gaighat
9	Panchthar	1	Panchthar
	<b>Subtotal</b>	<b>24</b>	
<b>Central</b>			
10	Dhanusa	1	Janakpur,
11	Mahotary	1	Jaleswor
12	Sarlahi	1	Malangwa
13	Rautahat	1	Gaur
14	Bara	1	Kalaiya
15	Parsa	1	Birgaung
16	Makawanpur	2	Halauda, Chaughada
17	Chitawan	5	Bharalpur, Gitanagar, Ratnanagar, Khaireni, Rampur Campus
18	Dhading	2	Dhading, Khanikhola
19	Kathmandu	10	Kathmandu, Dachinkali, Sitapaila, Kirtipur, Dharmasthali, Balambu, Nayapati, Indrayani, Khadgabladrakali, Tripureswor
20	Bhaktapur	6	Bhaktapur, Nakhel, Bode, Kharipati, Changu, Dadhikot
21	Lalitpur	9	Lagankhel, Taiba, Chapagaun, Dhapakhel, Champi, Lamatar, Inadol, Khumal, NARC Khumal
22	Kavre	7	Dhulikhel, Nala, Khopasi, Kusadevi, Panchkhal, Banepa, Mahadevsthan
23	Sindhupalchok	1	Chautara
24	Dolakha	2	Manthali, Livestock Farm Jiri
25	Nuwakot	1	Bidur
26	Rasuwa	2	Betrawati, Kalikasthan
	<b>Subtotal</b>	<b>53</b>	
<b>Western</b>			
27	Gorkha	1	Gorakha,
28	Tanahu	3	Damauli, Baradi, Bel Chautara
29	Kaski	4	Pokhara, Sisauwa, Livestock Farm Pokhara, Agri Centre Lumlay
30	Parbat	1	Kusma
31	Syauja	2	Waling, Putalikhel
32	Palpa	1	Tansen
33	Nawalparasi	2	Nawalparasi, Jamunia
34	Rupendehi	5	Bhairahawa, Jogikuti, Kelwani, Ketwani, Semen bank Bhairahawa
35	Kapilbasi	2	Krisnanagar, Baggunya
36	Baglung	1	Baglung
	<b>Subtotal</b>	<b>22</b>	
<b>Mid-western</b>			
37	Dang	2	Ghorahi, Lamahi
38	Salyan	1	Salyan
39	Pyulhan	1	Bijubar
40	Banke	4	Nepalgaung, Kohalpur, Bageshwori, Semen bank Nepalgaung
41	Bardia	2	Mainapokhari, Bardia
42	Surkhet	2	Surkhet, Chinchu
	<b>Subtotal</b>	<b>12</b>	
<b>Far-Western</b>			
43	Doti	1	Dipayal
44	Baitadi	1	Baitadi
45	Kailali	1	Dhangadi
46	Kanchanpur	1	Mahendranagar
	<b>Subtotal</b>	<b>4</b>	
	<b>NEPAL</b>	<b>115</b>	

Appendix 10 : Details of Revenue of distributed semen 2053/54

S. N.	District	Imp. Frozen Semen		Khumal Semen		Semen distributed	Total A. I. Dose	Balance Semen	Total Reva. Received	Remarks
		Doses	Value	Doses	Value					
<b>Eastern</b>										
1	Panchthar	0	0	65	325	65	17	48	85	
2	Ilam	60	1500	252	1260	312	99	213	415	
3	Jhapa	320	8000	794	3970	1114	754	360	6754	
4	Morang	330	8250	1335	6675	1665	1217	448	13801	
5	Dhankuta	35	875	142	710	177	34	143	85	
6	Sunsari	212	5300	1155	5775	1367	1320	47	11345	
7	Saptari	85	2125	413	2065	498	407	91	4685	
8	Udaipur	51	1275	93	465	144	26	118	525	
9	Siraha	152	3800	370	1850	522	487	35	5835	
	<b>Sub-Total</b>	<b>1245</b>	<b>31125</b>	<b>4619</b>	<b>23095</b>	<b>5864</b>	<b>4361</b>	<b>1503</b>	<b>43530</b>	
<b>Central</b>										
10	Kathmandu	853	21325	2595	12975	3448	2736	712	27710	
11	Lalitpur	390	9750	954	4770	1344	1068	276	9725	
12	Bhaktapur	965	24125	1790	8950	2755	1031	1724	16010	
13	Kavre	240	6000	625	3125	865	353	512	3975	
14	Sindhupalchok	0	0	180	900	180	44	136	230	
15	Sindhuli	0	0	0	0	0	0	0	0	
16	Mahotary	70	1750	165	825	235	140	95	1545	
17	Dhanusha	180	4500	405	2025	585	400	185	2570	
18	Sarlahi	75	1875	255	1275	330	228	102	2100	
19	Rautahat	60	1500	341	1705	401	303	98	3635	
20	Bara	130	3250	526	2630	656	293	363	3270	
21	Parsa	175	4375	612	3060	787	708	79	4865	
22	Makawanpur	120	3000	540	2700	660	597	63	4935	
23	Chitwan	215	5375	710	3550	925	866	59	5755	
24	Dhading	50	1250	125	625	175	137	38	1180	
25	Nuwakot	0	0	150	750	150	117	33	515	
26	Rasuwa	15	375	45	225	60	38	22	405	
27	Dolakha	20	500	70	350	90	59	31	395	
	<b>Sub-Total</b>	<b>3558</b>	<b>88950</b>	<b>10088</b>	<b>50440</b>	<b>13646</b>	<b>9118</b>	<b>4528</b>	<b>88820</b>	
<b>Western</b>										
28	Gorkha	22	550	46	230	68	61	7	455	
29	Tanahu	207	5175	188	940	395	352	43	3620	
30	Kaski	421	10525	867	4335	1288	992	296	10350	
31	Syangja	132	3300	416	2080	548	455	93	5295	
32	Parbat	50	1250	145	725	195	123	72	935	
33	Baglung	10	250	103	515	113	14	99	70	
34	Palpa	73	1825	80	400	153	130	23	2325	
35	Nawalparasi	333	8325	799	3995	1132	812	320	10300	
36	Rupendehi	1431	35775	2887	14435	4318	3590	728	47655	
37	Kapilbastu	91	2275	180	900	271	210	61	2400	
	<b>Sub-Total</b>	<b>2770</b>	<b>69250</b>	<b>5711</b>	<b>28555</b>	<b>8481</b>	<b>6739</b>	<b>1742</b>	<b>83405</b>	

S. N.	District	Imp. Frozen Semen		Khumal Semen		Semen distributed	Total A.I. Done	Balance Semen	Total Rev. Received	Remarks
		Doses	Value	Doses	Value					
<b>Mid-Western</b>										
38	Banke	182	4550	223	1115	405	355	40	4460	
39	Bardia	135	3375	117	585	252	150	102	3309	
40	Dang	73	1825	107	535	180	69	111	1010	
41	Pyuthan	70	1750	101	505	171	202	-31	2080	
42	Surkhet	236	5900	55	275	291	196	95	3430	
43	Salyan	15	375	56	280	71	34	37	335	
	<b>Sub-Total</b>	<b>711</b>	<b>17775</b>	<b>659</b>	<b>3295</b>	<b>1370</b>	<b>1016</b>	<b>354</b>	<b>14624</b>	
<b>Far-Western</b>										
			0							
44	Kailali	298	7450	231	1155	529	338	191	5810	
45	Kanchanpur	20	500	110	550	130	48	82	0	NA
46	Baitadi	25	625	35	175	60	12	48	65	
47	Doti	82	2050	55	275	137	68	69	1400	
	<b>Sub-Total</b>	<b>425</b>	<b>10625</b>	<b>431</b>	<b>2155</b>	<b>856</b>	<b>466</b>	<b>390</b>	<b>7275</b>	
<b>Others</b>										
48	NARC, Tarahar	50	1250	205	1025	255	63	192		Cash Sale
49	LF, Jiri	160	4000	0	0	160	130	30		NA
50	Birat Gai	0	0	0	0	217	217	0		Cash Sale
51	Unat gai	0	0	0	0	448	448	0		Cash Sale
52	LARC	0	0	0	0	25	25	0		Cash Sale
53	NARC, Khumal	94	2350	20	100	114	45	69		Cash Sale
54	ABAI	0	0	0	0	2157	2157	0		Cash Sale
55	SB, Lahan	230	5750	480	2400	710	355	355	3855	
56	SB, Bhairawa	50	1250	121	605	562	562	0	5443	
57	SB, Nepalgan	54	1350	71	355	125	59	66	805	
58	New Agro cent	0	0	104	520	104	104	0		Cash Sale
	<b>Sub-Total</b>	<b>638</b>	<b>15950</b>	<b>1001</b>	<b>5005</b>	<b>4877</b>	<b>4165</b>	<b>712</b>	<b>10103</b>	
59	Cash Payment	1182	29550	2149	10745	3331	0	3331	40295	
	<b>Sub-Total</b>	<b>1182</b>	<b>29550</b>	<b>2149</b>	<b>10745</b>	<b>3331</b>	<b>0</b>	<b>3331</b>	<b>40295</b>	
	<b>NEPAL</b>	<b>10529</b>	<b>263225</b>	<b>24658</b>	<b>123290</b>	<b>38425</b>	<b>25865</b>	<b>12560</b>	<b>288052</b>	

\* Source:- District Livestock Development Office

**Appendix 18: Artificial Insemination Center**

1. Name of Service Center: \_\_\_\_\_
2. VDC: \_\_\_\_\_ Ward No: \_\_\_\_\_ District: \_\_\_\_\_
3. Type of Road to reach S C: \_\_\_\_\_
4. Distance form: (a) District Livestock Service Centre: \_\_\_\_\_ Km  
(b) Main Highway: \_\_\_\_\_ Km

4. Availability of A.I. Apparatus and sterilizing facility

Particulars	Quantity	Semen Refree .Capacity	Quantity
A I Gun 0.25ml.			
A I Gun 0.5ml.			
Liquid Nitrogen Container Capacity		Liquid Nitrogen Container Capacity	

5. Transportation facility: (a) Bicycle \_\_\_\_\_ (b) Motor Cycle \_\_\_\_\_  
(c) Vehical \_\_\_\_\_

6. Regular availability of semen and liquid nitrogen? If no, alternatives?  
\_\_\_\_\_

7. Progress review

Year	No of insemination		No. of calf born from A.I.		Remarks
	Cattle	Buffalo	Cattle	Buffalo	

8. Your suggestions to improve the effectiveness of A.I.?  
\_\_\_\_\_

# Annual Report



2053/54 (1996/97)

His Majesty's Government  
Ministry of Agriculture  
Department of Livestock Services

**Regional Directorate of Livestock Services**

Matepani, Pokhara  
Phone: 061-20454, 27585 Fax: 061-20454

# TABLE OF CONTENTS

1. INTRODUCTION .....	1
1. MOUNTAINS AND HIMALAYAN REGION .....	1
2. HILLY REGION .....	2
3. PLAIN (TERAI) REGION .....	2
2. OBJECTIVES AND STRATEGIES .....	3
3. PROGRAMS AND ACTIVITIES .....	4
3.1. EXTENSION SERVICES .....	4
3.2. ANIMAL HEALTH SERVICES .....	4
3.3. BREED IMPROVEMENT .....	4
3.4. ANIMAL NUTRITION AND PASTURE DEVELOPMENT .....	5
3.5. TRAINING .....	5
3.6. LOAN / CREDIT ARRANGEMENTS .....	5
4. IMPACT OF THE PROGRAM .....	6
4.1 FARMERS' MOTIVATION ON IMPROVED HUSBANDRY PRACTICES .....	6
4.2 AWARENESS IN ANIMAL HEALTH .....	6
4.3 INCREASE IN IMPROVED FEED PRODUCTION .....	6
4.4 IMPROVED HUSBANDRY PRACTICES .....	6
4.5 FARMERS' GROUP APPROACH AND THEIR ACTIVE INVOLVEMENT .....	6
5. MAIN ACHIEVEMENT .....	7
5.1 INCREMENT IN LIVESTOCK PRODUCTION .....	7
5.1.1 Milk production .....	7
5.1.2 Meat production .....	7
5.1.3 Egg production .....	7
5.1.4 Wool production .....	7
5.2 DEVELOPMENT OF POCKET AREAS .....	7
5.3 SUSTAINABLE PRODUCTION FROM LIVESTOCK .....	8
5.4 INVOLVEMENT OF PRIVATE SECTOR IN VETERINARY MEDICINE SUPPLY AND ESTABLISHMENT OF FEED INDUSTRIES .....	8
5.5 LOAN FROM FINANCIAL INSTITUTIONS .....	8
6. PROGRESS REPORT OF CENTRAL LEVEL OFFICES .....	9
7. PROBLEMS AND RECOMMENDATIONS .....	9

## ANNEXES

1. DESCRIPTION OF SERVICE CENTERS AND SUB CENTERS IN WESTERN DEV. REGION.....	10-11
2. DETAILS OF VILLAGE ANIMAL HEALTH WORKERS.....	12
3. ANIMAL HEALTH PROGRAM.....	13
4. LIVESTOCK DISTRIBUTION FOR BREED IMPROVEMENT.....	14
5. ANIMAL NUTRITION PROGRAM.....	15
6. TRAINING PROGRAM.....	16
7. LIVESTOCK EXTENSION PROGRAM.....	17
8. LIVESTOCK POPULATION IN THE REGION.....	18
9. FARMERS' GROUP AND WELFARE FUND.....	19
10. COLLECTION AND SUPPLY OF MILK IN THE REGION.....	20
11. PRODUCTION SCENARIO OF LIVESTOCK PRODUCTS.....	21
12. DESCRIPTION OF LIVESTOCK POCKET AREA.....	22
13. LIVESTOCK RELATED INDUSTRIES AND VETERINARY MEDICINE SHOPS.....	23
14. LOAN DISBURSEMENT IN THE DISTRICTS.....	24
15. SUMMARY OF ANNUAL PROGRESS (DISTRICT WISE).....	24
16. DETAILS OF MANPOWER.....	25
17. DETAILS OF ANNUAL BUDGET RELEASED, EXPENDITURE AND REVENUE.....	26
18. REASONS OF ACHIEVING LOW PROGRESS.....	27
19. REGIONAL LIVESTOCK TRAINING CENTER (ANNUAL PROGRESS).....	28
20. SEMEN BANK, BHAIRAHAWA (ANNUAL PROGRESS).....	28
21. LIVESTOCK DEVELOPMENT FARM POKHARA (ANNUAL TAR. AND ACHIEVEMENT).....	29
22. REGIONAL VETERINARY LABORATORY.....	30
23. VETERINARY QUARANTINE CHECKPOST, TRIVENI, NAWALPARASI.....	31
24. VETERINARY QUARANTINE CHECKPOST, BUTWAL, RUPANDEHI.....	31
25. VETERINARY QUARANTINE CHECKPOST, SUNAULI, BHAIRAHAWA.....	31
26. VETERINARY QUARANTINE CHECKPOST, SUTHAULI, KAPILVASTU.....	32

## 1. Introduction

Politically, the country is divided into the five 'Regions' with the aim of sharing developmental experiences and approaches in equal proportion. The Western Development Region occupies 9355 square kilo-meters area of the country and includes three zones and sixteen working districts. The region is situated between 82° 30' to 85° 15' longitude in the east and from 27° 15' to 29° 30' latitude in the north. The region shares boundaries with Tibet in the north and with Utter Pradesh of India in the south. Central Development and Mid-Western Development regions are the adjoining boundaries to its east and west respectively.

There is a wide variation in geo-climatic conditions, topography, transportation, means of communication, socio-economic status and culture of the people within the sixteen districts of this region. Because of such variation, this would be very hard to generalize the strategies and approaches in executing the program activities to enhance the agricultural and livestock production and productivity. For instance, the approaches and strategies for livestock development in Terai would be entirely different from those of the high altitude districts, viz. Manang, Mustang, northern parts of Gorkha and so on and vice versa.

Agriculture and livestock extension services play an important role in speeding up the developmental approach in adopting the improved farming system. Livestock services are being rendered to the farmers through District Livestock Service Offices (DLSOs) with their network of Livestock Service Centers and Sub-centers at the grass root level. Geographically and ecologically, the region can further be categorized into the following heads:

1. Mountains and Himalayan Region
2. Hilly Region
3. Plain or Terai Region

Despite these inevitable facts, some districts exhibit all these features within their district boundary, mainly because of altitudinal variation, facing of sites, micro-climatic and geographic features creating a complex situation for recommending an effective research and extension policy.

### 1. Mountains and Himalayan region

The mountains include high hills of the remote districts like Manang, Mustang and upper part of Gorkha district where as the Himalayan region occupies the area above 5500 masl. The Himalayan region is either sparsely inhabited or totally uninhabited. Some are dominant with transhumance system and rain shadow areas. Yaks and Chauries, Jopkyos, Chyangras (goat species) are some of the endangered species of ruminants in this region. The fodder cultivation is not easy and vegetation is sparse, though, natural grasslands are used only during monsoon (Late June to October). These features are associated mainly with the short supply of feed. Despite of all the regular livestock development activities preceded by the government, this predicament explicitly entails us to have an enormous effort needed for the improvement of deteriorated natural pasture resources to cope with the increasing livestock pressure.

On the other hand, some of the holy places like Kagbeni, Muktinath and Damodar Kunda lie in this part. The Himalayan peaks attaining the height up to 8167 m. extend across the



northern part of the country. The world famous peaks for trekking and expedition namely Dhaulagiri, Manaslu, Himchuli, Annapurna and Machhapuchhre glorify the importance of this region. This could be an alternate resource which is yet to be harnessed up to its potential to earn foreign exchange and thereby to improve the life style of the community.

The region is also the origin place of several rivers that flow down to the Terai forming the basis of irrigation to the terrain planes and for hydro power electricity generation for the country, as it is known fact that these two sources (irrigation and electricity) substantially contribute to commercialization of agriculture and livestock farming. Unlikely, Nepal, the Himalayan kingdom, has been advocated as the richest country next to Brazil in water resources, the electricity generated from these sources can be pragmatically utilized in developing aerial transportation, preferably the Rope Way (Cable car).

Livestock Service Offices distribute improved breed of animals like bulls, rams, cockerels and etc. to the farmers in order to improve the local animals through natural breeding. Besides this, income generating activities like poultry, sheep and goat rearing are encouraged to support the poor farmers. Meat, ghee, chhurpi, wool and woolen products like sweater, carpet and etc. are the important livestock products that are produced and marketed locally.

## **2. Hilly region**

This includes mid hills and shivalik region of Kaski, Syangja, Palpa, Gulmi, Arghakhanchi, Baglung, Parbat, Lamjung, Tanahun and lower part of Gorkha districts. The region exhibits a multi-cultural habitats regarding ethnic groups, casts and culture. The most common being Brahmins, Chhetries, Gurungs, Magars, Newars and Vaisyas. The famous places for pilgrimage are Gorakhkali and Manakamna in Gorkha, Chhinkeshwari and Chhabdabarahi in Tanahun, Bindhyabasini, Bhadrakali, Talbarahi in Kaski, Devasthan in Baglung, Galeshowar in Myagdi and Ridi in Gulmi district. Because of beautiful lakes like Fewa, Begnas and Rupa, this area is rapidly developing into a tourist center. Forests have a variety of native species of vegetation that are often used as fodder for animals.

This area is comparatively better facilitated with road links and markets. Thus, potentiality of commercialization in agriculture and livestock farming is higher. Transportation is one of the main determinant factors for commercial livestock production. Here, the farmers have better road and market accessibility, they are encouraged to adopt commercial livestock farming as their main occupation. Potential pocket areas of cattle, buffaloes, poultry, pigs and goats have been identified and managed through farmers' groups. Gradual increase in improved livestock population along the peri-urban areas has considerably contributed to the promotion of livestock related enterprises.

## **3. Plain (Terai) region**

Nawalparasi, Rupandehi and Kapilvastu districts fall in this region. These districts are fairly well facilitated with road network and are linked with National High Way (Mahendra Raj Marga) and Siddhartha Highway. Though, principal aborigines of this area are Tharus and local Teraian people but infiltration by the people from adjoining hills have also formed a major component of the population. In this area, the infrastructures essential for commercial livestock production, have been developed. Consequently, some important cattle and buffalo pocket areas have emerged. Likewise, annual and perennial pasture species, e.g. oats, peas, epil-epil, stylo, molasses, amrisso (broom grass), berseem etc. are being cultivated by the

farmers and a variety of native wild fodder trees are also available to maintain the regular supply of green forage particularly during the draught season.

Extension activities for livestock development are being carried out by DLSOs in collaboration with the line agencies involved in livestock production and other related activities. These include District Agriculture Development Office, District Forest Office, Soil and Water Conservation Office, Dairy Development Corporation, Women's Development Office and various commercial and development Banks and other financing agencies. These jointly work to identify the pocket areas, assess farmers' needs and launch the suitable programs through farmer's groups. In addition, some NGOs and INGOs are also involved in the livestock sector, however, there is need to have a better understanding and co-ordination between the government and non-government organizations.

## 2. Objectives and Strategies

The principal objectives are:

- 2.1. To increase livestock production and productivity through farmers' group approach. This includes the identification of farmers' need, mobilization of available resources and facilities in accordance with the national priorities. Based on the national priorities, the Regional Directorate of Livestock Services (RDLS) is responsible to facilitate in increasing the production and productivity of livestock in the region through effective planning monitoring and evaluation of breed improvement, nutrition and animal health programs implemented in the districts.
- 2.2. To provide technical support in the field of livestock production and animal health.
- 2.3. To improve the quality of local animals through introduction of exotic genetic materials.
- 2.4. To improve the nutritional status of animals through the introduction and conservation of forage and pasture resources.
- 2.5. To encourage private sector involvement in livestock development and marketing activities.
- 2.6. To arrange training programs related to animal health and production.
- 2.7. To co-ordinate the agencies involved in livestock development programs in the region.
- 2.8. To conduct workshops on program planning, budgeting, monitoring and evaluation of the progress achieved.
- 2.9. To generate employment opportunities and increase household income through promotion of livestock industries in the region.

To achieve the above objectives, the following major activities are being undertaken in the region:

1. Distribution of improved animals.
2. Distribution and production of fodder saplings and seeds.
3. Performance study of cross-bred animals.
4. Distribution of frozen semen to perform artificial insemination (A.I.) for local breed improvement of the native animals.
5. Promotion of institutional development for private sector involvement in the livestock sector.
6. Arrangement of training programs in livestock management, production and animal health aspects.

### 3. Programs and Activities

#### 3.1. Extension services

Extension services for livestock development are provided to the farmers in the region through DLSOs, mainly through Livestock Service Centers and Sub-centers. For uniform delivery of the services to the farmers, Livestock Service Centers and Sub-centers are located at least one in each Ilaka (political unit). A provision of two middle level manpower (JT and JTA) and one middle level manpower (JTA) respectively are there in the Livestock Service Center and Sub-center to disseminate the extension and other services. Apart from this, innovative farmers from the groups are also given training to support the programs in the villages. The trained farmers are supposed to provide services within the groups. Farmers' tours are organized at the district, national and international levels to have an exposure with new technology. The Regional Livestock Service Training Center (RLSTC) located in Pokhara is responsible to conduct such training programs for the farmers and middle level technicians.

To expedite the improvement in livestock production in a competitive manner, production competition, inter group competition, various demonstrations and etc. are organized frequently at farmers' field. This has helped in dissemination and adoption of improved technology. The details of the manpower trained at various level during the FY 053/54 (1996/97) and the description of service centers and sub centers are presented in Annex-1 and Annex- 2 respectively.

#### 3.2. Animal health services

The animal health services have been made available to the farmers by pursuing various programs through DLSOs. These programs are undertaken to protect the animals from epizootic, enzootic and sporadic diseases to reduce the losses in production and minimize the morbidity and mortality rate among the animals. The major activities include treatment, parasite control, vaccination against infectious and contagious diseases, arrangement of infertility camps, mobile veterinary clinics, collection of serum samples and other specimens to be dispatched them to the laboratory for disease diagnosis. The detail of the activities encompassing the animal health services conducted during the fiscal year 2053/54 (1996/97) is presented in Annex- 3.

#### 3.3. Breed improvement

In the districts where road network is not well established and Artificial Insemination (AI) services are not possible, natural breeding services have been provided through improved cattle and buffalo bulls, bucks, rams, cockerels, yaks etc. These animals have been distributed to the farmers at actual cost with transportation subsidies. The purpose of the program is to upgrade the existing low productive native animals and thereby increase the population of the improved cross-bred animals. The AI services are effectively being provided in Kaski, Syangja, Tanahun, Palpa, Gorkha, Kapilvastu, Rupandehi and Nawalparasi districts. The detail of distribution of animals and AI services is presented in Annex- 4.

### **3.4. Animal nutrition and pasture development**

Development of pasture and fodder based diets is most important to maintain nutritional status of the ruminants for their health and thus, to increase the production performance. In the high Himalayan region, the improved pasture seeds suitable for the area are distributed among the farmers' groups as mini-kits to cultivate and meet the nutritional requirements of the animals. The number of improved and cross-bred animals are in increasing trend in the country which comparatively require an improved husbandry technology. Now, farmers are aware of the fact that feeding of green forage round the year would apparently be the solution to increase the livestock production and maintain animal health at a cheaper rate. Thus, they are lured to have more green forage production at their hands. Also, the competitive market structures enforce them to have a fodder based livestock farming systems.

Despite of all, this program should be strongly linked with the Community Forestry to have better dimension and outcomes. Livestock husbandry in the country is relatively more dependent on forests; it receives more than 55% of the total requirement in terms of TDN from the forests. Thus, it can be clearly observed that these two sectors are inter related and in some ways interdependent, but forestry is getting tremendous pressure which adversely affects in forest degradation and ultimately deteriorating these natural resources. Therefore, forage and pasture production programs need to be included exclusively in the Community Forestry and be clearly defined in the national priority and policy.

In the mid hills and Terai, the following efforts have been made to mitigate the fodder scarcity:

- Production and distribution of fodder seedlings/saplings.
- Supply of seeds of oat, berseem, vetch, sorghum and other seasonal fodder species.
- Distribution of mini-kits of annual grasses and legumes like, oat, vetch, berseem, sorghum etc. and perennial grasses like, stylo, desmodium, molasses etc. to improve range-land.
- Support users' group in managing community pasture lands.
- Distribution of mineral blocks/urea molasses blocks.
- Encourage the farmers/farmers' groups to cultivate forage crops.

### **3.5. Training**

Training is the essential tool to disseminate improved technology to the farmers. To achieve this objective, training packages covering various aspects of livestock services based on the farmers' needs have been designed and conducted by the Regional Livestock Service Training Center. In addition, training programs are also conducted at the district, Service center and Sub center level by the DLSOs and/or NGOs. The total number of such trained manpower is 1208. The training programs conducted to train various level manpower during the FY 2053/54 (1996/97) are depicted in Annex- 6.

### **3.6. Loan / credit arrangements**

Financial investment is required for development of a pocket area. Small farmers can not switch to commercial scale production with their limited resources. They, therefore, need

## Annex- 1

## Description of Service Centers and Sub Centers in Western Development Region

a) Total Service Centers: 80

b) Total Sub Centers: 140

S. No.	Districts	Service Centers	Sub Centers	Location (V.D.C.)
1	Kaski	6	8	Sishuwa, Mauja, Thuma Kodanda, Ghachowk, Pokhara Sub-Metropolis (Pardibirauta), Dhikur pokhari, Hemja, Majhathana, Lekhnath, Arva, Rupakot, Deurali, Lwaghalel, Chhapakot
2	Tanahun	6	12	Dhorphirdi, Arunodaya, Ranipokhari, Baidi, Dharampani, Chandravati, Purkot, Barbhajyang, Rissti, Kyamin, Thaprek, Belchautara, Bhimad, Changa, Sundhara, Bhirkot, Keshabtar, Baradi,
3	Lamjung	4	9	Shera, Sundarbazar, Khudi, Borletar, Bichaura, Gauda, Chiti, Chandreshwor, Maling, Sotipasal, Bhoje, Chakratirtha, Besishahar
4	Gorkha	6	11	Sirdibas, Ghyampesal, Vhechhak, Palungtar, Taranagar, Tanglichowk, Barpak, Aarughat, Bhumlichowk, Bungkot, Manakamana, Choprak, Mirkot, Saurpani, Machhikhola, Taku, Jaubari
5	Syangja	8	7	Setidovan, Arjunchaupari, Dahathum, Waling, Jagatradevi, Birgha, Malayagakot, Biruwa, Phedikhola, Panchamul, Raangbhang, Pauwaigaunde, Chaapakot, Kyakmi, Thumpokhara
6	Manang	3	6	Bagarchaap, Ghayaru, Gyanbal, Tankimanang, Dharapani, Taal, Manang, Bharaka, Khangsahar, Nar
7	Mustang	3	6	Lete, Tukuche, Lomanthang, Marpha, Kaagbeni, Jomsong, Muktinath, Charang, Naar
8	Myagdi	4	8	Ghataan, Shikhaghar, Darbang, Takam, Jyamrukot, Babiyachaur, Lulang, Mudi, Rakhubhagavati, Pakhapani, Daanaa, Arthunge
9	Baglung	6	9	Kalika, Kushmishera, Harichaur, Kadebaas, Kharbang, Burtibang, Bihun, Dhamja, Narayanthan, Belbagar, Higdishir, Pandakhani, Bohora Gaun, Bongdovan, Dhorpatan
10	Parbat	4	8	Mallaj, Deupur, Devisthan, Hubaas, Ramja, Pakuwa, Khurkot, Thapathana, Lunckhu, Bachha, Ranipani, Katuwachaupari
11	Gulmi	6	7	Devisthan, Baletaksaar, Juhang, Phoksing, Dhurkot, Purkot, Tamghas, Majuwa, Shantipur, Ishma, Lumchha, Darling, Badagaun
12	Palpa	6	8	Rampur, Nayarnamtleash, Madanpokhara, Ringneraha, Haanthork, Chhahara, Sahalko (Aanpbhajyang), Hungi, Tahu, Jhadeba, Chhappani, Bataser (Palungmaunadi), Satyabati (Juthapauwa), Aargali

13	Nawalparasi	5	10	Rajahar, Tamshariya, Jamuniya, Kushma, Shivmandir, Aagyaunli, Dumkibas, Ramnagar, Manari, Jahada, Bhujahawa, Guhipasauni, Banjariya, Bulingtaar, Dhedhagaun
14	Kaplivastu	4	11	Pakadi, Kopwa, Bahadurganj, Maharajganj, Nandanagar, Pipra, Mahuwa, Parshohiya, Dangari, Baanganga, Thuniya, Bungdi Chaunata, Ganeshpur, Harnaampur
15	Arghakhanchi	4	7	Balkot, Thanda, Hansapur, Pokharathok, Arghatosh, Khan, Khilti, Aadgur, Narpaani, Baangla, Jukena
16	Rupandehi	5	13	Jogikuti, Semlar, Madhabaliya, Mainhiya, Roinihaba, Padsari, Gajeda, Maryadpur, Dhakdahi, Kerbaani, Parrohha, Suryapur, Dayanagar, Maanpakadi, Lumbini, Majhagaun, Rampur



Annex- 6

Training Program

S.No.	Districts	Service Center/ sub-center level (inno)												Regional level (T.T./T.A.) trainings																												
		Animal husbandry	Poultry keeping	Oats/ Sheep keeping	Rabbit keeping	Pig raising	Animal health	Poultry keeping	Milk production	Animal nutrition and fodder	Cattle /Buffalo raising	Rabbit keeping	Pig raising	Group workers fund est.	VAHW training	VAHW training (refresher)	FAO control	Commercial animal husbandry	AJ	AH and animal nutrition	Animal disease diagnosis	Rabbit raising	Chitra Sahay's service trainings																			
1	Meerut	T A	T A	T A	T A	T A	T A	T A	T A	T A	T A	T A	T A	T A	T A	T A	T A	T A	T A	T A	T A	T A	T A	T A																		
2	Syngra	13	5	5	2	2	5	4	3	3	5	3	3	2	2	2	2	2	1	1	2	2	1	1																		
3	Lamung	4	4	4	2	2	2	2	1	1	1	1	1	2	2	2	2	2	1	1	1	1	1	1																		
4	Govind	25	25	25	3	3	3	2	2	2	2	1	1	5	5	3	3	2	2	2	2	2	2	2																		
5	Tanahn	20	20	4	4	4	3	3	5	5	2	2	2	6	6	2	2	2	2	2	2	2	2	2																		
6	Kwaki	10	10	4	4	4	4	4	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2																		
7	Munang	2	2	2	2	2	2	2	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2																		
8	Parbet	2	4	4	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2																		
9	Baghur	15	15	15	12	12	15	15	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3																		
10	Myaghi	8	8	8	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2																		
11	Pulpa	8	8	4	4	4	4	4	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3																		
12	Oduni	2	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2																		
13	Ayatharochi	4	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2																		
14	Kaptharu	4	4	4	4	4	4	4	5	5	5	5	10	10	10	10	10	10	10	10	10	10	10	10																		
15	Purmandhi	2	3	2	2	2	2	2	5	5	5	5	10	10	10	10	10	10	10	10	10	10	10	10																		
16	Nawalparasi	2	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2																		
Total		119	80	80	2	2	45	45	27	27	30	30	38	24	23	19	19	20	19	24	23	20	20	40	40	23	22	28	22	1	1	3	3	8	8	17	17	10	10	16	16	15

T\* = Target  
A\* = Achievement





Annex- 8  
Livestock Population in the Region

S.No.	District	Cattle			Buffaloes			Goats			Sheep			Yak/Goat			Horses and Mules			Rabbits			Poultry			Decks								
		No.	I %	I %	No.	I %	I %	No.	I %	I %	No.	I %	I %	No.	I %	I %	No.	I %	I %	No.	I %	I %	No.	I %	I %	No.	I %	I %						
1	MAHARASHTRA	17	2.90	0.46	2,803	13,723	2.7	11,670	85	16,671	0.51	16,457	48	10,971	4.52	11,457	1,159	1,159	55	102,000	55	55	2,641	17,86	3,716	7								
2	GUJARAT	3,053	14,622	2.01	15,170	7,247	13,723	1,66	52,203	67	108,115	0.39	108,754	71	39,565	0.18	39,634	204	204	824	102,000	824	27,657	15,851	14,531	150,546								
3	MADHYA PRADESH	81	32,245	0.14	39,716	876	51,324	1.66	72,242	17,638	11,558	11,65	172,198	50	21,803	0.22	21,872	6,578	6,578	284	102,000	284	10,217	17,680	5,59	140,806								
4	KARNATAKA	241	89,671	0.27	89,754	3,119	69,377	4.31	78,242	17,638	11,558	11,65	172,198	50	21,803	0.22	21,872	6,578	6,578	284	102,000	284	10,217	17,680	5,59	140,806								
5	TAMIL NADU	298	1,132	34.81	718	8,177	78,527	19.13	87,280	5,896	17,742	3.77	17,728	57	5,271	0.77	5,326	170	170	322	112	60,370	324	43,478	121,900	27.10	167,619							
6	KERALA	1,256	49,627	5.27	47,071	19,387	78,286	19.81	91,174	4,802	23,674	7.54	26,916	224	13,981	10.73	18,335	401	401	1,00,000	401	224,796	113,621	66,779	93,817									
7	ANDHRA PRADESH	5,889	5,889	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100				
8	WEST BENGAL	4,799	39,735	9.27	42,134	255	49,700	0.52	43,680	1,037	30,100	3.10	31,437	871	3,010	11.44	1,881	1,67	1,67	1,257	100,000	1,257	10,705	24,92	140,077									
9	BIHAR	2,172	59,427	2.70	64,655	2,661	76,756	3.35	79,413	2,824	15,073	4.28	15,896	611	15,481	3.89	16,312	670	670	718	100,000	718	22,120	46,110	31,32	64,828								
10	MIZORAM	456	21,047	0.48	21,531	799	39,454	3.04	39,254	1,691	33,105	4.62	34,706	4,201	13,702	17.63	17,63	35	35	157	100,000	157	1,527	718	7,211	150,367	4,59	1,57,878						
11	TRIPURA	32	72,660	0.44	73,284	6,710	84,231	0.96	90,541	7,693	14,503	5.11	15,936	1,621	1,621	1,621	1,621	1,621	1,621	1,621	100,000	1,621	46	1,072	185	84,22	42,216	14,565	17,13	24,481	310	52	27,71	52
12	GOA	77	87,247	0.09	87,314	241	30,800	0.78	31,041	913	54,177	1.64	54,089								100,000	335	42,270	15,771	2,772	17,941								
13	ARUNACHAL PRADESH	1,822	35,680	3.15	37,507	1,870	97,535	1.89	99,274	8,940	46,440	14.74	54,440	4	1,742	0.11	1,504	180	180	100,000	180	10,520	13,520	7,22	14,620	75	1,210	2,847	1,603					
14	ASSAM	3,887	192,271	2.87	205,448	5,141	50,238	0.28	55,380	6,107	70,540	7.97	76,647	418	8,927	4.46	9,770				100,000	46	97,814	170,670	44,79	216,514	1,811	1,52	3,316	4,137				
15	WEST BENGAL	3,120	192,270	12.96	182,276	34,527	126,647	31.45	161,170	11,637	5,62	12,028	8	11,891	0.13	11,979					100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
16	WEST BENGAL	16,647	206,095	11.37	232,542	28,736	77,178	27.19	105,914	31,999	133,311	21.28	169,370	1,214	7,245	14.53	8,563				100,000	46	35,393	27,925	13,40	26,209								
Total		71,706	1,287,406	8.04	1,423,342	109,311	1,083,990	9.54	1,145,332	1,06,687	1,457,920	7.81	1,464,137	11,800	179,927	6.54	170,910	1,678	1,678	100,000	401	20,736	6,427	897,425	1,840,028	30,55	2,541,463	5,008	3,564	26,47	2,533			

I = Improved Breed  
L = Local Breed

Annex- 19  
Regional Livestock Training Center  
Annual Progress  
FY 053/54 (1996/97)

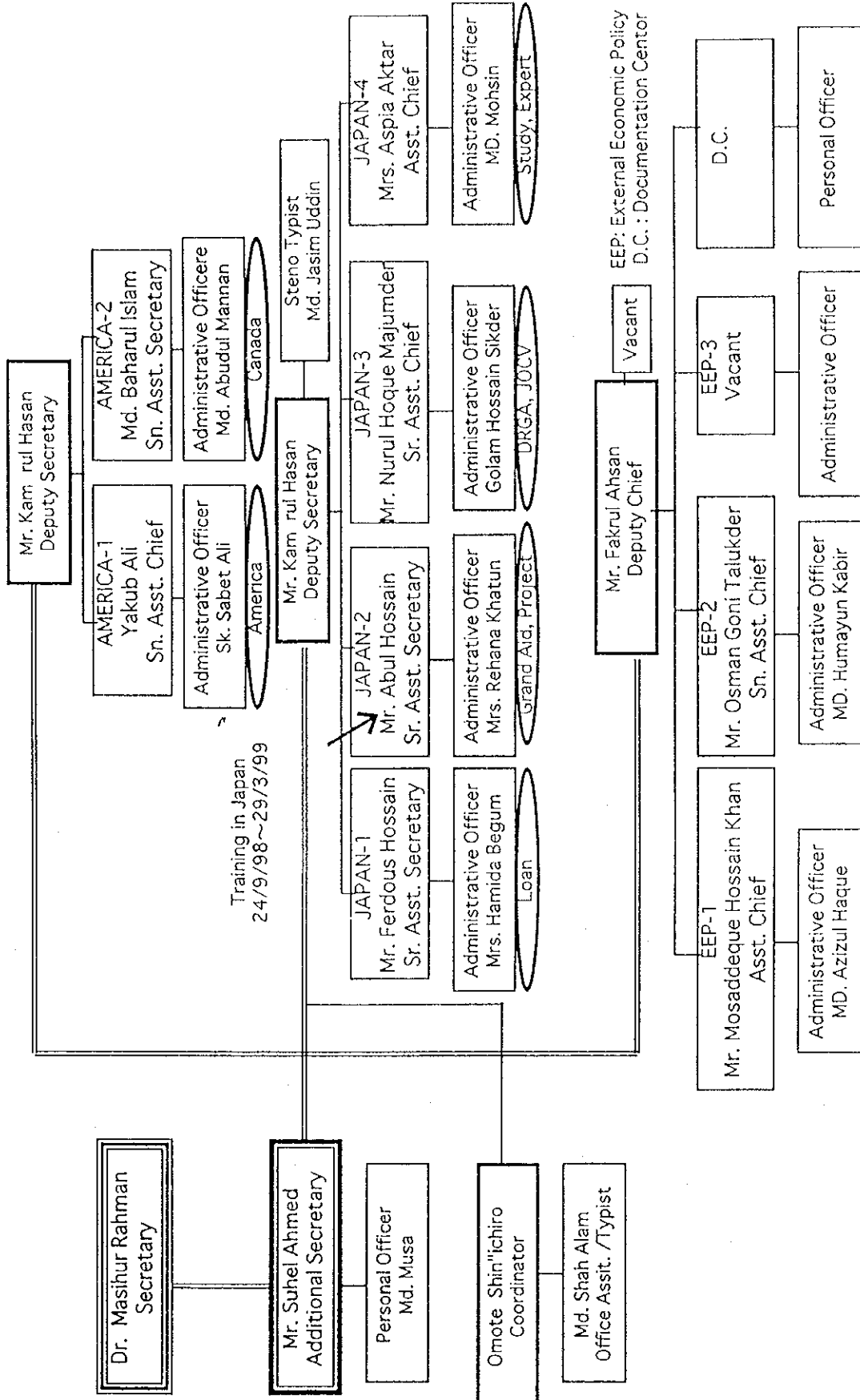
S.No.	Programs	Unit	Annual		No of trainees
			Target	Achievement	
1	JT/JTA Training				
	1. Rabbit Raising One Week	Batch	1	1	20
	2. Animal Husbandry and Nutrition Management	„	1	1	20
	3. Field Assistant in service training 14 days	„	1	1	20
2	Farmers' Training				
	1. VAHW Training One Month	„	1	1	23
	2. VAHW Refresher Training 15 days	„	1	1	22
	3. Rabbit Raising One Week	„	1	1	25
	4. Poultry Keeping One Week	„	2	2	45
	5. Animal Nutrition and Fodder Nursery One Week	„	1	1	20
	6. Milk production One Week	„	1	1	
	7. Pigs production One Week	„	1	1	
	8. Cattle and Buffalo husbandry training One Week	„	1	1	
	9. Welfare Fund Management One Week	„	1	1	
3	Purchase of furnitures	Percent	100	100	
4	Vehicle Purchase (Motor Bike)	Percent	100	100	
5	Machinery Purchase (Type writer, Litho Machine)	Percent	100	100	

Annex- 20  
Semen Bank, Bhairahawa  
Annual Progress  
FY 053/54 (1996/97)

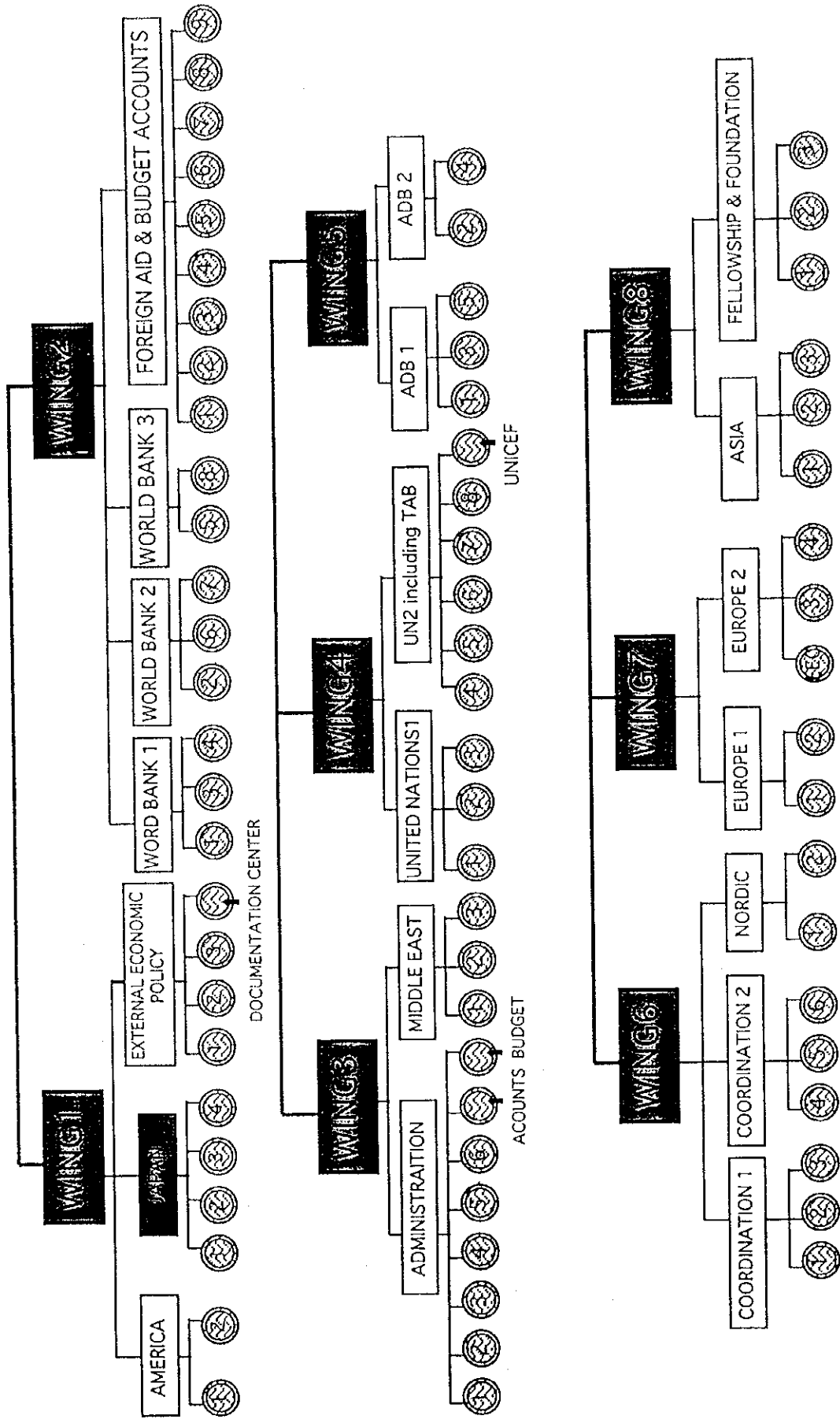
S.No.	Programs	Unit	Annual	
			Target	Achievement
1	Liquid Nitrogen production and distribution	Litr.	6000	6272
2	Liquid semen production	Dose	300	315
3	AI in Cattle	No.	300	451
4	AI in Buffaloes	No.	75	178
5	Monitoring and evaluation of AI services	District	9	9
6	Purchase of Liquid Nitrogen Containers	No.	2	2
7	Area selection	No.	1	1
8	Farmers' Group formation	No.	2	2
9	Farmer's group training	group	2	2
10	Annual report publication	No.	1	1

Annex- 21  
Livestock Development Farm, Pokhara  
Annual Target and Achivement Report

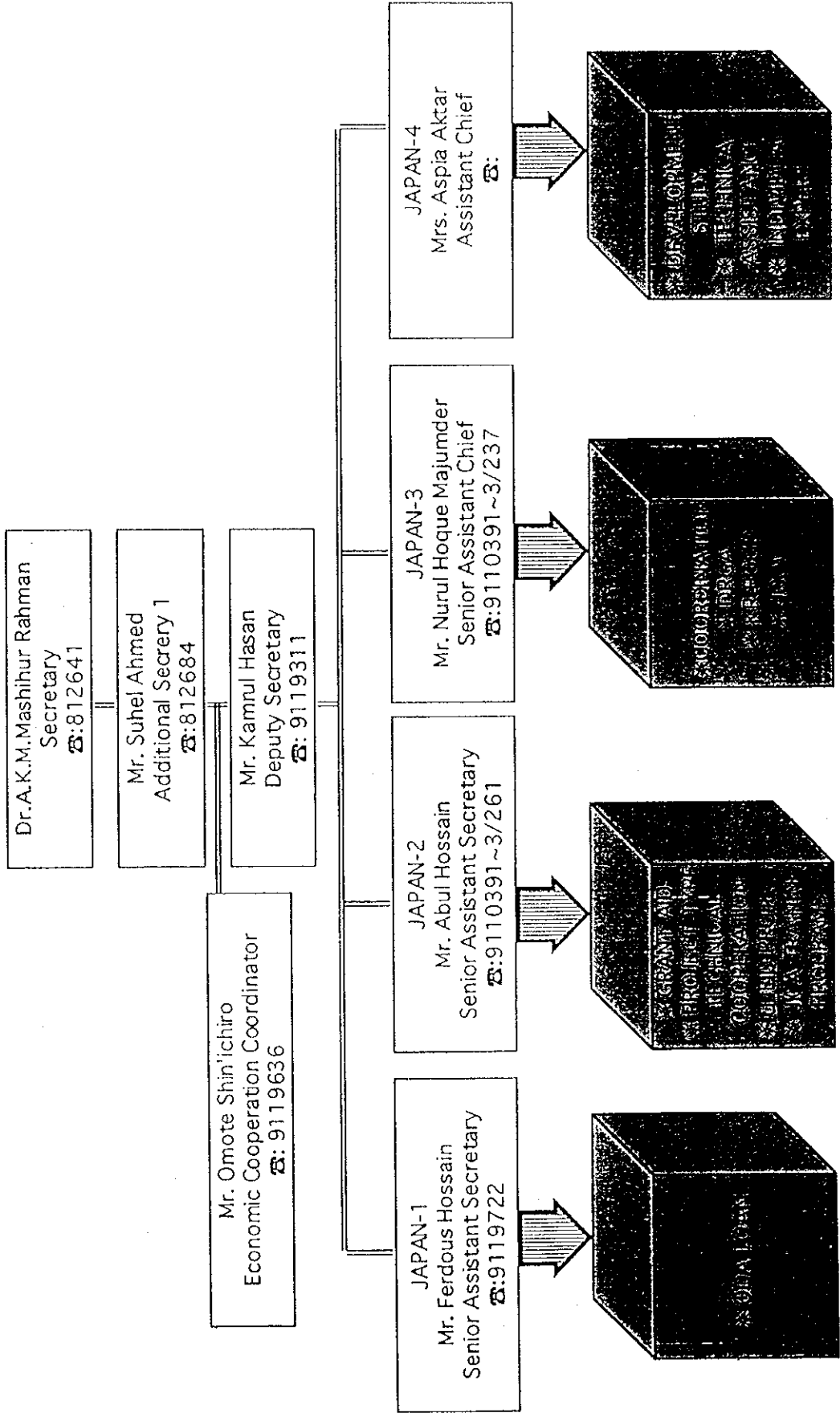
S.No.	Description	Unit	Target	Achivement	Achievement Percent
1	Production				
1.1	Buffalo calves	No.	35	63	100
1.2	Lambs	No.	250	258	100
1.3	Piglets	No.	800	942	100
1.4	Chicks	000	100	123.1	100
1.5	Fodder seedlings	000	15	15.15	100
1.6	Cultivation of winter forage	Hectare	18	27.62	100
1.7	Silage Production	MT	600	722	100
1.8	production of fodder tree seedling	MT	2	2.93	100
2	Distribution of livestock				
2.1	Murrah Buffalo Bulls	No.	20	20	100
2.2	Improved Ram	No.	60	60	100
2.3	Weaner piglets	No.	500	815	100
2.4	Poultry chicks	000	90	113.4	100
2.5	Fodder Trees saplings	000	12	6.8	56.67
3	External Service Program				
3.1	Natural Services in Buffalo	No.	200	389	100
3.2	Farm Day	Times	1	1	100
3.3	Parasite Control in Sheep	No.	600	675	100
<b>Total Progress</b>					<b>99.69</b>



ECONOMIC RELATIONS DIVISION

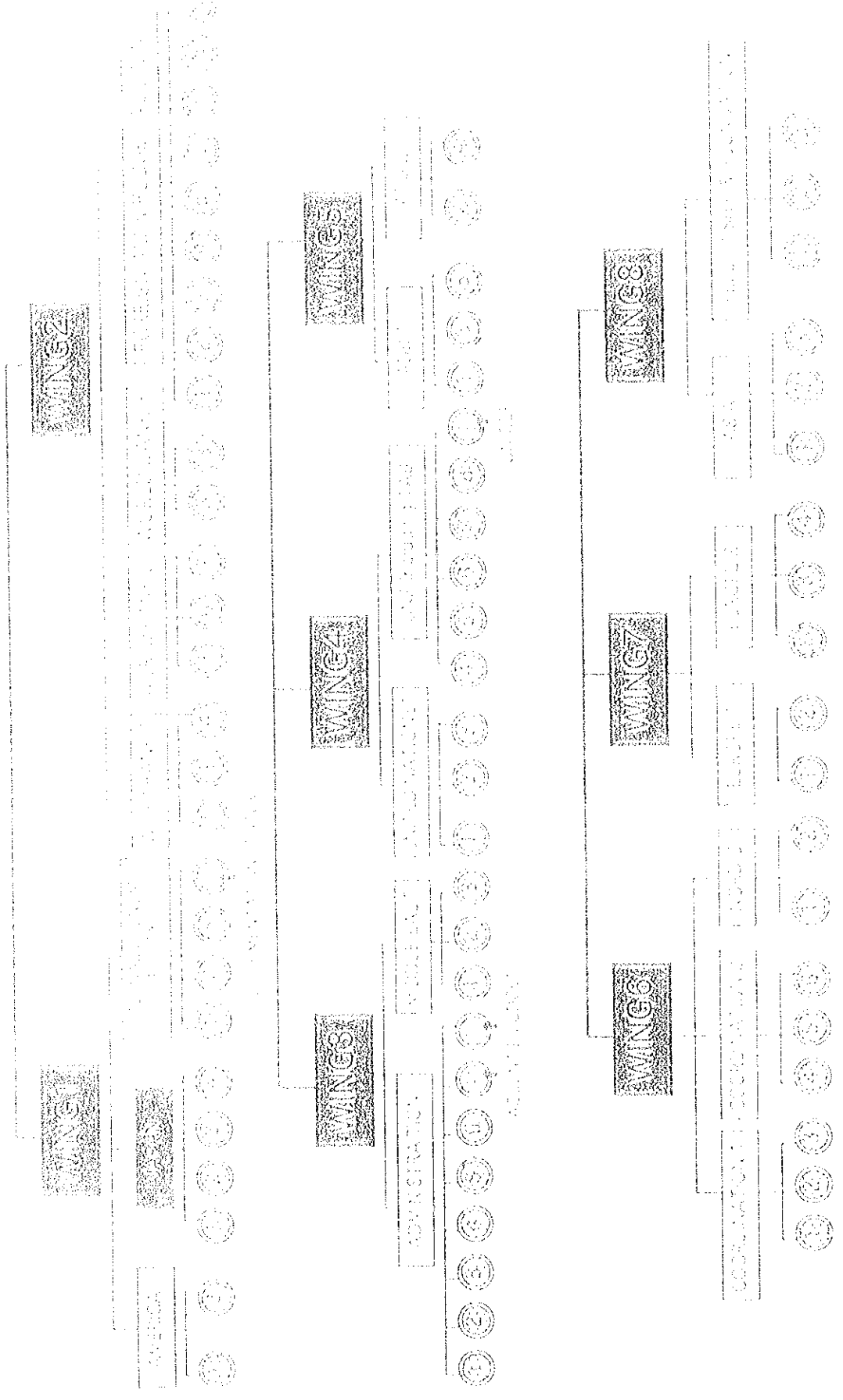


ORGANOGRAM OF JAPAN BRANCH



\* UJEID PROJECT Utilization of Japanese Experts in Designing Projects under Japanese Assistance

# TECHNOLOGICAL RESEARCH DIVISION





# ORGANOGRAM OF JAPAN BRANCH

Mr. Masahiko Muroga  
 Director

Mr. Masahiko Muroga  
 Director

Mr. Shiro Akashi  
 Assistant Director

Mr. Shiro Akashi  
 Assistant Director

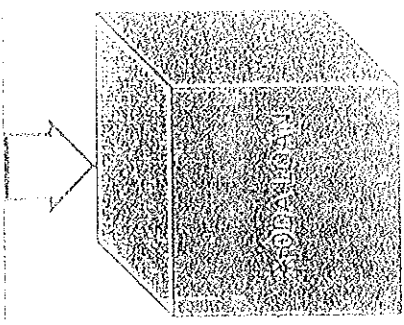
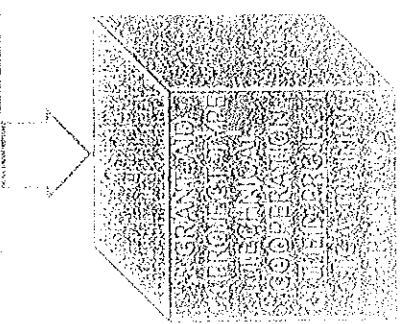
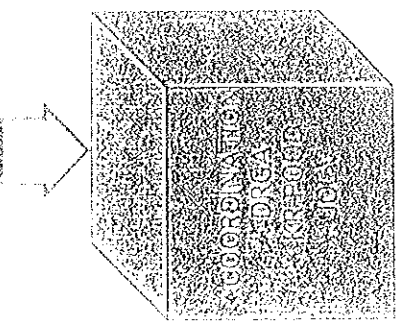
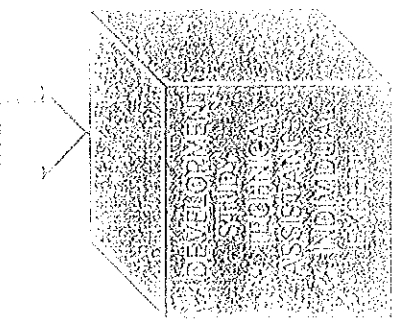
Mr. Shiro Akashi  
 Assistant Director

Mr. Shiro Akashi  
 Assistant Director

Mr. Shiro Akashi  
 Assistant Director

Mr. Shiro Akashi  
 Assistant Director

Mr. Shiro Akashi  
 Assistant Director



バングラデシュ政府機関

和名

1	President's Office		大統領府
	a) Public and Personal Division		大統領局
2	Prime Minister's Office		首相府
	Priminister's Office		首相事務室
	b) Cabinet Division		内閣局
	c) Special Affairs Division		特命局
	d) Armed Forces Division		軍隊局
	e) Election Commission Secretariat		選挙委員会事務局
	Board of Investment		投資委員会
3	Ministry of Establishment		人事省
	a) Establishment		人事局
	b) Bangladeshe Public Service Comoiission Secretariat		バングラデシュ公務委員会事務局
	Public Administration Training Institute		公務員研修所
4	Ministry of Defense		国防省
	a) Defence Division		国防局
	Survey of Bangladesh	SOB	バングラデシュ測量部
	Bangladesh Metrological Department	BMD	バングラデシュ度量衡部
	Bangladesh Space Research & Remote Sensing Organization	SPARSO	バングラデシュ宇宙研究・遠隔探査機構
5	Ministry of Law, Justice and Parliamentary Affairs		法務、裁判、国会関係省
	a) Law and Justice Division		司法局
	b) Parliament Secretariat		国会事務局
6	Ministry of Agriculture	MOA	農業省
	a) Agriculture		農業局
	Department of Agriculture Extension	DAE	農業普及管理局
	Bangladesh Agricultural Research Council	BARC	バングラデシュ農業研究会議
	Bangladesh Rice Research Institute	BRRI	バングラデシュ水稲研究所
	Bangladesh Agricultural Reserch Institute	BARI	バングラデシュ農業研究所
	Central Extension Resources Development Institute	CERDI	中央資源開発普及所
	Institute of Post Graduate Studies in Agriculture	IPSA	農業大学院
	Bangladesh Jute Research Institute	BJRI	バングラデシュジュート研究所
	Bangladesh Agrictural Development Corporation	BADC	バングラデシュ農業開発事業団
7	Ministry of Water Resources		水資源省
	a) Water Resources Division		水資源局
	Bangladesh Water Development Board	BWDB	バングラデシュ水資源開発庁
8	Ministry of Foreign Affairs		外務省
	a) Foreign Affairs		外務局
9	Ministry Finance	MOF	大蔵省
	Secretary	次官	Dr. A.K.M.Masihur Rahman
	a) Finance Division		財務局
	b) Internal Resources Divisin		内税局
	c) Economic Relation Division		経済関係局
	Additional Secretary (wing I )(Japan,America,,ERDOC)	局長	Mr.Suhel Ahmed
	Deputy Secretary(ERD)	課長	Mr.A.Aziz Sarkar
	Japan Section 1 Senior Assistant Secretary	担当1	Mr.Farid Ahmed Bhuiyan
	Japan Section 2 Senior Assistant Secretary	担当2	Mr.Abul Hossain
	Japan Section 3 Senior Assistant Chief	担当3	Mr.Nurul Haq Majunder

	Japan Section 4 Research Officer	担当 4	Mr. Mosaddeque H. Khan
	d) Banking Division		銀行局
	National Board of Revenue	NBR	国税庁
10	Ministry of Local Government, Rural Development & Cooperatives		地方自治・農村開発・協同組合省
	Secretary	次官	Syed Marghub Murshed
	a) Local Government Division		地方自治局
	b) Rural Development & Cooperative Division		地域開発・協同組局
	Baangladesh Rural Development Board	BRDB	バングラデシュ地域開発庁
	Bangladesh Academy for Rural Development	BARD	バングラデシュ農村開発学院
11	Ministry of Communication		運輸省
	a) Roads & Railway Division		道路・鉄道局
	Road & Highways Department	R&H	一般・高速道路部
	b) Jamuna Bridge Division		ジャムナ橋局
	Railway Authority		鉄道公社
	Bangladesh Road Transport Corporation	BRTC	バングラデシュ道路輸送事業団
12	Ministry of Health and Family Welfare	MOHFW	健康・家庭福祉省
	a) Health and Family Welfare		健康・家庭福祉局
13	Ministry of Industry		工業省
	a) Industries Division		工業局
	Planning Cell		企画室
	National Productivity Organization	NPO	国立生産性向上機構
	Bangladesh Standard Testing Institution		バングラデシュ標準規格検査機構
	Bangladesh Steel & Engineering Corporation	BSEC	バングラデシュ鉄鋼事業団
	Trade Marks		商標登録
	Bangladesh Chemical Industries Corporation	BCIC	バングラデシュ化学工業事業団
	Urea Fertilizer Factory Ltd.	UFFL	尿素肥料株式会社
14	Ministry of Post and Telecommunication		郵電省
	a) Post and Tele-communication		郵電局
	Bangladesh Telegraph & Telephone Board	T&T	バングラデシュ郵電庁
15	Ministry of Commerce		商業省
	a) Commerce Division		商業局
	Bangladesh Export promotion Bureau		バングラデシュ輸出振興本部
	Bangladesh Insurance Academy		バングラデシュ保険協会
16	Ministry of Social Welfare		社会福祉省
	a) Social Welfare		社会福祉局
	Department of Social Welfare		社会福祉部
17	Ministry of Women & Children Affairs		子女省
	a) Women and Children Affairs		子女局
	Department of Womens' Affairs	DWA	女性部
18	Ministry of Food	MOFD	食糧省
	a) Food		食糧局
	Directorate of Food		食糧管理部
	Bangladesh Sugar and Food Industries Corporation	BSFIC	バングラデシュ砂糖・食糧産業事業団
19	Ministry of Information		情報省
	a) Information		情報局
	National Broadcasting Authority	NBA	国立放送公社
	Bangladesh Television		バングラデシュテレビ局
	National Institute of Mass Communication		国立マスコミ研究所

20	Ministry of Home		内務省
	a) Home		内務局
	Bangladesh Coast Guard		バングラデシュ沿岸警備隊
	Bangladesh Police		バングラデシュ警察
21	Ministry of Energy & Mineral Resources	MOE&MR	エネルギー・鉱物資源省
	a) Energy and Mineral Resources Division		エネルギー・鉱物資源局
	Geological Survey of Bangladesh		バングラデシュ地質調査
	Dhaka Electric Supply Authority	DESA	ダッカ電力供給公社
	Bangladesh Power Development Board	BPDB	バングラデシュ動力開発委員会
	Bangladesh Oil, Gas, and Mineral Corporation	BOGMC	バングラデシュ石油・ガス・鉱物事業団
	Bangladesh Petroleum Corporation	BPC	バングラデシュ石油事業団
22	Ministry of Housing and Public Works		住宅・公共事業省
	a) Housing and Public Works		住宅・公共事業局
23	Ministry of Labour & Manpower		労働・人的資源省
	Secretary	次官	Muhammad Ahsan Ali Sarkar
	a) Labour and Manpower Division		労働・人的資源局
	Department of Inspection for Factories & Establishment		工場・企業監察局
	Buareau of Manpower Employment & Training		人材雇用・訓練本部
	Department of Labour		労働部
24	Ministry of Educatin		教育省
	a) Education Division		教育局
	b) Primary and Mass Education Division		初等・社会教育局
	Directrate of Secondary & High Education	DSHE	中・高校教育管理部
	Directorate General of Primary Education		初等教育管理部
	Directorate of Technical Education		技術教育管理部
	Bangladesh Bureau of Educational Information & Statistics		バングラデシュ教育情報統計本部
	University Grants Commission	UGC	大学証書委員会
25	Ministry of Science & Technology		科学技術省
	Secretary	次官	M. Fazlur Rahman
	a) Science and Technology		科学技術局
	Bangladesh Scientific & Industrial Research Council	BCSIR	バングラデシュ科学工業研究会議
	National Museum for Science & Technology		科学技術博物館
26	Ministry of Environment & Forest	MOE&F	環境・森林省
	a) Environment and Forest		環境・森林局
	Forest Department		森林部
	Department of Environment		環境部
	Bangladesh Forest Industries Development Corporation	BFIDC	バングラデシュ林産開発事業団
27	Ministry of Fisheries & Livestock	MOF&L	水畜産省
	a) Fisheries and Livestock		水畜産局
	Bangladesh Fisheries Research Institute		バングラデシュ漁業調査研究所
	Bangladesh Fisheries Development Corporation		バングラデシュ漁業開発事業団
28	Ministry of Jute		ジュート省
	a) Jute		ジュート局
	Bangladesh Jute Mills Corporation	BJMC	バングラデシュジュート製作事業団
29	Ministry of Planning	MOP	計画省
	a) Planning Division/Planning Commission	PC	計画局/計画委員会
	b) Statistics Division		統計局
	c) Implementation, Monitoring & Evaluation Division	IMED	実行・監視・評価局

	Planning Cell		企画室
	Bangladesh Bureau of Statistics		バングラデシュ統計本部
30	Ministry of Land		土地省
	a) Land		土地局
31	Ministry of Religious Affairs		宗務省
	a) Religious Affairs		宗務局
32	Ministry of Youth and Sports		青年・スポーツ省
	a) Youth and Sports		青年・スポーツ局
	Bangladesh Krira Shikkha Protisthan	BKSP	
	Department of Youth Development		青年育成部
33	Ministry of Textile		織物省
	a) Textile		織物局
	Bangladesh Handloom Board		バングラデシュ手織りはた庁
	Department of Textile		織物部
	Institute of Textile Engineering & Technology		織物技術研究所
	Garments Industry Training Institute		衣服産業研修所
34	Ministry of Civil Aviation & Tourism		民間航空・観光省
	a) Civil Aviation and Tourism		民間航空・観光局
	Bangladesh Biman Airlines		バングラデシュ航空
35	Ministry of Disaster Management and Relief		災害緊急援助省
	a) Disaster Management and Relief		災害緊急援助局
36	Ministry of Cultural Affairs		文化省
	a) Cultural Affairs		文化局
37	Ministry of Shipping		船舶省
	a) Shipping		船舶局
	Chittagong Port Authority	CPA	チッタゴン港湾公社
	Mongla Port Authority		モンガラ港湾公社
	Bangladesh Inland Water Transport Authority	BIWTA	バングラデシュ国内水運公社
	Bangladesh Shipping Corporation	BSC	バングラデシュ船舶事業団
	Seamen's Training School		船員養成校

Economic Relations Division (ERD) Ministry of Finance

大蔵省経済関係局組織図

Secretary	Dr. A. K. Masihur Rahman	次官
<b>WING-1</b>		<b>第1翼</b>
Additional Secretary (Japan, America, External Economic Policy) Suhel Ahmed		日本・米国・対外経済政策局長
Deputy Secretary (America)		米国課長
Assistant Chief (America 1)		米国担当 1
Senior Assistant Secretary (America 2) -Canada-		米国担当 2 (加)
Deputy Secretary (Japan) M.A.Aziz Sarkal		日本課長
Senior Assistant Secretary (Japan1) Farid Ahmed Bhuiyan		日本担当 1
Senior Assistant Secretary (Japan2) Abul Hossain		日本担当 2
Assistant Chief (Japan3) Nurul Haq Majunder		日本担当 3
Research Officer(Japan4) Mosaddeque H. Khan		日本担当 4
Deputy Chief(External Economic Policy)		対外経済政策課長
Research Officer(EEP1)		対外経済政策担当 1
Assistant Chief (EEP2)		対外経済政策担当 2
Assistant Chief (EEP3)		対外経済政策担当 3
Deputy Director(Documentation Center)		文書管理
<b>WING2</b>		<b>第2翼</b>
Additional Secretary (World Bank Foreign Aid and Budget Accounts)		世銀・外国援助・予算局長
Deputy Secretary (World Bank 1)		世銀 1 課長
Senior Assistant Secretary (IDA1)		世銀担当 1
Senior Assistant Secretary (IDA3)		世銀担当 3
Senior Assistant Secretary (IDA4)		世銀担当 4
Deputy Secretary (World Bank 2)		世銀 2 課長
Senior Assistant Secretary (IDA2)		世銀担当 2
Senior Assistant Secretary (IDA6)		世銀担当 6
Senior Assistant Secretary (IDA7)		世銀担当 7
Deputy Chief (World Bank 3)		世銀 3 課長
Research Officer (IDA5)		世銀担当 5
Assistant Chief (IDA8)		世銀担当 8
Director (Foreign Aid and Budget Accounts)		外国援助・予算管理課長
Assistant Chief (FABA1)		外国援助・予算管理担当 1
Research Officer (FABA2)		外国援助・予算管理担当 2
Assistant Secretary (FABA3)		外国援助・予算管理担当 3
Assistant Chief (FABA4)		外国援助・予算管理担当 4
Senior Assistant Secretary (FABA5)		外国援助・予算管理担当 5
Senior Assistant Secretary (FABA6)		外国援助・予算管理担当 6
Assistant Chief (FABA7)		外国援助・予算管理担当 7
Research Officer (FABA8)		外国援助・予算管理担当 8
Research Officer (FABA9)		外国援助・予算管理担当 9
<b>WING3</b>		<b>第3翼</b>
Joint Secretary (Administration and Middle East) MD. Sayef Uddin		総務・中東局長
Deputy Secretary (Administration)		総務課長
Senior Assistant Secretary 1		総務担当 1
Senior Assistant Secretary 2		総務担当 2
Senior Assistant Secretary 3		総務担当 3

Senior Assistant Secretary 4	総務担当 4
Senior Assistant Secretary 5	総務担当 5
Senior Assistant Secretary 6	総務担当 6
Accounts Officer	経理担当
Budget Officer	予算担当
Deputy Secretary (Middle East)	中東課長
Senior Assistant Secretary (Middle East 1)	中東担当 1
Research Officer (Middle East2)	中東担当 2
Research Officer (Middle East3)	中東担当 3
<b>WING 4</b>	<b>第 4 翼</b>
Joint Secretary (United Nations Including Technical Assistance Branch (TAB) )	国連・技術援助局長
Deputy Chief(UN1)	国連 1 課長
Senior Assistant Secretary (UN1)	国連担当 1
Assistant Chief (UN2)	国連担当 2
Assistant Chief (UN3)	国連担当 3
Deputy Chief(UN2 Including TAB)	国連 2 課長
Senior Assistant Secretary (UN4)	国連担当 4
Senior Assistant Secretary (UN5)	国連担当 5
Senior Assistant Secretary (UN6)	国連担当 6
Research Officer (UN7)	国連担当 7
Research Officer (UN8)	国連担当 8
Research Officer (UNCEF)	国連児童教育基金担当
<b>WING 5</b>	<b>第 5 翼</b>
Joint Secretary (Asian Development Bank-ADB)	7/7 銀局長
Deputy Chief(ADB1)	7/7 銀 1 課長
Senior Assistant Secretary (ADB1)	7/7 銀担当 1
Senior Assistant Secretary (ADB3)	7/7 銀担当 3
Senior Assistant Secretary (ADB5)	7/7 銀担当 5
Deputy Secretary (ADB-2)	7/7 銀 2 課長
Senior Assistant Secretary (ADB2)	7/7 銀担当 2
Senior Assistant Secretary (ADB4)	7/7 銀担当 4
<b>WING 6</b>	<b>第 6 翼</b>
Joint Secretary (Coordination & Nordic)	調整・北欧局長
Deputy Secretary (Coordination)	調整課長
Senior Assistant Secretary -1	調整担当 1
Senior Assistant Secretary -2	調整担当 2
Senior Assistant Secretary -3	調整担当 3
Deputy Chief(Coordination 2)	調整 2 課長
Research Officer -4	調整担当 4
Assistant Secretary -5	調整担当 5
Senior Assistant Secretary -6	調整担当 6
Deputy Chief(Nordic)	北欧課長
Senior Assistant Secretary (Norsic1)	北欧担当 1
Assistant Secretary (Nordic 2)	北欧担当 2
<b>WING 7</b>	<b>第 7 翼</b>
Joint Secretary (Europe)	ヨーロッパ 局長
Deputy Chief (Europe-1)	ヨーロッパ 1 課長
Senior Assistant Secretary (Europe1)	ヨーロッパ 担当 1

Senior Assistant Secretary (Europe2)	3-0776 担当2
Deputy Chief (Europe-2)	3-0776 2課長
Assistant Chief (EEC)	EEC担当
Senior Assistant Secretary (Europe3)	3-0776 担当3
Senior Assistant Secretary (Europe4)	3-0776 担当4
<b>WING 8</b>	<b>第8翼</b>
Joint Secretary (Asia)	7/7 7局長
Deputy Secretary (Asia)	7/7 7課長
Assistant Chief (Asia 1))	7/7 7担当1
Assistant Secretary (Asia 2)	7/7 7担当2
Assistant Secretary (Asia 3)	7/7 7担当3
Deputy Secretary (Foreign & Fellowship)	海外研修課長
Senior Assistant Secretary (F & F1)	海外研修担当1
Assistant Chief (F & F 2)	海外研修担当2
Senior Assistant Secretary (F & F 3)	海外研修担当3

参考：

公務員職(Bangladesh Civil Service: BCS)は29分類され、ERDには3カゴリーの公務員職がいる。

Secretary

行政職:BCS(Administration)	経済職:BCS(Economic)	地方
Additional Secretary	= Division Chief	= Comissioner
Joint Secretary	= Joint Chief	
Deputy Secretary	= Deputy Chief	= Deputy Comissioner
Senior Assistant Secretary	= Assistant Chief	= Thana NIRBAHI Officer(TNO)
Assistant Secretary	= Research Officer	



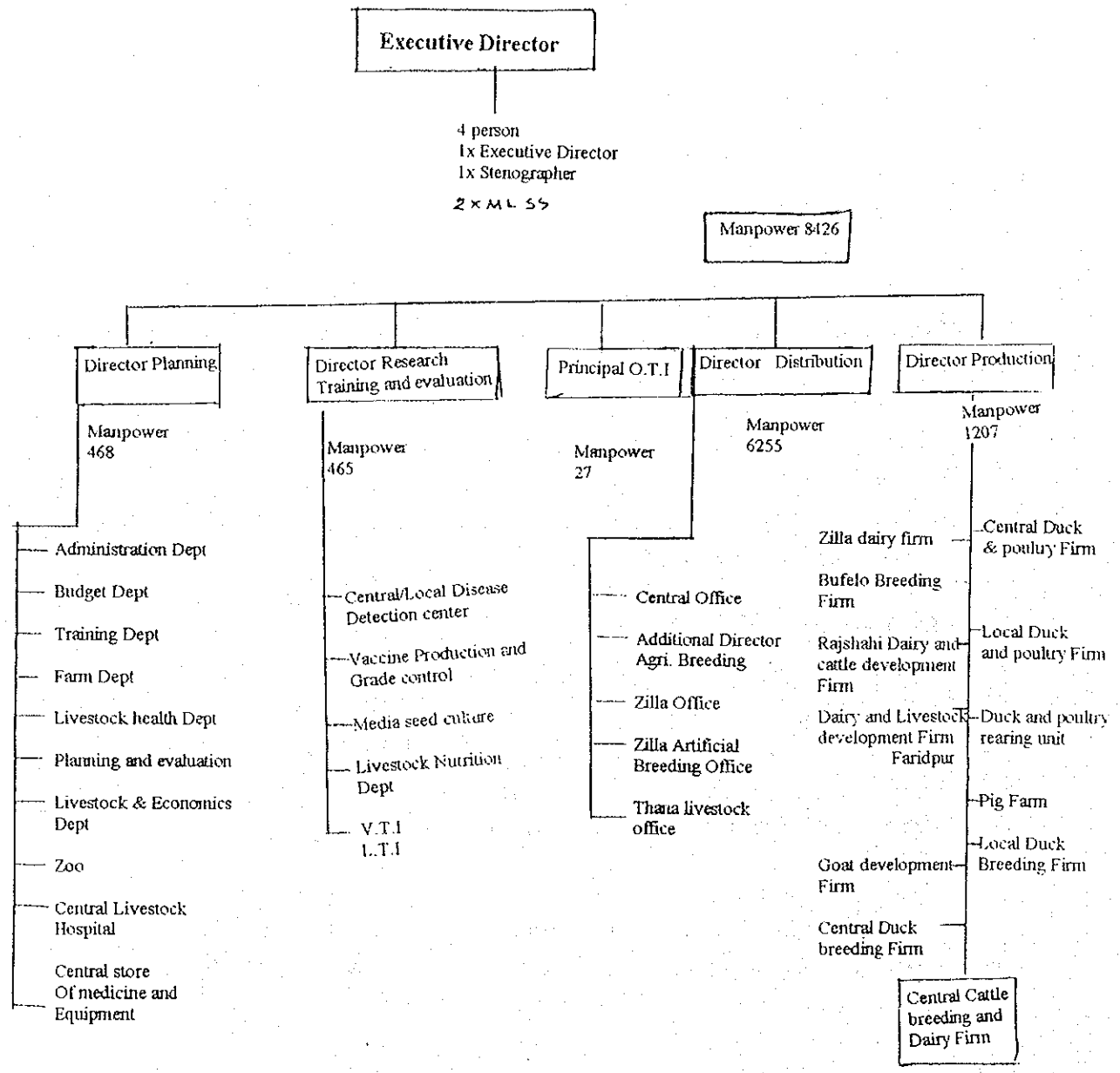
List of 29 BCS Cadres

公務員29分類

01. BIS (Administration)	行政
02. BCS (Agriculture)	農業
03. BCS (Ansar)	治安
04. BCS(Audit and Accounts)	監査及び会計
05. BCS(Cooperative)	協同組合
06. BCS(Customs and Excise)	税関及び間接税
07. BCS(Economic)	経済
08. BCS(Family Planning)	家族計画
09. BCS(Fisheries)	漁業
10. BCS(Food)	食糧
11. BCS(Foreign Affairs)	外務
12. BCS(Forest)	林野
13. BCS (General Education)	一般教育
14. BCS(Health)	厚生
15. BCS(Information)	情報
16. BCS(Judicial)	司法
17. BCS(Livestock)	畜産
18. BCS(Police)	警察
19. BCS(Postal)	郵便
20. BCS(Public Health Engineering)	公衆衛生
21. BCS(Public Works)	公共事業
22. BCS(Railway Engineering)	鉄道技師
23. BCS(Railway transportation and Commercial)	鉄道輸送及び商業
24. BCS(Roads and Highways)	高速・一般道路
25. BCS(Statistical)	統計
26. BCS(Taxation)	税務
27. BCS(Technical Education)	職業教育
28. BCS(Tele-Communication)	電話
29. BCS(Trade)	貿易

なおBCSの他には国防関係がある

বাংলাদেশ পশু চিকিৎসা ও পালক বিভাগ



**Statistics of Livestock and Poultry  
(In Lac)**

	95-96	96-97	97-98
Cow	231.98	233.20	234.00
Buffalo	8.0	8.10	8.20
Goat	330.2	333.31	335.00
Sheep	10.68	10.80	11.10
Chicken	1,275.00	1302.00	1382.00
Duck	126.5	127.00	130.00

**Production of Milk, Egg and Meat**

	95-96	96-97	97-98
Egg (no. in lack)	283.09	302.00	325.25
Milk (Lack. metric ton)	15.74	15.87	16.20
Meat (Lack. Metric ton)	5.40	5.80	6.20

**Contribution of Poultry and Livestock in National Economics**

Contribution of Livestock sub sector in Total National income	6.5%
Full time employment	20%
Part time employment	50%
Nutrition available (Jointly with sub sector of fish)	80%
Income on Export (Livestock sector)	13%
Livestock energy in cultivation	95%
Transportation in Village	50%
Production in cow-dung	80 million metric. ton
Production of organic manure	10% (Chemical fertilizer)
Fuel supply	20%

### Comparative ratio of sector wise local production

Sector and sub-sector	92-93	93-94	94-95	95-96	96-97
Agriculture	1.6	1.8	1.8	0.2	0.2
a) Crop	1.7	0.8	0.5	2.0	2.0
b) Forest	2.4	3	3	4.5	4.5
c) Livestock	3.6	6.2	6.2	9.0	9.0
d) Fisheries	6.5	6.6	8.7	8.5	8.5

As a part of poverty Alleviation Through Live stock , Poultry and Duck package programme ,two goats with kid are being distributing to each destitute landless women as credit with free of service charge aiming to increase their additional income since 1996-97 financial year. Meanwhile ,this programme has displayed a significant achievement.

### The number of cattle firm developed in by Private sector

Types of cattle firm	Up to 95-96	96-97	97-98	Total
Dairy firm	23,924	2,657	3,068	29,649
Goat firm	9,228	6,021	5,584	20,833
Sheep firm	4,186	2,480	3,623	10,289

### Development of poultry and duck

Poultry and duck are one of the major sources of animal protein . Traditional poultry and ducks rearing method are being practiced in the rural and urban area since begining. These local poultry and duck varieties are small in size and their egg producing rate is also less. During British period duck and Poultry firm was established in each number of Tejgaon, Dhaka, Narayanganj, Jamalganj and Sylhet for meet up the demand of egg and poultry meat .These firm were established only to meet the needs of ruling class .After the dividation of India , eggs and birds of high yielding variety were distributed among the people aiming to increase the rearing of high yielding variety. In late 1950 poultry farms were established in Jessore, Pahartoli, Sitakondou, Barishal, Comilla, Khulna and Rangpur. Many high yielding varieties of hens like White leg Horn, RIR, Black Minorco, New Hampshire etc, were being rearing in these firm. Indian runner and Khakicarnbal were the foreign high varieties of Duck. Nine firms out of 11 handed over to Bangladesh Agriculture Development Corporation(BADC) when it is established in 1961. During the Liberation War of 1971, those farm were devastated by Pakistan Army.

After the Liberation War Those farm again reformed and many high yielding variety namely Black Australop, Plairmouth Rock, White Leg Horn, RIR etc, were imported from the foreign country. Aiming to make popular and to extend the High yielding poultry and Duck rearing the Poultry Unit were established in some of Thanas. Hen and Chickes are being reared in these firm collecting from the BADC farm and produced eggs are sold to the people in low price. In 1973, Government of Bangladesh taken over those poultry farm and dismissed the poultry Unit of Thana. In that time cross breeding programme were introduced with local variety and high yielding variety reared in those firm .Though this cross breeding programme it has planed to develop new varieties crossing among high yielding and local variety and eggs and chicken distribution continued. In early 1980 firstly the family poultry and duck development Project has taken with the financial assistance of UNICEF.

# **BLRI**

## **A Brief Acquaintance**

**Bangladesh Livestock Research Institute**  
**Savar, Dhaka.**  
June 1998

## BACK DROP

Livestock and poultry are an integral part of the biotic structure of the ecosystem playing an important role in the economy and environment. Apart from contributing to traction power to rural agriculture, milk, meat and eggs for human consumption, hides and skin for growing industries and for foreign exchange earnings, dung for utilization as fuel and manure, livestock significantly provides employment opportunity, alleviates poverty and fosters welfare to the rural farming community. Livestock retards environment pollution by utilizing fibrous feeds and crop by-products which are inedible to human beings but aerobic fermentation of which may accentuate global warming if not fed to ruminants or disposed otherwise.

The unprecedented growth of population in Bangladesh has resulted in growing landlessness, unemployment and unequal income distribution in the rural economy during the last decade. In view of limited accessibility of the small holder farmer to land and restricted horizontal land expansion, crop intensification or diversification can benefit only to a very small segment of elite large farmers. One of the alternate possibility for the vast majority of small farmers and vulnerable rural women to generate income on sustainable basis is through small scale livestock and poultry rearing in homestead area. However, the livestock system in Bangladesh is least developed. The phenomenon can be explained by negligence of the livestock sub-sector since partition. In fact, the livestock sub-sector has never received the same kind of policy emphasis as the crop sub-sector.

Despite the importance of livestock in the agricultural production system, much less attention has been given on research on livestock and poultry development. There have been some attempts to conduct research on livestock and poultry problems related to nutrition, breeding and disease etc. However, those research efforts were mostly directed to analysis of a single variable, in isolation of other related variables. The cost of developing problem solving technologies was not taken into consideration and the acceptability of new technologies to farmers has never been tried. As a result, those

fragmented researches have failed to create any substantial impact on increasing livestock and poultry production in the country.

In recent years, national policies have been framed for increasing livestock and poultry production to supply adequate nutrition to the under-nourished population in the country. In addition, emphasis has been given on increasing the total draught power output of animals for intensification of crop production. It has been realised that the situation cannot be improved unless livestock extension is strongly backed up by research activities. Against this backdrop, the Bangladesh Livestock Research Institute was created on 17 April, 1984 under the Ordinance No. XXVIII to carry out research on contemporary livestock and poultry development problems and find out their solutions. The Institute's Ordinance was amended in August 1996 by Act NO.9 in the name of "The Bangladesh Livestock Research Institute (Amendment) Act 1996".

## **MANDATE**

### **BLRI's mandate is to :**

- a) identify the basic problems affecting livestock and poultry both at the national and farm level;
- b) solve these problems through multi and inter-disciplinary and inter-institutional research.
- c) develop techniques and knowledge for livestock and poultry production to help food and nutrition security for the increasing population, poverty alleviation, employment creation and environment pollution control.
- d) train scientists in the appropriate fields of research, at home and abroad, thereby filling the gap of skilled scientists.
- e) strengthen research-extension- NGO linkage and expedite quick dissemination of the developed and introduced techniques to the end users.
- f) assist the Government and all concerned in policy decisions related to livestock and poultry research and development.

## **FUNCTIONS**

In line with its mandate, BLRI endeavours to :

- a) identify and solve the basic livestock and poultry problems of the country through research;
- b) develop suitable breed of livestock for increasing production of milk, meat and poultry for eggs and meat;
- c) develop methods for improved production and preservation techniques of fodder and feeds and for better utilization of agricultural by-products, wastes and non-conventional feedstuff for improving livestock production;
- d) improve management practices that will ensure better health and production of animals and birds;
- e) develop suitable method for quick diagnosis and treatment of various livestock and poultry disease;
- f) study epidemiology on existing situation of various bacterial, viral, fungal, parasitic disease and their pathogenic effects on the productivity of animals;
- g) study immunological characteristics of various organisms of important diseases of livestock and poultry and to develop appropriate technology for production of suitable biologics;
- h) evaluate indigenous herbs and shrubs and explore the possibility of their use as drugs in livestock treatment and their poisonous effects.
- i) develop improved methods for collection, processing and storage of livestock and poultry products that will reduce spoilage and improve storage quality;
- j) assess the production cost of components of various livestock and poultry and their products;
- k) identify marketing problems of livestock and their products and develop suitable system for grading and marketing of livestock products;
- l) improve livestock production technology;
- m) disseminate information regarding research on livestock to the farmers;
- n) organise seminars, symposium and workshop on problems of national importance in the field of livestock;



- o) publish annual reports of the activities of the Institute; and perform such other functions as may be necessary for the purposes of the Ordinance.

## **ORGANIZATIONAL STRUCTURE**

### **Research and support service**

BLRI has 6 research and support service divisions and two regional stations.

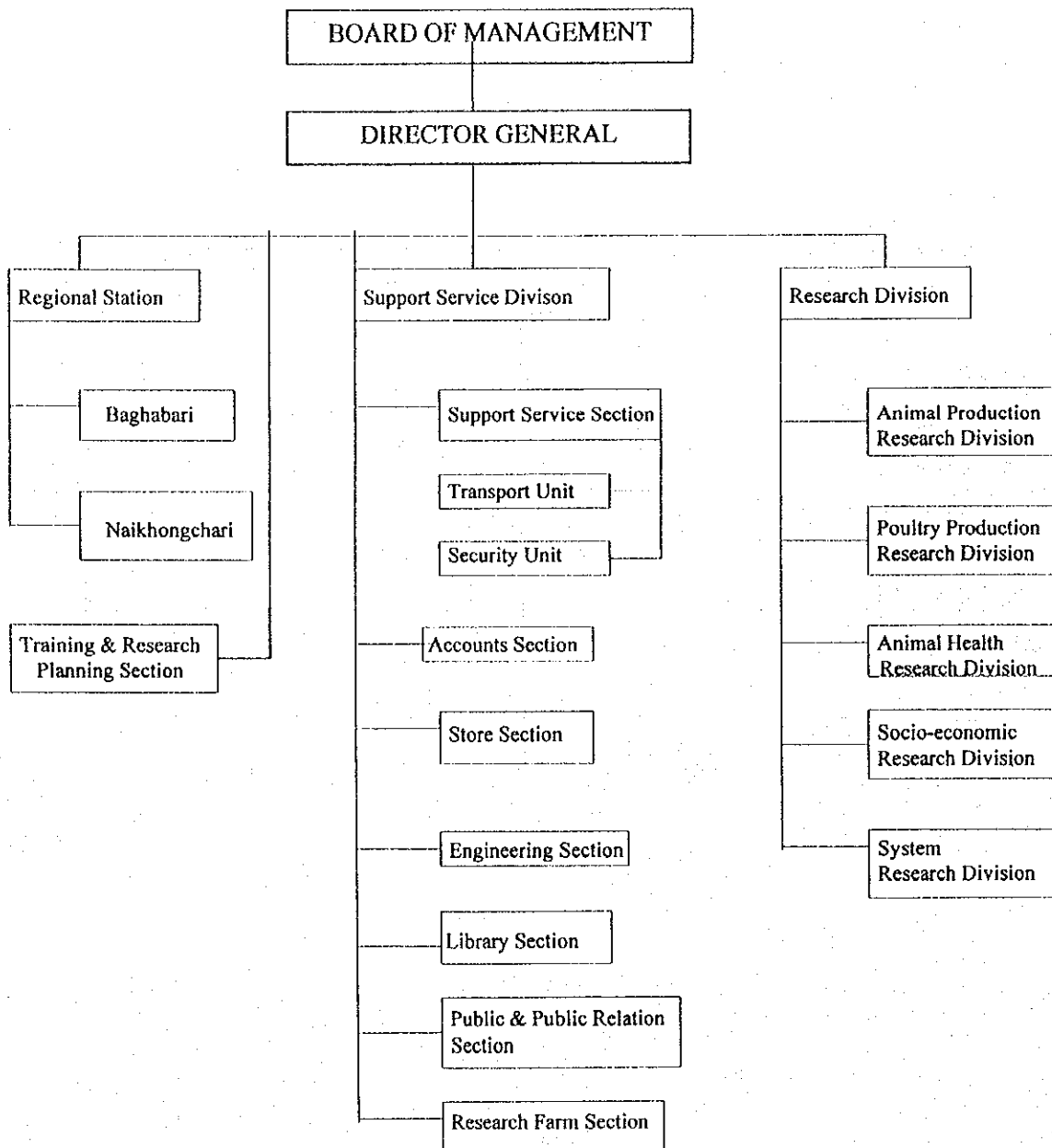
#### **Research divisions**

- Animal Production
- Poultry Production
- Animal Health
- Economics and Marketing
- System Research
- **Support service**

#### **Regional stations**

- Baghabari, Serajgonj  
Naikhongchari, Bandarban

# Organizational Chart



## Livestock development problems, research achievement and future plan

Disciplines	Problems	Research achievement	Future Planning
A. Feeds, Feeding & Nutrition	<ul style="list-style-type: none"> <li>⇒ Feeds &amp; forage shortage</li> <li>⇒ Evaluation of available feed, forage &amp; nutritional status of animals.</li> <li>⇒ Absence of appropriate feeding systems &amp; feed composition.</li> <li>⇒ Nutrient wastage &amp; environment pollution</li> <li>⇒ Feeds &amp; forage preservation techniques</li> <li>⇒ Draught feeding</li> <li>⇒ Shortage of feed supply for chicken &amp; ducks</li> <li>⇒ Use of unconventional feeds for chicken &amp; ducks</li> </ul>	<ul style="list-style-type: none"> <li>⇒ Algae as a cattle feed</li> <li>⇒ Mixed cultivation of maize with legumes</li> <li>⇒ Evaluated local feeds &amp; forages</li> <li>⇒ UMS feeding systems for cattle fattening</li> <li>⇒ Nutrient recycling for duckweed production.</li> <li>⇒ Green grass &amp; wet straw preservation systems</li> <li>⇒ UMB feeding</li> <li>⇒ Use of coconut, sunflower &amp; mustard oil cakes, ipil ipil leaf meal and duckweed as poultry feeds</li> </ul>	<ul style="list-style-type: none"> <li>⇒ Industrial wastes (Shrimp, silkworm, leather etc.)</li> <li>⇒ Develop forage crops for coastal &amp; hilly areas</li> <li>⇒ Duckweed as a feed for cattle, ducks &amp; poultry</li> <li>⇒ Sugarcane use for livestock farming</li> <li>⇒ Forage production &amp; embankment protection</li> <li>⇒ Nutrient recycling &amp; integrated farming</li> <li>⇒ Unconventional feed evaluation for poultry &amp; chicken.</li> <li>⇒ Efficient utilization of concentrate feeds &amp; wastes.</li> </ul>
B. Genetic development of animals & birds	<ul style="list-style-type: none"> <li>⇒ Genetic improvement of Cattle, goats, buffalo &amp; Sheep of different regions.</li> <li>⇒ Gayal conservation &amp; its development</li> <li>⇒ Development of semi scavenging poultry breeds</li> <li>⇒ Development of native duck breeds</li> </ul>	<ul style="list-style-type: none"> <li>⇒ Optimum level of exotic blood inclusion in native cows for milk production.</li> <li>⇒ Pabna cattle development <i>(On-going)</i></li> <li>⇒ Gayal conservation &amp; improvement <i>(On-going)</i></li> <li>⇒ Native chicken development <i>(On-going)</i></li> </ul>	<ul style="list-style-type: none"> <li>⇒ Cattle breed development.</li> <li>⇒ Genetic improvement of Bengal goats &amp; Sheep</li> <li>⇒ Genetic improvement of buffaloes</li> <li>⇒ Native duck &amp; chicken breed development</li> </ul>
C. Disease prevention & health management	<ul style="list-style-type: none"> <li>⇒ Vaccine production for FMD, Gumboro, PPR, Salmonellosis, Goat pox, enterotoxemia.</li> <li>⇒ Efficacy testing of available vaccines &amp; anthelmintics.</li> <li>⇒ Prevention &amp; control of parasitic diseases.</li> <li>⇒ Control measures for reproductive diseases &amp; infertility.</li> </ul>	<ul style="list-style-type: none"> <li>⇒ Developed vaccines for PPR, Goat pox, Gumboro &amp; salmonellosis,</li> <li>⇒ Tested efficacy of RDV &amp; FMD</li> <li>⇒ FMD virus typing</li> <li>⇒ Developed model for controlling parasitic diseases of cattle.</li> <li>⇒ Control measures for brucella abortus.</li> </ul>	<ul style="list-style-type: none"> <li>⇒ FMD vaccines development.</li> <li>⇒ Efficacy testing of new vaccines &amp; anthelmintic.</li> <li>⇒ Control of kid dysentery.</li> <li>⇒ Control measures for diseases transmission through AI.</li> <li>⇒ Control measures for Marex, Thylerosis &amp; Trypanosomiasis.</li> <li>⇒ Combined vaccines for multiple viral diseases.</li> <li>⇒ Reproductive &amp; infertility disease problems.</li> </ul>
D. Farming packages.	<ul style="list-style-type: none"> <li>⇒ Development of profitable farming models of poultry, goat, cattle, sheep &amp; other birds.</li> </ul>	<ul style="list-style-type: none"> <li>⇒ Package development for Fattening &amp; Dairy farming, Small holder goat rearing, Broiler, Duck &amp; Quail farming &amp; Forage production, preservation &amp; utilization.</li> </ul>	<ul style="list-style-type: none"> <li>⇒ Integrated livestock &amp; poultry farming models.</li> </ul>

**Bangladesh Agricultural Research Council**  
New Airport Road, Farmgate, Dhaka-1215.

NARS  
Form No. P-1  
Page 1 of 20

**RESEARCH PROPOSAL**

Received at BARC	Planning & Evaluation division Date : ..... By : .....	Concerned Division Date : ..... By : .....
------------------	--	--

Reviewed by BARC	Reviewed by proponent (ATC/ARI/others)
------------------	---

Name : .....  
Date : .....

Name : .....  
Date : .....

Date of submission by the proponent as per recommendation of reviewer :  
(If modifications are needed.)

**PROJECT IDENTIFICATION DATA**

Check appropriate Box :	Coordinated	Independently Implemented
	New	Extension/revision Date upto : .....

Project Title : **Development of Cellular Bio-techniques for Quick Genetic Improvement of Dairy Cattle in Bangladesh.**

Sub-project Title :

Project/Sub-project Cost (lakh Taka) : 22.32

Duration(months/years and from – to) 24 months: 01 January'99 – 31 December'2000.

To be filled in by BARC	Commodity----- Non-commodity-----	Priority Rank (NARS)
-------------------------	--------------------------------------	-------------------------

Implementing Agency/ Station(s)/ Unit(s)	<b>Central AI Laboratory, Savar, Dhaka , Directorate of Livestock, Services, Bangladesh, Dhaka.</b>
---	---

Advisor's Name(s)	1. <b>DR. Azizur Rahman</b>
Designation / title	Deputy Director
Mailing Address	Artificial Insemination & Fodder Cultivation, Bangladesh, Khamarbari Road, Farmgate, Dhaka-1215.

	2. <b>DR. Talukder Saiful Islam.</b> Principal Scientific Officer(B.Q.) Livestock Research Institute, Mohakhali, Dhaka.
--	---

Principal Investigator(PI) Name	<b>Md. Shaheb Ali.</b>
Designation/Title	: Livestock Officer(F&B)
Mailing Address	: Central AI Laboratory, Savar Dairy farm, Savar, Dhaka.

Continued to page # 1a

---

Co-investigator(s) and his/her Name(s) : 1. DR. Delwar Hossain Molla, V.O(in-charge),  
Savar Dairy Farm.  
2. DR. Md. Ainul Haque, Asstt. Director,  
Central AI Laboratory, Savar, Dhaka.  
3. DR. B. K. Das, Byre Officer,  
Savar Dairy Farm.

---

Submitted by PI : Md. Shaheb Ali.

Endorsed by Organization Head.

Signature :

Signature :

Name : Md. Shaheb Ali.  
Designation : Livestock Officer(F&B)  
Date :

Name : DR. Kazi Abdul Fattah.  
Designation: Director General.  
Date :

---

Project Title : **Development of Cellular Bio-techniques for Quick Genetic Improvement of Dairy Cattle in Bangladesh.**

**WORK PLAN SUMMARY AND ACTIVITY CHART**

**Work Plan summary**

Planned Project Life(in months) : 24

Starting Dates : Planned : 01 January, 1999      Completion : 31 December,2000.  
Actual :

Activity studies or major activities	Duration (months)	Planned cumulative % completion	
		Year	Cumulative %
1. Recruitment of project staff	2	.5	20
2. Procurement of research inputs	3	1	30
3. Studies and development of Bio-techniques and cryo-preservation system.	12	2	50
4. Harvesting and recording of superior progeny to develop the Nucleus herd for the next cycle	5	Total	100
5. Preparation of Final Report	2		

**Activity Chart (In months)**

Activity No. 2 4 6 8 10 12 14 16 18 20 22 24

1.	---											
2.	-----											
3.		-----										
4.						-----						
5.										---		