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FINAL REPORT FOR THE WATER BUFFALOES AND BEEF CATTLE IMPROVEMENT PROJECT (WBBCIP) IN THE REPUBLIC OF THE PHILIPPINES

SEPTEMBER 2005

A joint-JICA Assisted Project of the Philippine Carabao Center and the Bureau of Animal Industry, Department of Agriculture

October 2, 2000 ~ October 1, 2005

ACKNOWLEDGEMENT

This Final Report was made by both the Philippine and Japanese sides of the Water Buffaloes and Beef Cattle Improvement Project (WBBCIP) in the Republic of the Philippines to summarize its five years implementation for submitting mainly JICA and other agencies concerned.

Representatives appeared below confirm that this report has accomplished jointly by the members of the WBBCIP.

September 27, 2005

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Project Manager, WBBCIP
Philippines

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Chief Adviser, JICA
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List of Training Courses/Seminars Conducted

No.	Date		Venue	Component	Object		Course		Target Group	Number of Participants (Summary)					
					WB	BC	Type	Program		Total	PCC	NESF	LGU Technicians	Farmers	Others
36	Sep 07, 2005	Sep 08, 2005	PCC	ALL	O	O	Seminar	Through the Water Buffaloes and Beef Cattle Improvement Project (WBBCIP)	Members concerned	128	42	5	25		56
35	Aug 09, 2005		PCC-Madamba Hall	FM	O		Seminar	Milking Hygiene	Counterparts	22	22				
34	Jul 26, 2005	Jul 28, 2005	PCC-Gene Pool	FM	O	O	Technical Training	Feeding and Management	Technicians	21	5	1	12		3
33	Jun 28, 2005	Jun 29, 2005	PCC-Gene Pool	FM	O	O	Technical Training	Feeding and Management	Farmers	14				14	
32	Apr 27, 2005	Apr 28, 2005	PCC-Gene Pool	FM	O	O	Technical Training	Feeding and Management	Farmers	19				19	
31	Mar 16, 2005	Mar 17, 2005	PCC-Gene Pool	FM	O	O	Technical Training	Feeding and Management	Farmers	23				23	
30	Feb 16, 2005	Feb 17, 2005	PCC-Gene Pool	FM	O	O	Technical Training	Feeding and Management	Farmers	17				17	
29	Jan 25, 2005	Jan 27, 2005	PCC-Gene Pool	FM	O	O	Technical Training	Feeding and Management	Technicians	19	1	1	17		
28	Dec 9, 2004		NESF-BAI	AI	O	O	Seminar	Artificial Insemination	Counterparts	28	22	6			
27	Dec 6, 2004		Digdig	AI	O	O	Seminar	Artificial Insemination	Counterparts	12				12	
26	Nov 24, 2004	Nov 25, 2004	PCC-Gene Pool	FM	O	O	Technical Training	Feeding and Management	Farmers	13				13	
25	Nov 18, 2004	Nov 19, 2004	PCC-Gene Pool	AI	O	O	Technical Training	Artificial Insemination	Technicians	8			8		
24	Sep 15, 2004		NESF-BAI	FM	O	O	Seminar	Grazing & Pasture Management and Conditioning of Silage	Counterparts	40	25	5	10		
23	Sep 14, 2004		PCC-Madamba Hall	FM	O		Seminar	Mastitis of Water Buffaloes	Counterparts	27	27				
22	Aug 24, 2004	Aug 27, 2004	PCC-Gene Pool	FM	O	O	Technical Training	Feeding and Management	Technicians	14	1	2	10		1
21	Aug 18, 2004		NESF-BAI	AI		O	Seminar	Follicular Weight and Ovulation Synchronization	Counterparts	12	5	7			
20	Aug 17, 2004		PCC-Madamba Hall	AI	O		Seminar	Follicular Weight and Ovulation Synchronization	Counterparts	22	22				
19	Aug 9, 2004	Aug 10, 2004	PCC-Gene Pool	AI	O	O	Technical Training	Ovarian Palpation with Ultrasonic Scanning	Technicians	8			8		
18	Jun 24, 2004		Licaong	FM	O	O	Technical Training	Silage Making	Farmers	26				26	

No.	1	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
	Detailed Number of LGU Technicians																				
	San Jose	Cabanatuan	Gimba	Palayan	Gabaldon	Muñoz	Talavera	Quezon	Gen. Tinio	Rizal	Aliaga	Talugtog	Licaong	Cuyapo	Llanera	Carranglan	Zaragosa	Lupao	Bongabon	Laur	Sto. Domingo
36				9	2	2	2	1		1	1	1						1	2		3
35																					
34	2	Licab: 1 Cabiao: 1		3					1		1	1					2				
33																					
32																					
31																					
30																					
29	2		2	1	2	3	1	1	1	2	1	1									
28																					
27																					
26	2					2	1		2								1		2	2	
25	2		1			1		1		1	1	1									
24			2		1	2		2		2	1										
23																					
22	1		2	1		1	1	1			1			1							1
21																					
20																					
19						1	1	1		1	1	1					1			1	
18																					

No.	1	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
	Detailed Number of Farmers																				
	San Jose	Cabanatuan	Gimba	Palayan	Gabaldon	Muñoz	Talavera	Quezon	Gen. Tinio	Rizal	Aliaga	Talugtog	Licaong	Cuyapo	Llanera	Carranglan	Zaragosa	Lupao	Laur	Bongabon	Sto. Domingo
36																					
35																					
34																					
33	4	1				3						1	5								
32	3	3	2	0	0	0	2	0	0	0	0	0	6	3	0	0					0
31			1			3	3			1		4	7		4						
30						6	5					2									4
29																					
28	4						2						4		2						
27	4						2						4		2						
26	2					2	2		2								1		2	2	
25																					
24																					
23																					
22																					
21																					
20																					
19																					
18													26								

List of Training Courses/Seminars Conducted

No.	Date		Venue	Component	Object		Course		Target Group	Number of Participants (Summary)					
					WB	BC	Type	Program		Total	PCC	NESF	LGU Technicians	Farmers	Others
17	Mar 15, 2004	Mar 16, 2004	PCC-Gene Pool	AI	O	O	Technical Training	Ovarian Palpation and Semen Handling	Technicians	6			6		
16	Mar 2, 2004		NESF-BAI	SDS		O	Seminar	Direct Performance Test of Beef Cattle	Counterparts	11	6	5			
15	Feb 17, 2004	Feb 19, 2004	NESF-BAI	FM			Seminar	Proper Operation, Maintenance and Trouble Shooting of Farm Tractor	Counterparts	16	4	3			9
14	Feb 10, 2004	Feb 11, 2004	NESF-BAI	FM		O	Seminar	Cattle Production and Forage Development	Counterparts	21	15	6			
13	Jan 21, 2004		PCC-Madamba Hall	SDS	O	O	Seminar	Dairy Herd Performance Test	Counterparts	40	40				
12	Nov 18, 2003		PCC-Madamba Hall	FM	O	O	Seminar	Calf Management and Herd Health Program	Counterparts	64	64				
11	Oct 6, 2003		PCC-Madamba Hall	AI	O		Seminar	Management of Water Buffalo with Reproductive Problems: Improving Conception Rate	Counterparts	24	24				
10	Sep 17, 2003	Sep 19, 2003	PCC-Gene Pool	AI	O	O	Technical Training	Ovarian Palpation and Semen Handling	Technicians	11			11		
9	Jun 10, 2003		PCC-Madamba Hall	SDS	O	O	Seminar	Methodology of Selection, Data Collection and Performance Test	Counterparts	22	22				
8	Mar 21, 2003		PCC-Madamba Hall	FM	O		Seminar	Utilization of Data from Milking Performance Test	Counterparts	13	13				
7	Mar 13, 2003		PCC-Madamba Hall	AI	O		Seminar	Analysis of Reproductive Data	Counterparts	45	45				
6	Sep 25, 2002		PCC-Madamba Hall	FM		O	Seminar	Feed Sampling and Evaluation Techniques and Review of Basic Principles of Dairy and Beef Cattle	Counterparts	35	35				
5	Jun 18, 2002		Digdig	AI	O	O	Seminar	Frozen Semen Processing	Counterparts	16	8	2			6
4	Mar 18, 2002		PCC-Madamba Hall	AI		O	Seminar	Breeding Disorders in Cows	Counterparts	51	51				
3	Feb 18, 2002		PCC-Madamba Hall	AI	O	O	Seminar	Diagnosis of Reproductive Disorders	Counterparts	51	51				
2	Nov 22, 2001	Nov 23, 2001	Pantabangan				Workshop	Formulating the Livestock Development Plan for the Province of Nueva Ecija	Counterparts	50	46	4			
1	Nov 13, 2000	Nov 16, 2000	Los Baños, Laguna				Workshop	Preparation of the Detailed Technical Implementation Plan of the Water Buffaloes and Beef Cattle Improvement	Counterparts	20	16	4			
									Total	784	543	45	70	110	16

	1	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
No.	Detailed Number of LGU Technicians																				
	San Jose	Cabanatuan	Gimba	Palayan	Gabaldon	Muñoz	Talavera	Quezon	Gen. Tinio	Rizal	Aliaga	Talugtog	Licaong	Cuyapo	Llanera	Carranglan	Zaragosa	Lupao	Bongabon	Laur	Sto. Domingo
17	1		1		1				1	1				1							
16																					
15																					
14																					
13																					
12																					
11																					
10	2		1			2	2			1	1				1	1					
9																					
8																					
7																					
6																					
5																					
4																					
3																					
2																					
1																					
	10	0	9	2	4	16	6	6	4	8	6	3	0	2	1	1	2	0	2	3	1

	1	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
No.	Detailed Number of Farmers																				
	San Jose	Cabanatuan	Gimba	Palayan	Gabaldon	Muñoz	Talavera	Quezon	Gen. Tinio	Rizal	Aliaga	Talugtog	Licaong	Cuyapo	Llanera	Carranglan	Zaragosa	Lupao	Laur	Bongabon	Sto. Domingo
17																					
16																					
15																					
14																					
13																					
12																					
11																					
10																					
9																					
8																					
7																					
6																					
5																					
4																					
3																					
2																					
1																					
	17	4	3	0	0	14	16	0	2	1	0	7	52	3	8	0	1	0	2	2	4

List of Developed Texts, Manuals and Brochures

No.	Title	Published	Component	Specification	Language	Description	Remarks
1	Produksiyon Ng Halamang Damo, Legumbre At Bagaso Para Sa Mga Alagang Kalabaw At Baka (Roughage Production)	April 2004	FM	WB･BC	Tagalog	Manual	
2	Collection, Processing and Handling of Buffalo Semen	December 2004	AI	WB	English	Manual	
3	Semen Processing Guide on Beef Cattle	December 2004	AI	BC	English	Manual	
4	Suplementong Pagkain Para Sa Mga Kalabaw At Baka (Urea-Molasses Mineral Block (UMMB))	September 2005	FM	WB･BC	Tagalog	Brochure	
5	Wastong Paggawa At Pagpapakain Ng Burong Damo (Silage) Para Sa Mga Kalabaw At Baka	September 2005	FM	WB･BC	Tagalog	Brochure	
6	Wastong Paggawa At Pagpapakain Ng Urea-Treated rice Straw (UTRS) Para Sa Mga Kalabaw At Baka	September 2005	FM	WB･BC	Tagalog	Brochure	
7	Wastong Pagtatanim At Pagpapakain Ng Damong Napier (Napier Grass Production) Para Sa Mga Kalabaw At Baka	September 2005	FM	WB･BC	Tagalog	Brochure	
8	Body Condition Scoring in Dairy Buffaloes and Beef Cattle	September 2005	FM	WB･BC	English	Brochure	
9	Paga-Aalis O Pagpuputol Ng Sungay Ng Mga Baka At Kalabaw	September 2005	FM	WB･BC	Tagalog	Brochure	
10	Produksiyon Ng Halamang Damo, Legumbre At Bagaso Para Sa Mga Alagang Kalabaw At Baka (Roughage Production) At Iba Pa	*October 2005*	*FM*	*WB ･BC*	*Tagalog*	*Brochure*	Now printing (Revised Version)
11	*Wastong Paggagatas Ng Kalabaw*	*October 2005*	*FM*	*WB*	*Tagalog*	*Brochure*	Now printing
12	*Wastong Pangangalaga Ng Bulo O Guya*	*October 2005*	*FM*	*WB ･BC*	*Tagalog*	*Brochure*	Now printing
13	*Wastong Pagpapakain Ng Mga Gatasang Kalabaw*	*October 2005*	*FM*	*WB*	*Tagalog*	*Brochure*	Now printing
14	*Directory of Dairy Buffaloes (AI Sires)*	*October 2005*	*SDS*	*WB*	*English*	*Brochure*	Now printing

List of Developed Texts, Manuals and Brochures

No.	Title	Published	Component	Specification	Language	Description	Remarks
15	*Sire Directory of Beef Cattle (Nueva Ecija Stock Farm)*	*October 2005*	*SDS*	*BC*	*English*	*Brochure*	Now printing
16	*Improved Pasture Grasses and Legumes (Nueva Ecija Stock Farm)*	*October 2005*	*FM*	*BC*	*English*	*Brochure*	Now printing
17	*Manual for Feeding and Management of Water Buffaloes and Beef Cattle*	*October 2005*	*FM*	*WB・BC*	*English*	*Manual*	Now printing
18	*Artificial Insemination Manual for Beef Cattle*	*October 2005*	*AI*	*BC*	*English*	*Manual*	Now printing
19	*Artificial Insemination Manual for Water Buffaloes*	*October 2005*	*AI*	*WB*	*English*	*Manual*	Now printing

Plan of Operation

Section: Sire and Dam Selection (SDS)

Version: 4
Date: October 01, 2005

Outputs	Indicators		2000	2001				2002				2003				2004				2005			
			10	1	4	7	10	1	4	7	10	1	4	7	10	1	4	7	10	1	4	7	10
1 Sire and dam selection techniques for WB & BC improved.	1-1 12 offspring male buffaloes based on accurate dams and sires data and 6 offspring male cattle based on direct performance test selected	Plan																					
		Actu. (WB)												◆7	◆12			◆17	◆24				
		(BC)														◆6		◆11				◆17	

(◆: Accumulated Numbers of Selected Male)

Activities	Target/Indicators		2000	2001				2002				2003				2004				2005			
			10	1	4	7	10	1	4	7	10	1	4	7	10	1	4	7	10	1	4	7	10
1 Improvement of selection techniques of sire and dam	Selection technique of sire and dam of water buffalo and beef cattle will be improved																						
1-1 To survey and analyze of actual situation	Actual situation of selection will be grasped and further selection method will be studied																						
1-1-1 To analyze existing data and survey actual situation of project sites	Actual condition of selection at project sites will be grasped																						
	(1) PCC	Plan			***																		
		Actu.																					
	(2) NESF	Plan			***																		
		Actu.																					
1-1-2 To survey and analyze actual situation of farmers	Actual selection and culling at farmer in N.E. province will be grasped																						
	(1) Pilot Area	Plan		***	***																		
		Actu.																					
1-1-3 To be advised by mission and review PO	Appropriate PO will be made	Plan				***																	
		Actu.																					
Attached Lists for Details: Equipment Ledger provided by Japan Side	Inputs (Major Equipment by JICA)				Vehicle			Computer, Printer								Motorbike			Computer				
Dispatch of Japanese Experts	Experts (Name in Box: Long-term/S##: Short-term in the List)			←	Mr. Matsumoto		S2				S6	←	S9			S12	Dr. Kurimoto	→		←	Dr. Saito	→	S18
Counterpart Assignment & Training in Japan	#-##D (Number in the List-Duration of Training Days, with underline: Out of the Project)			6-49D		11-42D									9-45D			7-33D	8-47D				

Plan of Operation

Section: Sire and Dam Selection (SDS)

Version: 4
Date: October 01, 2005

Activities	Target/Indicators		2000	2001				2002				2003				2004				2005			
			10	1	4	7	10	1	4	7	10	1	4	7	10	1	4	7	10	1	4	7	10
1-2 To establish selection methods of sire and dam	Proposed selection methods will be tested																						
1-2-1 To make a detailed plan of improvement	Test will be commenced by certain methods																						
	(1) PCC	Plan				***	***																
		Actu.																					
1-2-2 To collect animal performance data	Accurate performance data will be collected																						
	(1) PCC	Plan					***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	
		Actu.																					
1-2-3 To implement selection and mating	Selection and mating of animals will be implemented according to accurate data																						
	(1) PCC	Plan					***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	
		Actu.																					
1-2-4 To conclude selection methods	Appropriate selection methods in the Philippines will be proposed																						
	(1) PCC	Plan																			***	***	
		Actu.																					
1-2-1 To make a detailed plan of improvement	Improvement will be implemented by guide																						
	(1) NESF	Plan				***	***																
		Actu.																					
Attached Lists for Details: Equipment Ledger provided by Japan Side	Inputs (Major Equipment by JICA)				Vehicle			Computer, Printer								Motorbike			Computer				
Dispatch of Japanese Experts	Experts (Name in Box: Long-term/S##: Short-term in the List)			←	Mr. Matsumoto		S2				S6		S9			S12	Dr. Kurimoto	→		←	Dr. Saito	→	S18
Counterpart Assignment & Training in Japan	#−##D (Number in the List−Duration of Training Days, with underline: Out of the Project)			6-49D		11-42D									9-45D			7-33D	8-47D				

Plan of Operation

Section: Sire and Dam Selection (SDS)

Version: 4
Date: October 01, 2005

Activities	Target/Indicators		2000	2001				2002				2003				2004				2005			
			10	1	4	7	10	1	4	7	10	1	4	7	10	1	4	7	10	1	4	7	10
1-2-2 To implement mating plan	Candidate testing bulls will be produced																						
	(1) NESF	Plan					***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***		
		Actu.																					
1-2-3 To implement direct performance test	Tested bulls will be selected																						
	(1) NESF	Plan					***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***		
		Actu.																					
1-2-4 To conclude selection methods	Appropriate selection methods in the Philippines will be proposed																						
	(1) NESF	Plan																			***	***	
		Actu.																					
Attached Lists for Details: Equipment Ledger provided by Japan Side	Inputs (Major Equipment by JICA)				Vehicle			Computer, Printer								Motorbike			Computer				
Dispatch of Japanese Experts	Experts (Name in Box: Long-term/S##: Short-term in the List)			←	Mr. Matsumoto		S2				S6		S9			S12	Dr. Kurimoto	→		←	Dr. Saito	→	S18
Counterpart Assignment & Training in Japan	#—##D (Number in the List—Duration of Training Days, with underline: Out of the Project)			6-49D		11-42D									9-45D			7-33D	8-47D				

Plan of Operation

Section: Feeding and Management (FM)

Version: 4
Date: October 01, 2005

Outputs	Indicators		2000	2001				2002				2003				2004				2005			
			10	1	4	7	10	1	4	7	10	1	4	7	10	1	4	7	10	1	4	7	10
2 Feeding and management techniques of the PCC, BAI and LGUs technicians improved	2-1 Feeding and management manual developed by 2005	Plan																				◆	
		Actu.																				◆	
	2-2 50 PCC, BAI and LGUs technicians trained on improved technologies on feeding and management	Plan															1st ◆17		2nd ◆34		3rd ◆51		
		Actu.																1st ◆14		2nd ◆33		3rd ◆54	

(◆: Accumulated Numbers of Trained Technicians)

Activities	Target/Indicators		2000	2001				2002				2003				2004				2005			
			10	1	4	7	10	1	4	7	10	1	4	7	10	1	4	7	10	1	4	7	10
2 Improvement of feeding and management techniques	Feeding and management techniques and related training methods of the technicians of the PCC, BAI and LGUs will be																						
2-1 To survey and analyze of actual situation	Actual situation of feeding and management will be grasped and further measure will be studied																						
2-1-1 To analyze existing data and survey actual situation of project sites	Actual situation of feeding and management at project sites will be grasped																						
	(1) PCC	Plan			***																		
		Actu.		▒	▒	▒							▒	▒									
	(2) NESF	Plan			***																		
		Actu.		▒	▒	▒							▒	▒									
2-1-2 To survey and analyze actual situation of farmers	Actual feeding and management at farmer in N.E. province will be grasped																						
	(1) Pilot Area	Plan		***	***																		
		Actu.		▒	▒	▒							▒	▒									
2-1-3 To be advised by mission and review PO	Appropriate PO will be made	Plan				***																	
		Actu.				▒							▒										

Attached Lists for Details																							
Equipment Ledger provided by Japan Side	Inputs (Major Equipment by JICA)			Vehicle, Weighing Scale				Skid Steer Loader, Manure Spreader				Tractor, Forage Harvester, Motorbike				Mixer, Hammer Mill				Water Pump			
Dispatch of Japanese Experts	Experts (Name in Box: Long-term/S##: Short-term in the List)		S1 ← Mr. Tanaka →					S5				S7 ← Mr. Nakatani →				S11				S13/S14			
Counterpart Assignment & Training in Japan	#-##D (Number in the List-Duration of Training Days, with underline: Out of the Project)		14-49D		15-42D			17-28D/18-42D		12-48D		13-43D											

																				Mr. Hidaka →			
																				S16/S17			
																				16-90D			

Plan of Operation

Section: Feeding and Management (FM)

Version: 4
Date: October 01, 2005

Activities	Target/Indicators		2000	2001				2002				2003				2004				2005			
			10	1	4	7	10	1	4	7	10	1	4	7	10	1	4	7	10	1	4	7	10
2-2 To establish a systematic technique for feeding and management	Appropriate feeding manual in the Philippines will be made																						
2-2-1 To implement feeding test	Baseline data for systematic feeding system will be collected																						
	(1) PCC	Plan							***	***	***												
		Actu.																					
	(2) NESF	Plan							***	***	***												
		Actu.																					
2-2-2 To install feeding analysis equipment	Feeding analyze system will be established																						
	(1) PCC	Plan					***	***															
		Actu.																					
2-2-3 To analyze feed	Ingredient of feeding in the field will be acknowledged																						
	(1) PCC	Plan							***	***													
		Actu.																					
	(2) NESF	Plan							***	***													
		Actu.																					
2-2-4 To conduct feeding and management test and collect data	Feeding system for calf and dam will be studied																						
	(1) PCC	Plan										***	***	***	***	***	***	***	***	***	***		
		Actu.																					

Attached Lists for Details																							
	Equipment Ledger provided by Japan Side	Inputs (Major Equipment by JICA)		Vehicle, Weighing Scale				Skid Steer Loader, Manure Spreader				Tractor, Forage Harvester, Motorbike				Mixer, Hammer Mill				Water Pump			
	Dispatch of Japanese Experts	Experts (Name in Box: Long-term/S##: Short-term in the List)		S1		Mr. Tanaka				S5		S7	Mr. Nakatani		S11		S13/14		Mr. Hidaka		S16/17		
	Counterpart Assignment & Training in Japan	#-##D (Number in the List-Duration of Training Days, with underline: Out of the Project)		14-49D		15-42D		17-28D/18-42D		12-48D		13-43D									16-90D		

Plan of Operation

Section: Feeding and Management (FM)

Version: 4
Date: October 01, 2005

Activities	Target/Indicators		2000	2001				2002				2003				2004				2005			
			10	1	4	7	10	1	4	7	10	1	4	7	10	1	4	7	10	1	4	7	10
2-2-5 To conduct feeding and management test and collect data	Feeding system for calf and dam will be studied																						
	(1) NESF	Plan									***	***	***	***	***	***	***	***	***	***			
		Actu.																					
2-3 To establish health management techniques for mastitis, diarrhea and pneumonia	Health management manual suitable for field will be made																						
2-3-1 To collect data on reproduction, health and weaning	Health management system especially nursing will be studied																						
	(1) PCC	Plan										***	***	***	***	***	***	***	***	***	***		
		Actu.																					
2-3-2 To collect data on reproduction, health and weaning	Health management system especially nursing will be studied																						
	(1) NESF	Plan									***	***	***	***	***	***	***	***	***	***			
		Actu.																					
2-4 To implement training courses for technicians of the PCC, BAI and LGUs	Technique of technicians will be improved																						
2-4-1 To implement training for technicians	Training for technicians will be held at PCC																						
	(1) Pilot Area	Plan															***		***		***		
		Actu.																					
Attached Lists for Details: Equipment Ledger provided by Japan Side	Inputs (Major Equipment by JICA)				Vehicle, Weighing Scale				Skid Steer Loader, Manure Spreader				Tractor, Forage Harvester, Motorbike				Mixer, Hammer Mill			Water Pump			
Dispatch of Japanese Experts	Experts (Name in Box: Long-term/S##: Short-term in the List)			S1	Mr. Tanaka				S5				S7	Mr. Nakatani			S11	S13/14		Mr. Hidaka		S16/17	
Counterpart Assignment & Training in Japan	#−##D (Number in the List−Duration of Training Days, with underline: Out of the Project)			14-49D	15-42D				17-28D/18-42D		12−48D		13-43D									16-90D	

Plan of Operation

Section: Artificial Insemination (AI)

Version: 4
Date: October 01, 2005

Outputs	Indicators		2000	2001				2002				2003				2004				2005			
			10	1	4	7	10	1	4	7	10	1	4	7	10	1	4	7	10	1	4	7	10
3 Artificial insemination techniques of the PCC, BAI and LGUs technicians improved	3-1 AI manual on WB and BC developed respectively by 2005	Plan											1. Frozen Semen Processing ◆							2. Artificial Insemination ◆				
		Actu.																	1. ◆			2. ◆		
	3-2 Frozen semen motility rate improved more than 30% after thawing	Plan																						
		Actu.		◆WB: 29.6% ◆ BC: 25.0%				◆WB: 27.4% ◆BC: 22.0%				◆WB: 29.8% ◆BC: 24.0%				◆WB: 30.7% ◆BC: 24.0%				◆WB: 30.7% ◆BC: 25.0%			

(◆: Average in each year)

Activities	Target/Indicators		2000	2001				2002				2003				2004				2005			
			10	1	4	7	10	1	4	7	10	1	4	7	10	1	4	7	10	1	4	7	10
3 Improvement of artificial insemination techniques	Technique of AI technicians of PCC, BAI and LGUs will be improved																						
3-1 To survey and analyze of actual situation	Actual situation of artificial insemination will be grasped and further measure will be studied																						
3-1-1 To analyze existing data and survey actual conditions of project sites	Actual condition of AI at project sites will be grasped																						
	(1) PCC	Plan			***							***	***	***	***								
		Actu.																					
	(2) NESF	Plan			***							***	***	***	***								
		Actu.																					
3-1-2 To visit AI technicians and survey skill	Actual situation of AI in pilot area will be grasped																						
	(1) Pilot Area	Plan			***								***	***	***								
		Actu.																					
3-1-3 To be advised by mission and review PO	Appropriate PO will be made	Plan				***																	
		Actu.																					
Attached Lists for Details: Equipment Ledger provided by Japan Side	Inputs (Major Equipment by JICA)				LN2 Tank, Vehicle				LN2 Field Tank, Automatic Straw Printing Machine, Cooling Chamber, Elevation Apparatus, Ultraviolet Rays Sterilizer																
Dispatch of Japanese Experts	Experts (Name in Box: Long-term/S##: Short-term in the List)				Dr. Kinoshita				S3/4				S8	S10	Dr. Saito		S15				Mr. Kudo		
Counterpart Assignment & Training in Japan	#-##D (Number in the List-Duration of Training Days, with underline: Out of the Project)				25-39D/27-39D								29-54D	22-48D				17~22-46D					

Plan of Operation

Section: Artificial Insemination (AI)

Version: 4
Date: October 01, 2005

Activities	Target/Indicators		2000	2001				2002				2003				2004				2005			
			10	1	4	7	10	1	4	7	10	1	4	7	10	1	4	7	10	1	4	7	10
3-2 To produce high-quality frozen semen	High quality frozen semen will be produced																						
3-2-1 To review process of frozen semen production	Process of frozen semen will be improved																						
	(1) PCC	Plan				***					***	***	***	***									
		Actu.																					
	(2) NESF	Plan				***					***	***	***	***									
		Actu.																					
3-2-2 To renew and install equipment	Production system of frozen semen will be established																						
	(1) PCC	Plan				***	***							***				***					
		Actu.																					
	(2) NESF	Plan				***	***				***			***				***					
		Actu.																					
3-2-3 To produce frozen semen	High quality frozen semen will be able to be distributed																						
	(1) PCC	Plan		***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
		Actu.																					
	(2) NESF	Plan					***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
		Actu.																					
Attached Lists for Details: Equipment Ledger provided by Japan Side	Inputs (Major Equipment by JICA)			LN2 Tank, Vehicle				LN2 Field Tank, Automatic Straw Printing Machine, Cooling Chamber, Elevation Apparatus, Ultraviolet Rays Sterilizer																
Dispatch of Japanese Experts	Experts (Name in Box: Long-term/S##: Short-term in the List)			Dr. Kinoshita				S3/4				S8	S10	Dr. Saito		S15				Mr. Kudo			
Counterpart Assignment & Training in Japan	#-##D (Number in the List-Duration of Training Days, with underline: Out of the Project)			25-39D/27-39D								29-54D		22-48D				17~22-46D				

Plan of Operation

Section: Artificial Insemination (AI)

Version: 4
Date: October 01, 2005

Activities	Target/Indicators		2000	2001				2002				2003				2004				2005			
			10	1	4	7	10	1	4	7	10	1	4	7	10	1	4	7	10	1	4	7	10
3-3 To implement training courses for technicians of the PCC, BAI and LGUs	Technique of AI technicians will be improved																						
3-3-1 To visit AI technicians and advise skill	Technique of individual AI technicians will be improved																						
	(1) Pilot Area	Plan			***												***	***					
		Actu.																					
3-3-2 To have seminar	Updated knowledge will be understood by AI technicians																						
	(1) Pilot Area	Plan															***	***					
		Actu.																					
3-3-3 To collect data on AI	Measure of improvement of AI will be studied																						
	(1) PCC	Plan						***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
		Actu.																					
	(2) NESF	Plan						***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
		Actu.																					
3-4 To review and update AI manual used by the PCC and BAI	Technique of AI technicians will be improved																						
3-4-1 To review and update AI manual	Technique of individual AI technicians will be improved																						
	(1) For WB	Plan															***	***					
		Actu.																					
	(2) For BC	Plan																***	***				
		Actu.																					
Attached Lists for Details: Equipment Ledger provided by Japan Side	Inputs (Major Equipment by JICA)				LN2 Tank, Vehicle				LN2 Field Tank, Automatic Straw Printing Machine, Cooling Chamber, Elevation Apparatus, Ultraviolet Rays Sterilizer																
Dispatch of Japanese Experts	Experts (Name in Box: Long-term/S##: Short-term in the List)				← Dr. Kinoshita				S3/4 →				← Dr. Saito			S8	S10	→ S15		← Mr. Kudo →			
Counterpart Assignment & Training in Japan	#−##D (Number in the List−Duration of Training Days, with underline: Out of the Project)					25-39D/27-39D								29-54D	22-48D				17～22-46D				

Plan of Operation

Section: Feeding and Management (FM)

Version: 4
Date: October 01, 2005

Outputs	Indicators		2000	2001				2002				2003				2004				2005			
			10	1	4	7	10	1	4	7	10	1	4	7	10	1	4	7	10	1	4	7	10
4 Training Programs for model farms on feeding and management improved	4-1 5 training courses for model farmers conducted and 80% of farmers adapted the technologies	Plan													1st ◆15		2nd ◆30		3rd ◆45			4th/5th ◆60/◆75	
		Actu.																	1st (89%) ◆13	2nd (%) ◆30	3rd (%) ◆53	4th/5th (%)(%) ◆72/◆86	

(◆: Accumulated Numbers of Trained Farmers)

Activities	Target/Indicators		2000	2001				2002				2003				2004				2005			
			10	1	4	7	10	1	4	7	10	1	4	7	10	1	4	7	10	1	4	7	10
4 Development of training programs for model farmers on feeding management	Training program of feeding and management technique for farmers will be improved																						
4-1 To develop training program and material for model farmers and LGUs technicians	Training program of feeding and management for farmers will be proposed																						
4-1-1 To make training materials	Training material in local language will be made																						
	(1) Pilot Area	Plan											***	***		***						***	
		Actu.																					

Attached Lists for Details

		2000	2001				2002				2003				2004				2005			
		10	1	4	7	10	1	4	7	10	1	4	7	10	1	4	7	10	1	4	7	10
Equipment Ledger provided by Japan Side	Inputs (Major Equipment by JICA)			Vehicle, Weighing Scale				Skid Steer Loader, Manure Spreader						Tractor, Forage Harvester, Motorbike				Mixer, Hammer Mill			Water Pump	
Dispatch of Japanese Experts	Experts (Name in Box: Long-term/S##: Short-term in the List)		S1	Mr. Tanaka				S5				S7	Mr. Nakatani		S11			S13/14		Mr. Hidaka		S16/17	
Counterpart Assignment & Training in Japan	#-##D (Number in the List-Duration of Training Days, with underline: Out of the Project)		14-49D		15-42D			17-28D/18-42D		12-48D		13-43D										16-90D	

Plan of Operation

Section: Feeding and Management (FM)

Version: 4
Date: October 01, 2005

Activities		Target/Indicators		2000	2001				2002				2003				2004				2005			
				10	1	4	7	10	1	4	7	10	1	4	7	10	1	4	7	10	1	4	7	10
4-2	To implement training courses for model farmers and LGUs technicians	Techniques of model farmers will be improved																						
4-2-1	To implement training	Training for model farmers will be implemented at PCC																						
		(1) Pilot Area	Plan													***		***		***		***		
			Actu.																					
4-3	To evaluate the results of training courses	Data of survey of model farmers will be put together and concluded																						
4-3-1	To evaluate the results	Survey of model farmers will be conducted																						
		(1) Pilot Area	Plan																***				***	
			Actu.																					
Attached Lists for Details	Equipment Ledger provided by Japan Side	Inputs (Major Equipment by JICA)				Vehicle, Weighing Scale			Skid Steer Loader, Manure Spreader				Tractor, Forage Harvester, Motorbike							Mixer, Hammer Mill			Water Pump	
	Dispatch of Japanese Experts	Experts (Name in Box: Long-term/S##: Short-term in the List)			S1		Mr. Tanaka				S5				S7	Mr. Nakatani			S11		S13/14		Mr. Hidaka	S16/17
	Counterpart Assignment & Training in Japan	#-##D (Number in the List-Duration of Training Days, with underline: Out of the Project)			14-49D		15-42D		17-28D/18-42D		12-48D		13-43D											16-90D

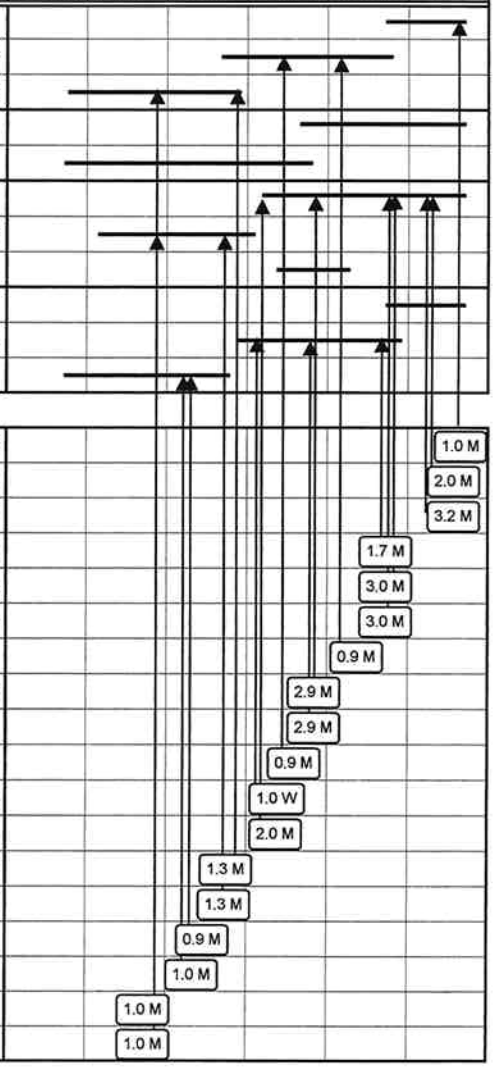
DISPATCH OF JAPANESE EXPERTS

1. Long-term Experts

No.	Name		Component			Period of Assignment	
						From	To
1	Dr. Norio Saito	斉藤 則夫	Chief Advisor/Sire and Dam Selection	チーフアドヴァイザー／種畜選抜	CA/SDS	2-Oct-04	1-Oct-05
2	Dr. Tomoaki Kurimoto	栗本 共明	Chief Advisor/Sire and Dam Selection	チーフアドヴァイザー／種畜選抜	CA/SDS	1-Nov-02	31-Oct-04
3	Mr. Yutaka Matsumoto	松本 豊	Chief Advisor/Sire and Dam Selection	チーフアドヴァイザー／種畜選抜	CA/SDS	27-Nov-00	26-Nov-02
4	Mr. Kohei Kuroiwa	黒岩 康平	Project Coordinator	業務調整	PC	8-Sep-03	1-Oct-05
5	Mr. Hideyuki Adachi	安達 秀行	Project Coordinator	業務調整	PC	2-Oct-00	1-Oct-03
6	Mr. Toshiaki Hidaka	日高 俊明	Feeding and Management	飼養管理	FM	3-Mar-03	1-Oct-05
7	Mr. Osamu Tanaka	田仲 修	Feeding and Management	飼養管理	FM	1-Feb-01	31-Jan-03
8	Mr. Masayoshi Nakatani	中谷 政義	Feed Production	飼料生産	FP (FM)	20-Apr-03	20-Apr-04
9	Mr. Kazuhiro Kudo	工藤 一弘	Artificial Insemination	人工授精	AI	2-Oct-04	1-Oct-05
10	Dr. Hiroshi Saito	斉藤 博	Artificial Insemination	人工授精	AI	17-Dec-02	16-Dec-04
11	Dr. Hidetoshi Kinoshita	木下 秀俊	Artificial Insemination	人工授精	AI	2-Oct-00	1-Oct-02

2. Short-term Experts

18	Mr. Naoki Kawanishi	河西 直樹	Sire and Dam Selection	種畜選抜	SDS	18-Aug-05	17-Sep-05
17	Mr. Ken Nakabayashi	中林 見	Milking Hygiene	搾乳衛生	FM	13-Jun-05	12-Aug-05
16	Mr. Seijun Kikuchi	菊池 成純	Grassland Management and Utilization	草地管理・利用	FM	13-Jun-05	17-Sep-05
15	Dr. Norio Saito	斉藤 則夫	Artificial Insemination (Improvement of Reproductive Disorder)	人工授精（低受胎対策）	AI	28-Jun-04	20-Aug-04
14	Mr. Sonryo Morita	森田 孫良	Grazing Management (Feeding and Management)	放牧管理（飼養管理）	FM	22-Jun-04	18-Sep-04
13	Dr. Michitaka Hashimoto	橋本 道孝	Hygiene Management	衛生対策	FM	22-Jun-04	18-Sep-04
12	Mr. Tadashi Kawamura	河村 正	Direct Performance Test on Beef Cattle	肉用牛直接検定	SDS	9-Feb-04	6-Mar-04
11	Dr. Motomitsu Taguchi	田口 本光	Nursing and Health	哺育・衛生	FM	25-Aug-03	22-Nov-03
10	Dr. Atsushi Hatsugaya	初谷 敦	Improvement of Conception Rate	低受胎対策	AI	18-Jul-03	17-Oct-03
9	Mr. Tsutomu Yoshizawa	吉臭 努	Methodology of Selection Data and Performance Test	選抜手法分析	SDS	19-May-03	14-Jun-03
8	Dr. Yukio Kanai	金井 幸雄	Reproductive Disorder	繁殖障害	AI	9-Mar-03	15-Mar-03
7	Mr. Masahiro Masuda	舛田 正博	Test for Milk Quality	乳質検査	FM	24-Jan-03	25-Mar-03
6	Mr. Tsutomu Yoshizawa	吉臭 努	Methodology of Selection Data and Performance Test	選抜手法分析	SDS	8-Oct-02	15-Nov-02
5	Mr. Toshiaki Hayakawa	早川 俊明	Feed Analysis	飼料分析	FM	20-Aug-02	29-Sep-02
4	Dr. Fuminori Nagai	永井 文紀	Reproductive Disorder	繁殖障害	AI	22-Feb-02	22-Mar-02
3	Dr. Hiroshi Saito	斉藤 博	Frozen Semen Production	凍結精液製造	AI	6-Feb-02	8-Mar-02
2	Mr. Takatoshi Nakanishi	仲西 孝敏	Sire and Dam Selection	種蓄選抜	SDS	20-Nov-01	19-Dec-01
1	Dr. Shuichi Matsuda	松田 修一	Calf Management	子牛飼養管理	FM	20-Nov-01	19-Dec-01



COUNTERPART ALLOCATION

No.	Assignment of the Project	Site	Name	Field	Title
1	*Project Director*	DA	Hon. Usec Cesar M. Drilon, Jr.		Under Secretary, DA
2	*Project Deputy Director, BAI*	BAI	Dr. Jose Q. Molina		Director, BAI, DA
3	*Project Deputy Director, PCC*	PCC	Dr. Libertado C. Cruz		Executive Director, PCC, DA
4	*Project Manager*	BAI	Dr. Rubina O. Cresencio		Information Officer V, PCC, DA
5	*Project Sub-manager*	NESF	Dr. Baltazar P. Mateo		Center Chief IV, NESF, BAI, DA
6	*Sire and Dam Selection*	NESF	Dr. Edwin D. Eusebio		Farm Veterinarian II, NESF, BAI, DA
7	(Dr. Norio Saito)	NESF	Ms. Diosamia V. Mallari	Data Processing	Agriculturist I, NESF, BAI, DA
8		PCC	Dr. Ester B. Flores		Project Development Officer IV, PCC, DA
9		PCC	Ms. Jennifer B. Fernandez	Data Processing	Laboratory Aide II
10	*Feeding and Management*	NESF	Mr. Clodualdo F. Mariano	Cum-forage Production	Agriculturist I, NESF, BAI, DA
11	(Mr. Toshiaki Hidaka)	NESF	Mr. Bonifacio R. Godoy		Agriculturist I, NESF, BAI, DA
12		PCC	Dr. Daniel L. Aquino		Supervisor Science Research Specialist, PCC, DA
13		PCC	Dr. Apolinario L. Salazar, Jr.	Health Management	Science Research Specialist I, PCC, DA
14		PCC	Mr. Nomer P. Garcia	Model Farmers	Senior Science Research Specialist, PCC, DA
15		PCC	Dr. Perla DC. Florendo	Feed Analysis	Senior Science Research Specialist, PCC-CLSU
16		PCC	Ms. Mina P. Abella	Milk Quality Analysis	Senior Science Research Specialist II, PCC-CLSU
17		PCC	Ms. Ferrymar I. Gaspar	Data Processing	Data Encoder
18		PCC	Mr. Ronaldo S. Sadural	Forage Production	Supply Officer III
19	*Artificial Insemination*	NESF	Ms. Rosalinda P. Mateo	Frozen Semen Processing	Agriculturist II, NESF, BAI, DA
20	(Mr. Kazuhiro Kudo)	NESF	Ms. Ursula G. Serafica	Frozen Semen Processing	Farm Worker II, NESF, BAI, DA
21		PCC	Dr. Felomino V. Mamuad		Deputy Executive Director, PCC, DA
22		PCC	Ms. Emma V. Venturina	Frozen Semen Processing	Science Research Specialist II, PCC-CLSU
23		PCC	Mr. Hernando V. Venturina	Artificial Insemination	Supervisor Science Research Specialist, PCC, DA
24		PVO	Dr. Mario P. Delfin	Artificial Insemination	Chief of Animal Propagation Divisions, Nueva Ecija Provincial Veterinary Office
25		PVO	Mr. Jose III. H. Inza Cruz	AI Diffusion Plan	Farm Worker II, Nueva Ecija Provincial Veterinary Office

COUNTERPART ALLOCATION

No.	Assignment of the Project	Site	Name	Field	Title
	Project Office Staff	PCC	Ms. Ma Victoria D. Abesamis	Secretary	PCC, DA
			Ms. Sonia D. Pol	Technical Assistant	Contractor, PCC
			Ms. Kristalyn A. Parala	Technical Assistant	Contractor, PCC
			Mr. Ismael A. Gajonera	Office Assistant	Contractor, PCC
			Mr. Paulo F. Romero	Driver	Contractor, PCC
			Mr. Roderick V. Javier	Driver	Contractor, JICA

COUNTERPART ASSIGNMENT and TRAINING IN JAPAN

No.	Assignment of the Project	Site	Name	Period of Assignment in the Project (Upper)/Counterpart Training in Japan (Lower)							
				From	To	H12	H13	H14	H15	H16	H17
						2000	2001	2002	2003	2004	2005
1	*Project Director*	DA	Hon. Usec Cesar M. Drilon, Jr.	Oct-00	Present	———					
2	*Project Deputy Director, BAI*	BAI	Dr. Jose Q. Molina	Oct-00	Present	———					
3	*Project Deputy Director, PCC*	PCC	Dr. Libertado C. Cruz	Oct-00	Present	———					
4	*Project Manager*	BAI	Dr. Rubina O. Cresencio	Oct-00	Present	———					
(1)				17-Sep-00	29-Sep-00	12 Days					
				NLBCs, etc./家畜改良センター本所等		(Project Management/プロジェクト運営管理)					
5	*Project Sub-manager*	NESF	Dr. Baltazar P. Mateo	Oct-00	Present	———					

COUNTERPART ASSIGNMENT and TRAINING IN JAPAN

No.	Assignment of the Project	Site	Name	Period of Assignment in the Project (Upper)/Counterpart Training in Japan (Lower)							
				From	To	H12	H13	H14	H15	H16	H17
						2000	2001	2002	2003	2004	2005
6	*Sire and Dam Selection*	NESF	Dr. Edwin D. Eusebio	Oct-00	Present						
(2)				30-Jan-01	20-Mar-01		49 Days				
				Tottori Station, NLBC/鳥取・家畜改良センター			(Selection of Sire and Dam/家畜育種)				
7		NESF	Ms. Diosamia V. Mallari	Sep-02	Present						
(3)				17-Aug-04	19-Sep-04					33 Days	
				Tottori Station, NLBC/鳥取・家畜改良センター						(Direct Performance Test on Beef Cattle/肉用牛直接検定)	
8		PCC	Dr. Ester B. Flores	Aug-03	Present						
(4)				17-Aug-04	03-Oct-04					47 Days	
				NLBC HQ/家畜改良センター本所、他						(Pedigree Registration System/血統登録システム)	
9		PCC	Ms. Jennifer B. Fernandez	Apr-01	Present						
(5)				2-Oct-03	16-Nov-03				45 Days		
				Iwate Station, NLBC/岩手・家畜改良センター					(Dairy herd Performance Test/乳用牛群検定)		
10		PCC	Dr. Peregrino G. Duran	Apr-02	Aug-03						
11		PCC	Dr. Claro N. Mingala	Apr-01	Mar-02						
(6)				3-Jul-01	14-Aug-01		42 Days				
				Niikappu Station, NLBC/新冠・家畜改良センター			(Sire and Dam Selection/種畜選抜)				
12	*Feeding and Management*	NESF	Mr. Clodualdo F. Mariano	Jul-02	Present						
(7)				5-Aug-02	22-Sep-02				48 Days		
				Tottori Station, NLBC/鳥取・家畜改良センター					(Reproductive Disorder on Beef Cattle/肉用牛繁殖障害)		

COUNTERPART ASSIGNMENT and TRAINING IN JAPAN

No.	Assignment of the Project	Site	Name	Period of Assignment in the Project (Upper)/Counterpart Training in Japan (Lower)							
				From	To	H12	H13	H14	H15	H16	H17
						2000	2001	2002	2003	2004	2005
13	*Feeding and Management*	NESF	Mr. Bonifacio R. Godoy	Oct-01	Present						
(8)				15-May-03	27-Jun-03			43 Days			
				Ouu Station, NLBC/奥羽・家畜改良センター				(Calf Management on Beef Cattle/肉用牛子牛管理)			
14		PCC	Dr. Daniel L. Aquino	Oct-00	Present						
(9)				30-Jan-01	20-Mar-01		49 Days				
				Niikappu Station, NLBC/新冠・家畜改良センター			(Feeding and Management/飼養管理)				
15		PCC	Dr. Apolinario L. Salazar, Jr.	Apr-01	Present						
(10)				3-Jul-01	14-Aug-01		42 Days				
				NLRI/Iwate Station, NLBC/岩手・家畜改良センター			(Calf Management/子牛飼養管理)				
16		PCC	Dr. Nomer P. Garcia	Jul-02	Present						
(11)				9-May-05	7-Aug-05						90 Days
				NLBC HQ/家畜改良センター本所							(Forage Production and Utilization/飼料生産・利用)
17		PCC	Dr. Perla DC. Florendo	Aug-01	Present						
(12)				18-Jun-02	16-Jul-02			28 Days			
				NLBC HQ/家畜改良センター本所				(Feed Analysis/飼料成分分析)			
18		PCC	Ms. Mina P. Abella	Aug-01	Present						
(13)				2-Jul-02	13-Aug-02			42 Days			
				Iwate Station, NLBC/岩手・家畜改良センター				(Test for Milk Quality/乳質検査)			
19		PCC	Ms. Ferrymar I. Gaspar	Apr-02	Present						

COUNTERPART ASSIGNMENT and TRAINING IN JAPAN

No.	Assignment of the Project	Site	Name	Period of Assignment in the Project (Upper)/Counterpart Training in Japan (Lower)							
				From	To	H12	H13	H14	H15	H16	H17
						2000	2001	2002	2003	2004	2005
20	*Feeding and Management*	PCC	Mr. Ronaldo S. Sadural	May-04	Present					———	
21	*Artificial Insemination*	NESF	Ms. Rosalinda P. Mateo	Jul-02	Present			———	———	———	
22		NESF	Ms. Ursula G. Serafica	Jul-02	Present			———	———	———	
(14)				6-Oct-03	23-Nov-03	48 Days					
				Tottori Station, NLBC/鳥取・家畜改良センター		(Frozen Semen Production/凍結精液製造)					
23		NESF	Mr. Luisito Avante	Jul-02	Jan-03			—			
24		PCC	Dr. Felomino V. Mamuad	Oct-00	Present	———	———	———	———	———	
25		PCC	Ms. Emma V. Venturina	Jul-02	Present			———	———	———	
(15)				1-Oct-01	9-Nov-01	39 Days					
				Ouu Station, NLBC/奥羽・家畜改良センター		(Frozen Semen Production/凍結精液製造)					
26		PCC	Mr. Hernando V. Venturina	Oct-00	Present	———	———	———	———	———	

COUNTERPART ASSIGNMENT and TRAINING IN JAPAN

No.	Assignment of the Project	Site	Name	Period of Assignment in the Project (Upper)/Counterpart Training in Japan (Lower)							
				From	To	H12	H13	H14	H15	H16	H17
						2000	2001	2002	2003	2004	2005
27	*Artificial Insemination*	PCC	Dr. Nancy S. Abes	Jul-01	May-02		———				
(16)				1-Oct-01	9-Nov-01	39 Days					
				Ouu Station, NLBC/奥羽・家畜改良センター		(Reproductive Disorder/繁殖障害)					
28		PVO	Dr. Mario P. Delfin	May-02	Present			———	———	———	———
29		PVO	Mr. Jose III. H. Inza Cruz	May-02	Present			———	———	———	———
(17)				13-May-03	6-Jul-03	54 Days					
				NLBC HQ/家畜改良センター本所		(Artificial Insemination Distribution Plan/牛育種・人工授精技術集団コース)					
		PCC	Mr. Everlito A. Mendoza	Jul-02	Present			———	———	———	———
(18)		Digdig		31-Aug-04	16-Oct-04	46 Days					
				Tokachi, NLBC/十勝・家畜改良センター		(Artificial Insemination/人工授精技術)					
		PCC	Mr. Elizalde S. Ringor	Sep-02	Present			———	———	———	———
(19)		Module		31-Aug-04	16-Oct-04	46 Days					
				Tokachi, NLBC/十勝・家畜改良センター		(Artificial Insemination/人工授精技術)					
		PVO	Mr. Richard F. Aquino								
(20)				31-Aug-04	16-Oct-04	46 Days					
				Tokachi, NLBC/十勝・家畜改良センター		(Artificial Insemination/人工授精技術)					
		PVO	Mr. Lito R. Lopez								
(21)				31-Aug-04	16-Oct-04	46 Days					
				Tokachi, NLBC/十勝・家畜改良センター		(Artificial Insemination/人工授精技術)					

COUNTERPART ASSIGNMENT and TRAINING IN JAPAN

No.	Assignment of the Project	Site	Name	Period of Assignment in the Project (Upper)/Counterpart Training in Japan (Lower)							
				From	To	H12	H13	H14	H15	H16	H17
						2000	2001	2002	2003	2004	2005
(22)	*Artificial Insemination*	Munic. Office	Mr. Gregorio M. Ordonez (Talugtog City)								
				31-Aug-04	16-Oct-04						46 Days
				Tokachi, NLBC/十勝・家畜改良センター							(Artificial Insemination/人工授精技術)
(23)		Munic. Office	Ms. Gina G. Tuquero (San Jose City)								
				31-Aug-04	16-Oct-04						46 Days
				Tokachi, NLBC/十勝・家畜改良センター							(Artificial Insemination/人工授精技術)

DEED OF DONATION

KNOW ALL MEN BY THESE PRESENTS:

That the **Japan International Cooperation Agency (JICA)** (hereinafter referred to as the DONOR), with address at the 40th Floor, Yuchengco Tower, RCBC Plaza, 6819 Ayala Avenue, Makati City, Metro Manila, represented by **Mr. Shozo MATSUURA, Resident Representative**, of legal age, hereby freely and voluntarily give, convey and transfer by way of donation unto the **Philippine Carabao Center (PCC)** (hereinafter referred to as the DONEE), the following equipment attached hereto, to have and to hold the same by the DONEE, absolutely and forever, for the use of the Water Buffaloes and Beef Cattle Improvement Project (WBBCIP), provided that the maintenance of the said equipment will be the sole responsibility of the DONEE.

That the DONEE, represented by **Dr. Libertado C. Cruz, Executive Director**, of legal age, hereby accept and receive the abovementioned donation with the understanding that the DONEE will maintain and keep the equipment in good working condition; and on behalf of the DONEE hereby thank JICA and Mr. Shozo MATSUURA for their generosity and liberality.

Dated this 27th day of September 2005 in Makati City, Philippines.

DONOR:
JAPAN INTERNATIONAL
COOPERATION AGENCY (JICA)

SHOZO MATSUURA
Resident Representative

DONEE:
PHILIPPINE CARABAO CENTER (PCC)

Libertado C. Cruz
Executive Director

DEED OF DONATION

KNOW ALL MEN BY THESE PRESENTS:

That the **Japan International Cooperation Agency (JICA)** (hereinafter referred to as the DONOR), with address at the 40th Floor, Yuchengco Tower, RCBC Plaza, 6819 Ayala Avenue, Makati City, Metro Manila, represented by **Mr. Shozo MATSUURA, Resident Representative**, of legal age, hereby freely and voluntarily give, convey and transfer by way of donation unto the **Bureau of Animal Industry (BAI)** (hereinafter referred to as the DONEE), the following equipment attached hereto, to have and to hold the same by the DONEE, absolutely and forever, for the use of the Water Buffaloes and Beef Cattle Improvement Project (WBBCIP), provided that the maintenance of the said equipment will be the sole responsibility of the DONEE.

That the DONEE, represented by **Dr. Davinio P. Catbagan, Officer-In-Charge, Office of the Director**, of legal age, hereby accept and receive the abovementioned donation with the understanding that the DONEE will maintain and keep the equipment in good working condition; and on behalf of the DONEE hereby thank JICA and Mr. Shozo MATSUURA for their generosity and liberality.

Dated this 27th day of September 2005 in Makati City, Philippines.

DONOR:
JAPAN INTERNATIONAL
COOPERATION AGENCY (JICA)

SHOZO MATSUURA
Resident Representative

DONEE:
BUREAU OF ANIMAL INDUSTRY (BAI)

for **Davinio P. Catbagan**
Officer-In-Charge
Office of the Director

DEED OF DONATION

KNOW ALL MEN BY THESE PRESENTS:

That the **Japan International Cooperation Agency (JICA)** (hereinafter referred to as the DONOR), with address at the 40th Floor, Yuchengco Tower, RCBC Plaza, 6819 Ayala Avenue, Makati City, Metro Manila, represented by **Mr. Shozo MATSUURA, Resident Representative**, of legal age, hereby freely and voluntarily give, convey and transfer by way of donation unto the **Provincial Veterinary Office (PVO), Nueva Ecija** (hereinafter referred to as the DONEE), the following equipment attached hereto, to have and to hold the same by the DONEE, absolutely and forever, for the use of the Water Buffaloes and Beef Cattle Improvement Project (WBBCIP), provided that the maintenance of the said equipment will be the sole responsibility of the DONEE.

That the DONEE, represented by **Dr. Jennilyn M. Averilla, Provincial Veterinarian**, of legal age, hereby accept and receive the abovementioned donation with the understanding that the DONEE will maintain and keep the equipment in good working condition; and on behalf of the DONEE hereby thank JICA and Mr. Shozo MATSUURA for their generosity and liberality.

Dated this 27th day of September 2005 in Makati City, Philippines.

DONOR:
JAPAN INTERNATIONAL
COOPERATION AGENCY (JICA)

SHOZO MATSUURA
Resident Representative

DONEE:
PROVINCIAL VETERINARY
OFFICE (PVO)

Jennilyn M. Averilla
Provincial Veterinarian
Nueva Ecija

EQUIPMENT LEDGER PROVIDED BY JAPAN SIDE

AE: Accompany Equipment GLC: General Local Cost LAC: Local Application Cost SM: Security Measure ▽
Provided Equipment (H12: Year 2000 H13: Year 2001 H14: Year 2002 H15: Year 2003 H16: Year 2004 H17: 2005) ▽
PCC: Philippine Carabao Center NESF: Nueva Ecija Stock Farm Digdig: Digdig Farm/PCC PVO: Provincial Veterinarian Office ▽
SDS: Sire and Dam Selection FM: Feeding and Management AI: Artificial Insemination GEN: General Affairs▽
A: Good B: Moderate C: Bad ▽
A: Frequently B: Sometimes C: Occasionally ▽

No.	Equipment	Manufacturer	Model	Date-in	Price	Budget	Deployment	Section	Condition	Frequency
1	PC (Desktop)	FUJITSU	FMV C4/66L	06-Nov-00	¥ 288,000	AE	Digdig/PCC	GEN	A	A
2	Color Scanner	EPSON	GT-7000U	06-Nov-00	¥ 19,800	AE	PVO	GEN	A	A
3	Voltage Regulator	MATSUNAGA	SVC-1000ND	06-Nov-00	¥ 26,000	AE	PVO	GEN	A	A
4	Printer	EPSON	PM820C	06-Nov-00	¥ 47,000	AE	PCC	GEN	A	A
5	PC (Laptop)	FUJITSU	FMV BIBLO	06-Nov-00	¥ 270,500	AE	PCC	GEN	A	A
6	Printer	EPSON	PM3300C	06-Nov-00	¥ 67,800	AE	PCC	GEN	A	Out of Order
7	Digital Camera	OLYMPUS	C-990 Zoom	06-Nov-00	¥ 80,000	AE	NESF	GEN	A	A
8	Color Scanner	EPSON	GT-7000U	06-Nov-00	¥ 27,800	AE	BAI	GEN	A	A
9	Voltage Regulator	MATSUNAGA	SVC-600ND	06-Nov-00	¥ 28,200	AE	BAI	GEN	A	A
10	PC (Desktop)	COMPAQ	Presario 5000	20-Dec-00	P 71,788	GLC	PCC	GEN	A	A
11	File Cabinet		200 LFU03GF	21-Dec-00	P 13,202	GLC	PCC	GEN	A	A
12	File Cabinet		200 LFU03GF	21-Dec-00	P 13,202	GLC	PCC	GEN	A	A
13	File Cabinet		200 LFU03GF	21-Dec-00	P 13,202	GLC	PCC	GEN	A	A
14	Center Table		500 F50CND	21-Dec-00	P 7,865	GLC	PCC	GEN	A	A
15	Punch Binder Machine		Combi ECO-S	21-Dec-00	P 39,500	GLC	PCC	GEN	A	A
16	Computer, Monitor, Software and UPS	COMPAQ	Presario 5BW260 5000 Series	21-Dec-00	P 85,664	GLC	PCC	GEN	A	A
17	PC (Laptop)	FUJITSU	FMV-BIBLO	28-Dec-00	¥ 254,000	AE	PCC	GEN	A	A
18	Printer	EPSON	PM3300C	28-Dec-00	¥ 38,000	AE	PCC	GEN	A	A
19	MO Drive		MOS-U 1300	28-Dec-00	¥ 67,900	AE	PCC	GEN	C	Out of Order
20	Voltage Regulator	MATSUNAGA	SVC-600ND	28-Dec-00	¥ 25,000	AE	PCC	GEN	A	A
21	Heavy Box		Chubb	12-Feb-01	P 18,500	GLC	PCC	GEN	A	Out of Order
22	File Cabinet		200 LFU03GF	21-Mar-01	P 13,202	GLC	PCC	GEN	A	A
23	File Cabinet		200 LFU03GF	21-Mar-01	P 13,202	GLC	PCC	GEN	A	A
24	Locker		4 Cabins	21-Mar-01	P 70,000	GLC	PCC	GEN	A	A
25	Desk		500 F51AXIS	21-Mar-01	P 8,380	GLC	PCC	GEN	A	A
26	PC (Desktop)	APPLE	iMac G3	22-Mar-01	P 105,895	H12	PCC	GEN	A	A
27	Photocopier	SHARP	AR-QE1	22-Mar-01	P 42,100	GLC	PCC	GEN	A	Out of Order
28	Generator	HONDA	2.5KV	23-Mar-01	P 35,000	GLC	PCC	GEN	A	B
29	PC (Desktop)	HP	Vectra VL400DT	23-Mar-01	P 107,780	H12	Digdig/PCC	GEN	A	A
30	PC (Desktop)	HP	Vectra VL400DT	23-Mar-01	P 107,780	H12	NESF	GEN	A	A

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No.	Equipment	Manufacturer	Model	Date-in	Price		Budget	Deployment	Section	Condition	Frequency
31	PC (Laptop)	HP	Omni Book 6000	23-Mar-01	P	190,000	H12	PCC	GEN	A	A
32	Printer	HP	DeskJet 930C	23-Mar-01	P	9,500	H12	Digdig/PCC	GEN	A	A
33	Printer	HP	DeskJet 930C	23-Mar-01	P	9,500	H12	NESF	GEN	B	Out of Order
34	Printer	HP	DeskJet 930C	23-Mar-01	P	9,500	H12	PCC	GEN	A	A
35	Printer	HP	LaserJet 4050	23-Mar-01	P	51,650	H12	PCC	GEN	B	A
36	Pickup	TOYOTA	HIILUX 4WD	23-Mar-01	P	1,189,790	H12	NESF	GEN	A	A
37	Liquid Nitrogen Tank		XC33/22	28-Mar-01	P	62,829	H12	Digdig/PCC	AI	A	A
38	Liquid Nitrogen Tank		XC33/22	28-Mar-01	P	62,829	H12	Digdig/PCC	AI	A	A
39	Liquid Nitrogen Tank		XC33/22	28-Mar-01	P	62,829	H12	Digdig/PCC	AI	A	A
40	Liquid Nitrogen Tank		XC33/22	28-Mar-01	P	62,829	H12	Digdig/PCC	AI	A	A
41	Liquid Nitrogen Tank		XC33/22	28-Mar-01	P	62,829	H12	Digdig/PCC	AI	A	A
42	Liquid Nitrogen Tank		XC33/22	28-Mar-01	P	62,829	H12	Digdig/PCC	AI	A	A
43	Liquid Nitrogen Tank		XC33/22	28-Mar-01	P	62,829	H12	Digdig/PCC	AI	A	A
44	Liquid Nitrogen Tank		XC33/22	28-Mar-01	P	62,829	H12	Digdig/PCC	AI	A	A
45	Liquid Nitrogen Tank		XC33/22	28-Mar-01	P	62,829	H12	NESF	AI	A	A
46	Liquid Nitrogen Tank		XC33/22	28-Mar-01	P	62,829	H12	NESF	AI	A	A
			Sub-total of JFY 2000/H12 (Oct. 2000 - Mar. 2001)		P	2,854,492.00					
					¥	1,240,000					

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No.	Equipment	Manufacturer	Model	Date-in	Price	Budget	Deployment	Section	Condition	Frequency
47	PC (Laptop)	FUJITSU	FMV-BIBLO	02-Apr-01	¥ 233,000	AE	PCC	GEN	A	A
48	Printer	EPSON	PM880C	02-Apr-01	¥ 46,500	AE	PCC	GEN	C	Out of Order
49	Voltage Regulator	MATSUNAGA	SVC-600ND	02-Apr-01	¥ 29,000	AE	PCC	GEN	A	A
50	Portable Radio	MOTOROLA	GP68	09-Apr-01	P 19,000	SM	NESF (Hilux)	GEN	A	A
51	Portable Radio	MOTOROLA	GP68	09-Apr-01	P 19,000	SM	Digdig/PCC (Hilux)	GEN	A	A
52	Portable Radio	MOTOROLA	GP68	09-Apr-01	P 19,000	SM	PCC (Hilux)	GEN	A	A
53	Portable Radio	MOTOROLA	GP68	09-Apr-01	P 19,000	SM	PCC	GEN	A	A
54	Portable Radio	MOTOROLA	GP68	09-Apr-01	P 19,000	SM	NESF	GEN	A	A
55	Portable Radio	MOTOROLA	GP68	09-Apr-01	P 19,000	SM	L-300 Truck	GEN	A	A
56	Portable Radio	MOTOROLA	GP68	09-Apr-01	P 19,000	SM	PCC	GEN	A	A
57	Base Radio	MOTOROLA	Radius GM300	09-Apr-01	P 36,500	SM	PCC	GEN	A	A
58	Base Radio	MOTOROLA	Radius GM300	09-Apr-01	P 36,500	SM	NESF	GEN	A	A
59	Base Radio	MOTOROLA	Radius GM300	09-Apr-01	P 36,500	SM	PCC (Prado)	GEN	A	A
60	Photocopier	SHARP	AR336 ADF	16-Apr-01	P 462,000	AE	PCC	GEN	A	A
61	Pickup	TOYOTA	HIILUX 4WD	19-Apr-01	P 1,188,000	H12	Digdig/PCC	GEN	A	A
62	Pickup	TOYOTA	HIILUX 4WD	19-Apr-01	P 1,188,000	H12	NESF	GEN	A	A
63	Artificial Vagina	NASCO	C06180N	24-Apr-01	P 68,900	H12	Digdig/PCC	AI	A	A
64	Amplifier	YAMAHA		25-Apr-01	P 24,990	H12	Digdig/PCC	GEN	A	A
65	Speaker		Celestion	25-Apr-01	P 18,990	H12	Digdig/PCC	GEN	A	A
66	Microphone	SENNHEISER	Wireless	25-Apr-01	P 33,990	H12	Digdig/PCC	GEN	A	A
67	Weighing Scale Portable		Workhorse (2t)	05-May-01	P 396,439	H12	PCC	FM	A	A
68	Weighing Scale Portable		Workhorse (2t)	05-May-01	P 396,439	H12	NESF	FM	A	A
69	Distilling Apparatus		GP3 52857-889	18-May-01	P 75,591	H12	Digdig/PCC	AI	A	A
70	Weighing Scale Station	RUDD	Weight 2000FL	01-Jun-01	P 56,018	H12	NESF	FM	A	A
71	Weighing Scale Station	RUDD	Weight 2000FL	01-Jun-01	P 56,018	H12	PCC	FM	A	A
72	Microscope		XSP-13A	19-Jun-01	P 12,604	GLC	PCC	FM	A	A
73	Organ Washer	FUJIHIRA KOGYO (FHK)	FA4	22-Jun-01	P 900,000	H12	Digdig/PCC	AI	A	A
74	LCD Projector	PLUS	U2-1130XGA	22-Jun-01	P 352,000	H12	PCC	GEN	A	A
75	OHP	PLUS	CX-500	22-Jun-01	P 80,000	H12	PCC	GEN	A	A
76	TV	SONY	Wega 29	22-Jun-01	P 53,760	H12	PCC	GEN	A	A

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No.	Equipment	Manufacturer	Model	Date-in	Price		Budget	Deployment	Section	Condition	Frequency
77	Video Deck	SONY	Hi-Fi GF85	22-Jun-01	P	8,399	H12	PCC	GEN	A	B
78	Wagon	TOYOTA	Prado	25-Jun-01	P	2,475,020	H12	PCC	GEN	A	A
79	Generator	HONDA	EM1000F	26-Jun-01	P	28,500	GLC	NESF	GEN	A	B
80	Washing Machine		NA-W60R2	26-Jun-01	P	9,500	GLC	PCC	GEN	A	A
81	OHP Screen		DA-LITE	29-Jun-01	P	30,000	GLC	PCC	GEN	A	B
82	Tire Cover		For Prado	02-Jul-01	P	18,673	GLC	PCC (Prado)	GEN	A	A
83	Printer	EPSON	680C	20-Aug-01	P	6,488	GLC	NESF	GEN	A	Out of Order
84	Shnoker		For Hilux	29-Aug-01	P	18,000	GLC	Digdig/PCC	AI	A	A
85	Shnoker		For Hilux	29-Aug-01	P	18,000	GLC	NESF	AI	A	A
86	Bus	MITSUBISHI	FE635	30-Oct-01	P	1,850,000	H12	PCC	GEN	B	A
87	Generator	HONDA	2.9 KV	26-Nov-01	P	25,500	GLC	NESF	GEN	A	A
88	Digital Camera	KODAK	DC 4800	04-Jan-02	P	38,888	GLC	PCC	GEN	A	A
89	Scanner	EPSON	1650	10-Jan-02	P	11,995	GLC	PCC	GEN	A	Out of Order
90	Portable Radio	MOTOROLA	GP88	17-Jan-02	P	16,700	GLC	NESF	GEN	A	A
91	Portable Radio	MOTOROLA	GP88	17-Jan-02	P	16,700	GLC	PCC (Bus)	GEN	A	A
92	Portable Radio	MOTOROLA	GP88	17-Jan-02	P	16,700	GLC	L-300 Truck	GEN	A	A
93	Submersible Water Pump	JACUZZI	Well Pump	24-Jan-02	P	38,000	GLC	Digdig/PCC	AI	A	A
94	Pump Motor	FRANKIN	5HP	24-Jan-02	P	49,000	GLC	Digdig/PCC	AI	A	A
95	Photocopier	RICOH	FT3320	25-Jan-02	P	16,000	GLC	NESF	GEN	C	Out of Order
96	Photocopier	RICOH	FT3320	25-Jan-02	P	16,000	GLC	PVO	GEN	C	Out of Order
97	Photocopier	RICOH	FT3320	05-Feb-02	P	16,000	GLC	Digdig/PCC	GEN	A	Out of Order
98	Temperature Recorder		NFA34 (FA1735)	10-Feb-02	¥	320,000	AE	PCC	AI	A	A
99	Truck	MITSUBISHI	L-300 Cab FB	01-Mar-02	P	550,000	H14	PCC	GEN	A	A
100	PC Software	FILE MAKER	File Maker Pro 6.5	05-Mar-02	¥	39,000	AE	PCC	GEN	A	A
101	Vagina Speculum		NFA161	05-Mar-02	¥	44,000	AE	PCC	AI	A	A
102	Vagina Speculum		NFA161	05-Mar-02	¥	44,000	AE	PCC	AI	A	A
103	Cervical Forceps	UTERO	NFB10	05-Mar-02	¥	38,800	AE	PCC	AI	A	A
104	Surgical Instrument Set		NFCS	05-Mar-02	¥	47,000	AE	PCC	AI	A	A
105	PC (Laptop)	FUJITSU	FMV NE890W	05-Mar-02	¥	280,000	AE	PCC	GEN	A	A
106	Skid Steer Loader	BOBCAT	751 (Bucket & Pallet Fork)	13-Mar-02	P	1,000,000	H14	NESF	FM	A	A

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No.	Equipment	Manufacturer	Model	Date-in	Price		Budget	Deployment	Section	Condition	Frequency
107	PC Set (Printer, Software and UPS)	IBM	Net Vista A40/1160	18-Mar-02	P	104,350	H14	PCC	GEN	A	A
108	PC Set (Printer, Software and UPS)	IBM	Net Vista A40/1160	18-Mar-02	P	104,350	H14	PCC	GEN	A	A
109	PC Set (Printer, Software and UPS)	IBM	Net Vista A40/1160	18-Mar-02	P	104,350	H14	NESF	GEN	A	A
110	PC Set (Printer, Software and UPS)	IBM	Net Vista A40/1160	18-Mar-02	P	104,350	H14	NESF	GEN	A	A
111	PC Set (Printer, Software and UPS)	IBM	Net Vista A40/1160	18-Mar-02	P	104,350	H14	PVO	GEN	A	A
112	Hot Plate Stirrer		Ecotherm HS10-2	20-Mar-02	P	17,800	H13	NESF	AI	A	A
113	Generator 34KVA	PERKINS	34KVA 3Phase	22-Mar-02	P	455,000	LAC	NESF	GEN	A	A
			Sub-total of JFY 2001/H13 (Apr. 2001 - Mar. 2002)		P	12,874,852.00					
					¥	1,121,300					

EQUIPMENT LEDGER PROVIDED BY JAPAN SIDE

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No.	Equipment	Manufacturer	Model	Date-in	Price	Budget	Deployment	Section	Condition	Frequency
114	Generator 50KVA	PERKINS	50KVA	05-Apr-02	P 515,000	H13	Digdig/PCC	GEN	A	A
115	LN2 Field Tank		MVE SC 3/3	10-Apr-02	P 32,000	H13	Digdig/PCC	AI	A	A
116	LN2 Field Tank		MVE SC 3/3	10-Apr-02	P 32,000	H13	Digdig/PCC	AI	A	A
117	LN2 Field Tank		MVE SC 3/3	10-Apr-02	P 32,000	H13	Digdig/PCC	AI	A	A
118	LN2 Field Tank		MVE SC 3/3	10-Apr-02	P 32,000	H13	Digdig/PCC	AI	A	A
119	LN2 Field Tank		MVE SC 3/3	10-Apr-02	P 32,000	H13	Digdig/PCC	AI	A	A
120	LN2 Field Tank		MVE SC 3/3	10-Apr-02	P 32,000	H13	Digdig/PCC	AI	A	A
121	LN2 Field Tank		MVE SC 3/3	10-Apr-02	P 32,000	H13	NESF	AI	A	A
122	LN2 Field Tank		MVE SC 3/3	10-Apr-02	P 32,000	H13	NESF	AI	A	A
123	LN2 Field Tank		MVE SC 3/3	10-Apr-02	P 32,000	H13	NESF	AI	A	A
124	LN2 Field Tank		MVE SC 3/3	10-Apr-02	P 32,000	H13	Digdig/PCC	AI	A	A
125	Liquid Nitrogen Tank		MVE XC33/22	10-Apr-02	P 54,000	H13	Digdig/PCC	AI	A	A
126	Liquid Nitrogen Tank		MVE XC33/22	10-Apr-02	P 54,000	H13	Digdig/PCC	AI	A	A
127	Liquid Nitrogen Tank		MVE XC33/22	10-Apr-02	P 54,000	H13	Digdig/PCC	AI	A	A
128	Liquid Nitrogen Tank		MVE XC33/22	10-Apr-02	P 54,000	H13	Digdig/PCC	AI	A	A
129	Liquid Nitrogen Tank		MVE XC33/22	10-Apr-02	P 54,000	H13	Digdig/PCC	AI	A	A
130	Liquid Nitrogen Tank		MVE XC33/22	10-Apr-02	P 54,000	H13	Digdig/PCC	AI	A	A
131	Liquid Nitrogen Tank		MVE XC33/22	10-Apr-02	P 54,000	H13	Digdig/PCC	AI	A	A
132	Liquid Nitrogen Tank		MVE XC33/22	10-Apr-02	P 54,000	H13	Digdig/PCC	AI	A	A
133	Liquid Nitrogen Tank		MVE XC33/22	10-Apr-02	P 54,000	H13	Digdig/PCC	AI	A	A
134	Liquid Nitrogen Tank		MVE XC33/22	10-Apr-02	P 54,000	H13	Digdig/PCC	AI	A	A
135	Liquid Nitrogen Tank		MVE XC33/22	10-Apr-02	P 54,000	H13	NESF	AI	A	A
136	Liquid Nitrogen Tank		MVE XC33/22	10-Apr-02	P 54,000	H13	NESF	AI	A	A
137	Liquid Nitrogen Tank		MVE XC33/22	10-Apr-02	P 54,000	H13	NESF	AI	A	A
138	Liquid Nitrogen Tank		MVE XC33/22	10-Apr-02	P 54,000	H13	NESF	AI	A	A
139	Liquid Nitrogen Tank		MVE XC33/22	10-Apr-02	P 54,000	H13	NESF	AI	A	A
140	Liquid Nitrogen Tank		MVE XC33/22	10-Apr-02	P 54,000	H13	NESF	AI	A	A
141	Liquid Nitrogen Tank		MVE XC33/22	10-Apr-02	P 54,000	H13	NESF	AI	A	A
142	Liquid Nitrogen Tank		MVE XC33/22	10-Apr-02	P 54,000	H13	NESF	AI	A	A
143	Liquid Nitrogen Tank		MVE XC33/22	10-Apr-02	P 54,000	H13	NESF	AI	A	A

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No.	Equipment	Manufacturer	Model	Date-in	Price	Budget	Deployment	Section	Condition	Frequency
144	Liquid Nitrogen Tank		MVE XC33/22	10-Apr-02	P 54,000	H13	NESF	AI	A	A
145	LN2 Storage Tank		MVE-MDX 119L	10-Apr-02	P 1,060,000	H14	PCC	AI	A	A
146	Artificial Vagina Inner Liner (5 pcs)		C06154N	23-Apr-02	P 4,065	H13	NESF	AI	Supplies	-
147	AV Rough Surface Liner (15 pcs)		C06179N	23-Apr-02	P 7,337	H13	NESF	AI	Supplies	-
148	AV Collection Funnel (15 pcs)		C08157N	23-Apr-02	P 8,371	H13	NESF	AI	Supplies	-
149	Pro-Grip Applicator (4 pcs)		C17245N	23-Apr-02	P 4,492	H13	PCC/NESF	AI	A	A
150	Semen Straw Cutter (20 pcs)		C03340N	23-Apr-02	P 6,260	H13	PVO	AI	Supplies	-
151	Water Distilling Barnstead		D7382-33	23-Apr-02	P 199,000	H14	PCC	AI	A	A
152	Hemacyto Meter		IMV USA090 Neubauer	08-May-02	P 11,000	H13	Digdig/PCC	AI	A	A
153	Hemacyto Meter		IMV USA090 Neubauer	08-May-02	P 11,000	H13	NESF	AI	A	A
154	Analytical Balance		IMV USA057	08-May-02	P 37,800	H13	PCC	AI	A	A
155	Analytical Balance		OHAUS CS-5000	08-May-02	P 46,800	H13	PCC	AI	A	A
156	Microscope Stage Slide Warmer		IMV USA056	08-May-02	P 43,200	H13	PCC	AI	A	A
157	Microscope Stage Slide Warmer		IMV USA056	08-May-02	P 43,200	H13	Digdig/PCC	AI	A	A
158	Microscope Stage Slide Warmer		IMV USA056	08-May-02	P 43,200	H13	NESF	AI	A	A
159	Automatic Straw Printing Machine		MIA	08-May-02	P 598,000	H13	Digdig/PCC	AI	A	A
160	Boreal Digital/Analog Microscope		B30003-00	08-May-02	P 153,450	H13	Digdig/PCC	AI	A	A
161	Boreal Digital/Analog Microscope		B30003-00	08-May-02	P 153,450	H13	NESF	AI	A	A
162	Babcock Centrifuge		IEC HN-SII	08-May-02	P 259,798	H13	PCC	AI	A	A
163	Analytical Mill Grinder		Tekmar 3388E26	09-May-02	P 60,546	H14	PCC	FM	A	A
164	Cyclone Sample Mill Grinder		UDY CORP3383N80	09-May-02	P 194,663	H14	PCC	FM	A	A
165	Bench-top Muffle Furnace		Neytech Vulcan 5329A04/A-130	09-May-02	P 52,867	H14	PCC	FM	A	A
166	Laboratory Oven		Labline 7188A10	09-May-02	P 41,552	H14	PCC	FM	A	A
167	Laboratory Oven		Labline 7188A10	09-May-02	P 41,552	H14	PCC	FM	A	A
168	Water Bath		Memmert WB-77	14-May-02	P 17,800	H13	NESF	FM	A	A
169	Cooling Chamber		Hotpack Incubator	15-May-02	P 216,220	H13	NESF	FM	A	A
170	Kjeldahl System		Velp Scientifica	22-May-02	P 745,255	H13	PCC	FM	A	A
171	Kjeldahl System		Velp Scientifica	22-May-02	P 745,255	H13	PCC	FM	A	A
172	Fat Extractor		Velp Scientifica	22-May-02	P 653,317	H13	PCC	FM	A	A
173	Fiber Extractor		Velp Scientifica	22-May-02	P 447,381	H13	PCC	FM	A	A

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No.	Equipment	Manufacturer	Model	Date-in		Price	Budget	Deployment	Section	Condition	Frequency
174	Milk Scan		Foss S54B P/N392800	29-May-02	P	3,711,192	H14	PCC	FM	A	A
175	Manure Spreader		H & S 175	31-May-02	P	675,000	H14	NESF	FM	A	A
176	Drying Oven		Scientific 276	06-Jun-02	P	110,055	H14	PCC	FM	A	A
177	Autoclave Steam Sterilizer		Cat S50395	19-Jun-02	P	78,838	H13	NESF	FM	A	A
178	Drying Oven		ED53	19-Jun-02	P	45,360	H13	NESF	FM	A	A
179	Draft Chamber		ESCO EQU-0A-4EDFC	25-Jun-02	P	281,873	H14	PCC	AI	A	A
180	Freezer Upright		Jencons PLS FS345G	25-Jun-02	P	99,675	H14	PCC	AI	A	A
181	Artificial Vagina Sterilizer	FUJIHIRA KOGYO (FHK)	74-16301	17-Jul-02	P	133,070	H14	NESF	AI	A	A
182	Semen Straw Sterilizer	FUJIHIRA KOGYO (FHK)	FA340	17-Jul-02	P	231,770	H14	NESF	AI	A	A
183	Gas Sterilizer	FUJIHIRA KOGYO (FHK)	FL172	17-Jul-02	P	492,800	H14	Digdig/PCC	AI	A	A
184	Slide for Motility Evaluation (3 pcs)	FUJIHIRA KOGYO (FHK)	FA225	02-Aug-02	P	18,024	H14	Digdig/PCC	AI	A	A
185	Slide for Motility Evaluation (4 pcs)	FUJIHIRA KOGYO (FHK)	FA225	02-Aug-02	P	12,016	H14	NESF	AI	A	A
186	Slide for Motility Evaluation (5 pcs)	FUJIHIRA KOGYO (FHK)	FA225	02-Aug-02	P	6,008	H14	PCC	AI	A	A
187	Vagina Speculum (20 pcs)			02-Aug-02	P	6,000	H14	PCC/NESF	AI	A	A
188	Freezing Chamber	FUJIHIRA KOGYO (FHK)	FA1652	10-Oct-02	P	535,000	H13	NESF	AI	A	A
189	OHP		3M M2090	21-Nov-02	¥	158,000	AE	PCC	GEN	A	A
190	Spectrophotometer		AE-450	20-Dec-02	¥	343,000	AE	Digdig/PCC	AI	A	A
			Sub-total of JFY 2002/H14 (Apr. 2002 - Mar. 2003)		P	14,258,512.00					
					¥	501,000					

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191	Forage Harvester	JOHN DEERE	972 Flail Chopper	17-Jun-03	P	808,780	H15	NESF	FM	A	A
192	Hay Baler	STAR	THB2031 Trailed Hay Baler	25-Jun-03	P	950,005	H15	NESF	FM	A	A
193	Disk Mower	STAR	MDM 2450	25-Jun-03	P	701,550	H15	NESF	FM	A	A
194	Hay Tedder	STAR	MGH 310	25-Jun-03	P	467,025	H15	NESF	FM	A	A
195	Cooling Chamber	FUJIHIRA KOGYO (FHK)	FA102	10-Jul-03	P	2,975,000	H15	Digdig/PCC	AI	A	A
196	Computer		NTC KM-777-1	11-Jul-03	P	41,000	GLC	PCC	GEN	A	A
197	Air-conditioner	CARRIE	APXRM-195BA	17-Jul-03	P	20,000	GLC	NESF	GEN	A	A
198	Back Hoe Loader	CATERPILLAR	Caterpillar 416D	26-Aug-03	P	3,766,000	H15	NESF	FM	A	A
199	Tractor	KUBOTA	M8200DT	27-Aug-03	P	1,461,500	H15	NESF	FM	A	A
200	Submersible Water Pump		Ground Submersible Pump	17-Sep-03	P	134,200	JICA Office	NESF	GEN	A	A
201	Air-conditioner	CARRIE	APXRM-195BA	19-Sep-03	P	20,000	JICA Office	NESF	GEN	A	A
202	Balling Gun for Bovine	FUJIHIRA KOGYO (FHK)	F14	23-Sep-03	¥	28,320	AE	PCC	FM	A	B
203	Balling Gun for Bovine	FUJIHIRA KOGYO (FHK)	F14	23-Sep-03	¥	28,320	AE	PCC	FM	A	B
204	Tipper Tie White Poly Tape	FUJIHIRA KOGYO (FHK)	C16074N	06-Oct-03	¥	25,800	AE	NESF	FM	A	A
205	Tipper Tie White Poly Tape	FUJIHIRA KOGYO (FHK)	C16074N	06-Oct-03	¥	25,800	AE	NESF	FM	A	A
206	Field Solar Pack	FUJIHIRA KOGYO (FHK)	C14757N	06-Oct-03	¥	77,700	AE	NESF	FM	A	A
207	Field Solar Pack	FUJIHIRA KOGYO (FHK)	C14757N	06-Oct-03	¥	77,700	AE	NESF	FM	A	A
208	Manual Alphabetor Printing System	IMV	CO11	20-Oct-03	P	79,950	AE	Digdig/PCC	AI	A	A
209	Rotary Tiller	CELLI	E180/CL	28-Nov-03	P	256,000	H15	NESF	FM	A	A
210	Water Purifier Barnstead			01-Dec-03	P	22,515	H15	Digdig/PCC	AI	A	A
211	Ultra Sound Scanner	VETCO		03-Dec-03	P	645,000	H15	PCC	AI	A	A
212	Forage Harvester	JOHN DEERE	JD972	07-Dec-03	P	820,780	H15	PCC	FM	A	A
213	Irrigation System for Pasture Land	KUBOTA	Pump: DS033220 38 GPM/Engine: RK125	17-Dec-03	P	210,500	H15	NESF	FM	A	A
214	Laboratory Mill	PERTEN INSTRUMENTS	3303	19-Dec-03	P	294,525	H15	PCC	FM	A	A
215	Water Bath Shaker	MRC	BT-350	19-Dec-03	P	162,000	H15	PCC	FM	A	A
216	Liquid Nitrogen Tank	MVE	SC33/26	06-Jan-04	P	54,355	H15	Digdig/PCC	AI	A	A
217	Liquid Nitrogen Tank	MVE	SC33/26	06-Jan-04	P	54,355	H15	Digdig/PCC	AI	A	A
218	Liquid Nitrogen Tank	MVE	SC33/26	06-Jan-04	P	54,355	H15	Digdig/PCC	AI	A	A
219	Liquid Nitrogen Tank	MVE	SC33/26	06-Jan-04	P	54,355	H15	Digdig/PCC	AI	A	A
220	Liquid Nitrogen Tank	MVE	SC33/26	06-Jan-04	P	54,355	H15	Digdig/PCC	AI	A	A

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221	Artificial Vagina, Smooth (30 pcs)	IMV	#098	06-Jan-04	P	29,820	H15	Digdig/PCC	AI	A	A
222	Artificial Vagina, Rough (30 pcs)	IMV	#093	06-Jan-04	P	31,350	H15	Digdig/PCC	AI	A	A
223	Elevation Apparatus	FUJIHIRA KOGYO (FHK)	NFA33	14-Jan-04	P	243,500	H15	Digdig/PCC	AI	A	A
224	Meeting Table		Table with 6 Seats	25-Feb-04	P	12,500	GLC	PCC	FM	A	A
225	Motorbike	HONDA	XRM110	26-Feb-04	P	49,800	H15	PCC	FM	A	A
226	Motorbike	HONDA	XRM110	26-Feb-04	P	49,800	H15	PVO	FM	A	A
227	Motorbike	HONDA	XRM110	26-Feb-04	P	49,800	H15	NESF	FM	A	A
228	Motorbike	HONDA	XRM110	26-Feb-04	P	49,800	H15	NESF	FM	A	A
229	Front-end Loader Attachment	WOODS	1027	02-Mar-04	P	825,000	H15	NESF	FM	A	A
230	Slotted Shelves (3 Units)	VICTOR	5 Levels	04-Mar-04	P	14,520	GLC	PCC	GEN	A	A
231	Slotted Shelves (2 Units)	VICTOR	5 Levels	04-Mar-04	P	9,680	GLC	NESF	GEN	A	A
232	Pressure Water	COMMANDO	RD3003	10-Mar-04	P	5,575	H15	PCC	GEN	A	A
233	Pressure Water	COMMANDO	RD3003	10-Mar-04	P	5,575	H15	Digdig/PCC	GEN	A	A
234	Pressure Water	COMMANDO	RD3003	10-Mar-04	P	5,575	H15	NESF	GEN	A	A
235	Safety Box	SENTRY	S5381	10-Mar-04	P	27,850	GLC	PCC	GEN	A	A
236	Mixer	KATO	Engine: KAMA 178F	18-Mar-04	P	32,000	H15	PCC	FM	A	A
237	UPS (4 Units)	APC	CS500VA	23-Mar-04	P	17,596	LAC	PCC	GEN	A	A
238	Voltage Regulator (2 Units)	GIANT	1000VA UPS w/AVR	23-Mar-04	P	7,998	LAC	NESF	GEN	A	A
239	Computer (Server)	VPC	Virtus XVPC-PCDL24	26-Mar-04	P	59,900	LAC	PCC	GEN	A	A
			Sub-total of JFY 2003/H15 (Apr. 2003 - Mar. 2004)		P	15,635,743.75					
					¥	263,640					

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240	Trailer	R.G. CASTRO	Order-made	01-Apr-04	P	85,000	H15	PCC	FM	A	A
241	LN2 Container for Transport and Storage	FUJIHIRA KOGYO (FHK)	FA2000/NFA302/DR10N	14-Apr-04	P	100,000	H15	Digdig/PCC	AI	A	A
242	LN2 Refrigerator for Storage and Shipping	FUJIHIRA KOGYO (FHK)	FA1995/NFA301/DR3.6L	14-Apr-04	P	85,000	H15	Digdig/PCC	AI	A	A
243	LN2 Refrigerator for Storage and Shipping	FUJIHIRA KOGYO (FHK)	FA1995/NFA301/DR3.6L	14-Apr-04	P	85,000	H15	Digdig/PCC	AI	A	A
244	LN2 Refrigerator for Storage and Shipping	FUJIHIRA KOGYO (FHK)	FA1995/NFA301/DR3.6L	14-Apr-04	P	85,000	H15	Digdig/PCC	AI	A	A
245	LN2 Refrigerator for Storage and Shipping	FUJIHIRA KOGYO (FHK)	FA1995/NFA301/DR3.6L	14-Apr-04	P	85,000	H15	Digdig/PCC	AI	A	A
246	LN2 Refrigerator for Storage and Shipping	FUJIHIRA KOGYO (FHK)	FA1995/NFA301/DR3.6L	14-Apr-04	P	85,000	H15	Digdig/PCC	AI	A	A
247	Temperature Recorder	FUJIHIRA KOGYO (FHK)	NFA35/FA1736/EH100, 1 Pen	14-Apr-04	P	232,000	H15	NESF	AI	A	A
248	AI Gun (10 pcs)	FUJIHIRA KOGYO (FHK)	FA651/NFA140, 0.5cc	14-Apr-04	P	159,000	H15	Digdig/PCC	AI	A	A
249	Forage Chopper	AGRI COMPONENT CORI	8HP Gasoline Engine	16-Apr-04	P	62,944	H15	PCC	FM	A	A
250	Forage Chopper	AGRI COMPONENT CORI	8HP Gasoline Engine	16-Apr-04	P	62,944	H15	NESF	FM	A	A
251	Forage Chopper	AGRI COMPONENT CORI	8HP Gasoline Engine	16-Apr-04	P	62,944	H15	Model Farm	FM	A	A
252	USB 2.0 Portable Hard Drive	IOMEGA	HDD 20GB	21-Apr-04	P	9,999	LAC	PCC	SDS	A	A
253	USB 2.0 Portable Hard Drive	IOMEGA	HDD 20GB	21-Apr-04	P	9,999	LAC	NESF	SDS	A	A
254	USB Mobile Disk II (2 Units)	TWINMOS	128MB	29-Apr-04	P	5,376	LAC	PCC	GEN	A	A
255	USB Mobile Disk II (2 Units)	TWINMOS	128MB	29-Apr-04	P	5,376	LAC	NESF	GEN	A	A
256	IMV Rubber Sheet for Straw Printer	IMV	Numbers	21-Apr-04	P	12,000	GLC	Digdig/PCC	AI	A	A
257	Airtight Silo Mini	CHUGOKU INDUSTRY CO	ASS-5B	06-May-04	¥	569,940	AE	PCC	FM	A	A
258	Goblet (300 pcs)	IMV	65 mm	17-Jun-04	P	18,600	H15	Digdig/PCC	AI	A	A
259	Grass Cutter	KAWASAKI	TD40	05-Jul-04	P	12,500	GLC	PCC	FM	A	A
260	Grass Cutter	KAWASAKI	TD40	05-Jul-04	P	12,500	GLC	PCC	FM	A	A
261	Grass Cutter	KAWASAKI	TD40	05-Jul-04	P	12,500	GLC	PCC	FM	A	A
262	Grass Cutter	KAWASAKI	TD40	05-Jul-04	P	12,500	GLC	PCC	FM	A	A
263	Grass Cutter	KAWASAKI	TD40	05-Jul-04	P	12,500	GLC	PCC	FM	A	A
264	Forage Elevator Wagon	STAR	TFE1860	24-Aug-04	P	1,885,520	H15	NESF	FM	A	A
265	Chisel Plow	TAKAKITA	CP767	24-Aug-04	P	747,700	H15	NESF	FM	A	A
266	A3 Paper Inkjet Printer	CANON	i6500	09-Aug-04	P	18,500	AE	PCC	PC	A	A
267	Field Solar Pack	NASCO	C14575N	15-Sep-04	¥	79,100	AE	NESF	FM	A	A
268	Cow Lifter	NASCO	Z09820N	15-Sep-04	¥	141,550	AE	PCC	FM	A	A
269	Laser Printer	HEWLETT-PACKARD	Laserjet 1150	16-Sep-04	P	20,800	AE	PVO	PC	A	A

EQUIPMENT LEDGER PROVIDED BY JAPAN SIDE

AE: Accompany Equipment GLC: General Local Cost LAC: Local Application Cost SM: Security Measure ▽
Provided Equipment (H12: Year 2000 H13: Year 2001 H14: Year 2002 H15: Year 2003 H16: Year 2004 H17: 2005) ▽
PCC: Philippine Carabao Center NESF: Nueva Ecija Stock Farm Digdig: Digdig Farm/PCC PVO: Provincial Veterinarian Office ▽
SDS: Sire and Dam Selection FM: Feeding and Management AI: Artificial Insemination GEN: General Affairs ▽
A: Good B: Moderate C: Bad ▽
A: Frequently B: Sometimes C: Occasionally ▽

No.	Equipment	Manufacturer	Model	Date-in		Price	Budget	Deployment	Section	Condition	Frequency
270	Rubber Sheet for Straw Printer	IMV	Alphabets	11-Oct-04	P	12,804	GLC	Digdig/PCC	AI	A	A
271	AI Tester	FUJIHIRA KOGYO (FHK)	FA1012	02-Oct-04	¥	165,800	AE	PCC	AI	A	A
272	Prepuce Douche Washer Nozzle	FUJIHIRA KOGYO (FHK)	NFA4-1	23-Nov-04	¥	47,700	AE	NESF	AI	A	A
273	Micropipette (2 pcs)	TOKYO GLASS KIKAI	AU-1000	23-Nov-04	¥	49,000	AE	NESF	AI	A	A
274	Test Tube with Transformer	TOKYO GLASS KIKAI	MS-1	23-Nov-04	¥	43,900	AE	NESF	AI	A	A
275	AI Gun (2 pcs)	FUJIHIRA KOGYO (FHK)	FA651/NFA140, 0.5cc	23-Nov-04	¥	52,200	AE	PVO	AI	A	A
276	4WD Pick-up Vehicle	TOYOTA	Hilux 4WD SR5	07-Jan-05	P	1,260,000	H16	PVO	AI	A	A
277	Rear Canopy	CAMPERSHELLS		07-Jan-05	P	39,000	H16	PVO	AI	A	A
278	Desktop Computer	Intel Pentium 4-3.0GHz, Asus Board, 7200 RPM-80GB HDD		07-Jan-05	P	69,500	H16	PCC	SDS	A	A
279	Laptop Computer	TOSHIBA	Satellite A60-S535	07-Jan-05	P	115,700	H16	PCC	SDS	A	A
280	Mixer	FAIRES	Horizontal Compulsory, Model 11	17-Jan-05	P	390,000	H16	PCC	FM	A	A
281	Hammer Mill	FAIRES	Model 1100	17-Jan-05	P	195,000	H16	PCC	FM	A	A
282	Front-end-Loader	KUBOTA	WOODS Model 1027	09-Feb-05	P	644,354	H16	PCC	FM	A	A
			Sub-total of JFY 2004/H16 (Apr. 2004 - Mar. 2005)		P	6,712,560.00					
					¥	1,149,190					

EQUIPMENT LEDGER PROVIDED BY JAPAN SIDE

AE: Accompany Equipment GLC: General Local Cost LAC: Local Application Cost SM: Security Measure ▽
Provided Equipment (H12: Year 2000 H13: Year 2001 H14: Year 2002 H15: Year 2003 H16: Year 2004 H17: 2005) ▽
PCC: Philippine Carabao Center NESF: Nueva Ecija Stock Farm Digdig: Digdig Farm/PCC PVO: Provincial Veterinarian Office ▽
SDS: Sire and Dam Selection FM: Feeding and Management AI: Artificial Insemination GEN: General Affairs ▽
A: Good B: Moderate C: Bad ▽
A: Frequently B: Sometimes C: Occasionally ▽

No.	Equipment	Manufacturer	Model	Date-in	Price	Budget	Deployment	Section	Condition	Frequency
283	Chest Freezer	GE	FHV5SD	27-Apr-05	P 14,300	GLC	NESF	AI	A	A
284	Tires for Skid Steer Loader (4 pcs)		16.5 x 10	19-May-05	P 24,000	GLC	NESF	FM	Supplies	
285	High Temperature Sterilizer	ADVANTEC TOYO	STA620DA	27-May-05	¥ 180,500	H16	Digdig/PCC	AI	A	A
286	Quick LNG Freezer	FUJIHIRA KOGYO (FHK)	NFA33	27-May-05	¥ 936,000	H16	Digdig/PCC	AI	A	A
287	Ultraviolet Rays Sterilizer for Straw	FUJIHIRA KOGYO (FHK)	NFA80	27-May-05	¥ 394,000	H16	Digdig/PCC	AI	A	A
288	Microscope	TOKYO GLASS KIKAI	CBMB-6	27-May-05	¥ 130,000	H16	NESF	AI	A	A
289	Artificial Vagina Warmer	FUJIHIRA KOGYO (FHK)	NFA5	27-May-05	¥ 777,000	H16	NESF	AI	A	A
290	Utensil Dryer	ADVANTEC TOYO	DRU600TB	27-May-05	¥ 310,000	H16	NESF	AI	A	A
291	Eazi Breed	PHIZER	Cider 1900	27-May-05	¥ 716,000	H16	PCC	AI	A	A
292	Engine Oil/Fuel/Hyd./Inner and Outer Air Filt	BOBCAT	3/4/2/2/2 pcs.	27-Jun-05	P 23,610	H17	NESF	FM	Supplies	
293	Filters for Skid Steer Loader	MONARK		13-Jul-05	P 37,711	GLC	NESF	FM	Supplies	
294	Clutch Assy.	KUBOTA	PN35592-25102 for M8030DT	22-Jul-05	P 119,000	H17	NESF	FM	A	A
295	Blades for Harvester (24 pcs)	JOHN DEERE	E13034 for JD972/2400	26-Jul-05	P 45,280	H17	NESF	FM	A	A
296	Combination Tool Set (23 items)			26-Jul-05	P 75,000	H17	NESF	FM	A	A
297	Laptop Computer	IBM	Thinkpad R50E (1834FPA)	26-Jul-05	P 105,000	H17	NESF	SDS	A	A
298	Laser Printer	HEWLETT-PACKARD	HP1160	26-Jul-05	P 23,500	H17	NESF	SDS	A	A
299	Rear Tires for Tractors (4 pcs)	ALLIANCE	18.4-30 10PR for M8200/8030DT	26-Jul-05	P 100,000	H17	NESF	FM	Supplies	
300	Irrigation System for Pasture Land	YANMAR		28-Jul-05	P 27,000	GLC	PCC	FM	A	A
301	Microscope	MOTIC	B11-220ASC	03-Aug-05	P 64,900	H17	PVO	AI	A	A
302	Slide Warmer	FUJIHIRA KOGYO (FHK)	NFA60 (FA220)	03-Aug-05	P 36,850	H17	PVO	AI	A	A
303	LN2 Field Tank (3 units)	MVE	SC 3/3 (3.6L)	03-Aug-05	P 126,000	H17	PVO	AI	A	A
304	LN2 Field Tank (7 units)	MVE	SC 3/3 (3.6L)	03-Aug-05	P 294,000	H17	Digdig/PCC	AI	A	A
305	Vaginal Prolapse Preventer (3 units)	FHK	FC-298	01-Aug-05	¥ 50,100	AE	PCC	FM	A	A
306	Navel Clip (6 units)	NASCO	C07005N	01-Aug-05	¥ 13,200	AE	PCC	FM	A	A
307	Water Proof Heater	NASCO	C083307N	01-Aug-05	¥ 15,200	AE	PCC	FM	A	A
308	Food Presentation Bag for Calf (5 units)	NASCO	C07326N	01-Aug-05	¥ 23,500	AE	PCC	FM	A	A
309	Book of Calf Rearing	NASCO	C013108N	01-Aug-05	¥ 8,200	AE	PCC	FM	A	A
310	Book for Herd Health Guide	NASCO	C08319N	01-Aug-05	¥ 1,800	AE	PCC	FM	A	A
311	Sample Vials, Borosilicate Vial	FHK	NF0017	18-Aug-05	¥ 9,200	AE	PCC	FM	Supplies	
312	Inculating Wire Holder	AS-ONE	6-490-04	18-Aug-05	¥ 4,760	AE	PCC	FM	Supplies	
313	Inculating Wire Loop	AS-ONE	6-8690-01	18-Aug-05	¥ 25,680	AE	PCC	FM	Supplies	

EQUIPMENT LEDGER PROVIDED BY JAPAN SIDE

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Provided Equipment (H12: Year 2000 H13: Year 2001 H14: Year 2002 H15: Year 2003 H16: Year 2004 H17: 2005) ▽
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SDS: Sire and Dam Selection FM: Feeding and Management AI: Artificial Insemination GEN: General Affairs ▽
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No.	Equipment	Manufacturer	Model	Date-in	Price	Budget	Deployment	Section	Condition	Frequency
314	Inculating Wire Loop (Needle)	AS-ONE	6-8690-01	18-Aug-05	¥ 17,100	AE	PCC	FM	Supplies	
315	SIM Medium	EIKEN	E-MA32	18-Aug-05	¥ 3,800	AE	PCC	FM	Supplies	
316	Mac Conkey Agar	BBL	211387	18-Aug-05	¥ 7,440	AE	PCC	FM	Supplies	
317	EMB Agar	NISSUI	5644	18-Aug-05	¥ 5,440	AE	PCC	FM	Supplies	
318	Brilliant Green Agar	EIKEN	E-MA48	18-Aug-05	¥ 4,760	AE	PCC	FM	Supplies	
319	Cimmon's Citrate Agar	EIKEN	E-MA34	18-Aug-05	¥ 5,320	AE	PCC	FM	Supplies	
320	Violet Red Bile Agar	DIFCO	211695	18-Aug-05	¥ 12,360	AE	PCC	FM	Supplies	
321	Standard Plate Count Agar	DIFCO	247930	18-Aug-05	¥ 5,520	AE	PCC	FM	Supplies	
322	BCP Semisolid Medium	EIKEN	E-MC34	18-Aug-05	¥ 5,520	AE	PCC	FM	Supplies	
323	Mueller Hinton Agar	DIFCO	225250	18-Aug-05	¥ 11,780	AE	PCC	FM	Supplies	
324	Agrer	NISSUI	2690	18-Aug-05	¥ 10,500	AE	PCC	FM	Supplies	
325	Sterile Facial Mask	AS-ONE	CR1800	18-Aug-05	¥ 7,200	AE	PCC	FM	Supplies	
326	Antibiotic Sensitivity Disc Dispenser	BD SENSI-DISC	260459	18-Aug-05	¥ 7,760	AE	PCC	FM	Supplies	
327	Triphenyltetrazolium Chloride (TTC)		KANTO	18-Aug-05	¥ 3,800	AE	PCC	FM	Supplies	
328	Coagulase Plasma	EIKEN	E-ME07	23-Aug-05	¥ 5,200	AE	PCC	FM	Supplies	
329	Sensi-Disk	BD SENSI-DISC	296635	23-Aug-05	¥ 2,400	AE	PCC	FM	Supplies	
330	Sensi-Disk	BD SENSI-DISC	296638	23-Aug-05	¥ 2,400	AE	PCC	FM	Supplies	
331	Sensi-Disk	BD SENSI-DISC	212770	23-Aug-05	¥ 2,400	AE	PCC	FM	Supplies	
332	Sensi-Disk	BD SENSI-DISC	291024	23-Aug-05	¥ 2,400	AE	PCC	FM	Supplies	
333	Sensi-Disk	BD SENSI-DISC	296644	23-Aug-05	¥ 2,400	AE	PCC	FM	Supplies	
334	Sensi-Disk	BD SENSI-DISC	296781	23-Aug-05	¥ 2,400	AE	PCC	FM	Supplies	
335	Sensi-Disk	BD SENSI-DISC	296639	23-Aug-05	¥ 2,400	AE	PCC	FM	Supplies	
336	Sensi-Disk	BD SENSI-DISC	212771	23-Aug-05	¥ 2,400	AE	PCC	FM	Supplies	
337	Sensi-Disk	BD SENSI-DISC	291009	23-Aug-05	¥ 2,400	AE	PCC	FM	Supplies	
338	Artificial Vagina (5 pcs)	IMV		22-Sep-05	P 47,500	LAC	NESF	AI	A	A
339	AI Gun (2 pcs)	IMV	0.5ml	22-Sep-05	P 6,000	LAC	NESF	AI	A	A
340	LN2 Field Tank (2 units)	MVE	SC 3/3 (3.6L)	22-Sep-05	P 84,000	LAC	PVO	AI	A	A
341	AI Shealth (500 pcs)	IMV	0.5ml	22-Sep-05	P 1,750	LAC	NESF	AI	A	A
			Sub-total of JFY 2005/H17 (Apr. 2005 - Oct. 2005)		P 1,255,401.00 ¥ 3,730,240					

Deployment of Equipment Accompanied with Experts

Specified List
for
Computer, Printer, Scanner, Digital Camera and Voltage Regulator Units

No.	Equipment	Manufacturer	Model	Deployment
1	Color Scanner	EPSON	GT-7000U	BAI
2	PC (Laptop)	FUJITSU	FMV-BIBLO	BAI
3	Voltage Regulator	MATSUNAGA	SVC-600ND	BAI
4	Digital Camera	OLYMPUS	C-990 Zoom	NESF, BAI
5	PC (Laptop)	FUJITSU	FMV BIBLO	NESF, BAI
6	Printer	EPSON	PM820C	NESF, BAI
1	A3 Paper Inkjet Printer	CANON	i6500	PCC
2	Voltage Regulator	MATSUNAGA	SVC-600ND	PCC
3	PC (Laptop)	FUJITSU	FMV-BIBLO	Gene-Pool, PCC
4	Printer	EPSON	PM3300C	Gene-Pool, PCC
5	Voltage Regulator	MATSUNAGA	SVC-600ND	Gene-Pool, PCC
6	PC (Desktop)	FUJITSU	FMV C4/66L	Digdig/PCC
1	Color Scanner	EPSON	GT-7000U	PVO
2	Digital Camera	CASIO	GV-20	PVO
3	Laser Printer	HEWLETT-PACKARD	Laserjet 1150	PVO
4	PC (Laptop)	FUJITSU	FMV-BIBLO	PVO
5	PC (Laptop)	FUJITSU	FMV-BIBLO	PVO
6	Voltage Regulator	MATSUNAGA	SVC-1000ND	PVO

IMPLEMENTATION/ALLOCATION OF BUDGET BY PHILIPPINE SIDE

(1) Budget Allocation of PCC and BAI

Unit: Peso

Year	2000*			2001*			2002*			2003*		
Budget Source	GAA	MAKAMASA/ GMA	Total	GAA	MAKAMASA/ GMA	Total	GAA	GMA-L	Total	GAA	GMA-L	Total
PCC	185,275		185,275	175,256	37,024	212,280	178,433	21,735	200,168	103,486	3,000	106,486
BAI	65,550	60,449	125,999	63,226	68,925	132,151	56,324	47,605	103,929	56,438	40,760	97,198
Total			311,274			344,431			304,097			203,684

Year	2004			2005		
Budget Source	GAA	GMA-L	Total	GAA	GMA-L	Total
PCC	96,612	5,000	101,612	100,733		100,733
BAI	43,766	35,879	79,645	43,766	35,879	79,645
Total			181,257			180,378

* *Budget was allocated for facilities, manpower and services.*

GAA=General Appropriation Act

GMA=Ginintuang Masaganang Ani

FAPs=Foreign Assisted Project Fund

MAKAMASA

(2) Budget Allocation of PCC and NESF-BAI for the Project (WBBCIP)

Unit: Peso

Year	2002				2003				2004			2005		
Budget Source	GMA-L	FAPS	GAA & REGULAR BUDGET	Total	GMA-L	FAPS	GAA & REGULAR BUDGET	Total	GMA-L	FAPS	Total	GMA-L	FAPS	Total
PCC	10,935	1,462,000	32,478	1,505,413		1,444,800.0	138,096	1,582,896		680.2	680.2		2,401	2,401
BAI-NESF	11,565	847,000	1,204,230	2,062,795		1,576,900.0	557,010	2,133,910		680.2	680.2		2,401	2,401
Total				3,568,208				3,716,806			1,360.4*			4,802

Note: *In 2000 and 2001, budget was not allocated for WBBCIP, however, expenditures necessary for WBBCIP were covered by PCC's ordinary budget for that period.*

2000: 6 units of air conditioners, some office desks and 1 set of furniture for reception room.

2001: car insurance, maintenance costs for the project office, costs for seminar, meetings and some office supplies.

GAA & Regular Budget-these are the regular budget of PCC & BAI that are used by the operating units involved in WBBCIP.

**For 2004 the total amount released to the project is Php 1,432.0 but deducted 5% tax for Job Orders amounting to 71.6 so the actual amount released is Php 1,360.4.*

IMPLEMENTATION OF BUDGET BY JAPANESE SIDE

Unit: Peso

No.	Items of Expenditure	Fiscal Year												Total
		H12年		H13年		H14年		H15年		H16年		H17年		
		2000		2001		2002		2003		2004		2005		
		Year 2000	Year 2001		Year 2002		Year 2003		Year 2004		Year 2005			
		Oct	Mar	Apr	Mar	Apr	Mar	Apr	Mar	Apr	Mar	Apr	Oct. 1	
1	General Local Cost(一般現地業務費)	1,170,480.00		2,128,720.00		1,711,978.60		1,398,384.83		5,664,585.62		2,301,212.66		14,375,361.71
	(1) Technical Exchange Program					431,572.00		683,509.62						1,115,081.62
2	Local Application Cost(現地適応化事業費)													
	(1) Facility					40,140.00		1,321,516.50						1,361,656.50
	(2) Activity					94,860.00		1,287,983.50						1,382,843.50
	(3) Infrastructure Maintenance							6,309,118.00		##				6,309,118.00
	(Contract Basis)													
	Total	1,170,480.00		2,128,720.00		2,278,550.60		11,000,512.45		5,664,585.62		2,301,212.66		24,544,061.33

Remarks:

##: For seven cases with "O" marks on the list of "Infrastructure Maintained by Japan Side"

3	Provided Equipment							
	(1) Local Procurement **(Peso)**	2,854,492.00	12,874,852.00	14,258,512.00	15,635,743.75	6,712,560.00	1,255,401.00	53,591,560.75
	(2) Procured in Japan **(Yen)**	1,240,000	1,121,300	501,000	263,640	1,149,190	3,730,240	8,005,370

* Item No. 3 is summarized based on the date-in of equipment to the project, not its proposed JFY.

INFRASTRUCTURE MAINTAINED BY JAPAN SIDE

Unit: Peso

No.	Description	Component	Site	Date Completed	Budget		Amount	Contractor (Contract Basis)		
1	Manure Barn	FM	NESF	Sep 24, 2003	2003	H15	155,600.00	WIRO CONSTRUCTION	O	+
2	Hey Shed	FM	NESF	Nov 27, 2003	2003	H15	792,800.00	WIRO CONSTRUCTION	O	+
3	Performance Testing Shed & Stanchion	SDS	NESF	Jan 12, 2004	2003	H15	500,453.00	RG CASTRO CONSTRUCTION	O	+
4	Motor Pool & Watering Trough	General/FM	NESF	Feb 11, 2004	2003	H15	665,365.00	RG CASTRO CONSTRUCTION	O	+
5	Forage Land Readjustment No. 1 (Materials Only)	FM	NESF	Apr 21, 2004	2003	H15	1,305,000.00	NAKAGAWA CHEM. EQUIPT. PHILS.	O	
6	Exercise Paddocks	FM	PCC	Apr 26, 2004	2003	H15	1,012,205.25			+
7	Simple Access Road for Beef Cattle	General/FM	NESF	Apr 27, 2004	2003	H15	794,343.00			+
8	Relocation Survey	General/FM	NESF	May 05, 2004	2003	H15	990,000.00	RASA SURVEY	O	
9	Roof Extension of Cow Sheds A and B	FM	NESF	Jul 14, 2004	2004	H16	450,509.05			+
10	Rehabilitation of Drainage of Calf Shed	FM	NESF	Jul 19, 2004	2004	H16	1,100.00			+
11	Pastureland Development/Canal Rehabilitation	FM	PCC	Jul 28, 2004	2004	H16	146,306.50		((Sharing))	+
12	Rehabilitation of Bunker Silos and Manure Barn	FM	NESF	Aug 25, 2004	2004	H16	41,009.00			+
13	Rectification of Railing on Feeding Trough	FM	PCC	Sep 23, 2004	2004	H16	20,000.00			+
14	Rehabilitation of Access Road	General	Digdig/PCC	Sep 30, 2004	2003	H15	1,899,900.00	WIRO CONSTRUCTION	O	+
15	Mineral Feeding Drum Stand	FM	NESF	Dec 27, 2004	2004	H16	22,933.00			+
16	Rehabilitation of Working Corral	FM	NESF	Dec 27, 2004	2004	H16	72,208.50			+
17	Bull Exercise Railing (Materials Only)	AI	Digdig/PCC	Jan 10, 2005	2004	H16	25,070.00		((Sharing))	+
18	Rehabilitation of Access Road	General/FM	NESF	Jan 13, 2005	2004	H16	516,098.75			+
19	Model Cow Shed in Model Farm	FM	Licaong/PCC	Jan 26, 2005	2004	H16	268,730.00			+
20	Repair on Roof, Railings and Feeding Trough of Calf Shed	FM	NESF	Jan 27, 2005	2004	H16	23,701.00			+
21	Rehabilitation of Feeding & Watering Troughs of Bull Shed	AI/FM	NESF	Apr 12, 2005	2005	H17	116,702.50			+
22	Follow-up for No. 7 & No. 18 (Materials Only)	General/FM	NESF	Apr 18, 2005	2005	H17	36,000.00			
23	Bull Exercise Pen (Except Labour Cost)	AI	NESF	Jun 16, 2005	2005	H17	462,801.20		((Sharing))	+
24	Forage Land Readjustment No. 2 (Materials Only)	FM	NESF	Jul 14, 2005	2005	H17	68,400.00		((Sharing))	
						Total	10,387,235.75			

Bull Exercise Pen

Sub-title: Completion
Location: NESF
Object: Infrastructure
Date Completed: 16-Jun-05

It is located in front of the bull shed and beside the building of semen processing laboratory behind

Pipes for main poles are using a size of "2" G.I.

An overall view of the pens

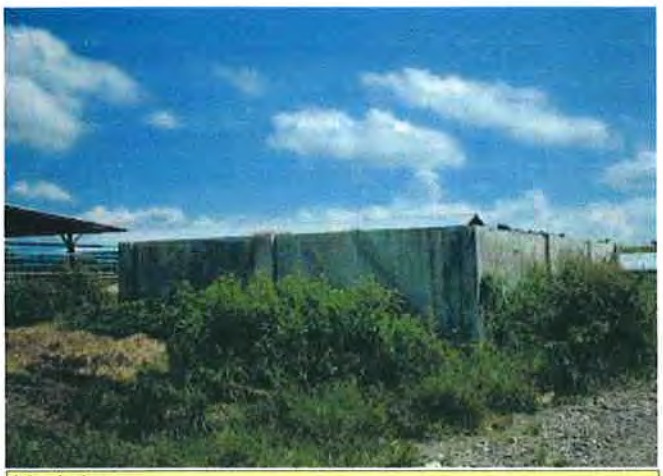
A side view

A gate in a pen

A mango tree in a pen is protected from bulls by cage and it is expected to provide shade when it grows in the future

Manure Barn

Sub-title: Completion
Location: NESF
Object: Infrastructure
Date Completed: 24-Sep-03



A back view

A front view

Occupied condition

Utilization for silage making in rainy season

Hey Shed

Sub-title: Completion
Location: NESF
Object: Infrastructure
Date Completed: 27-Nov-03

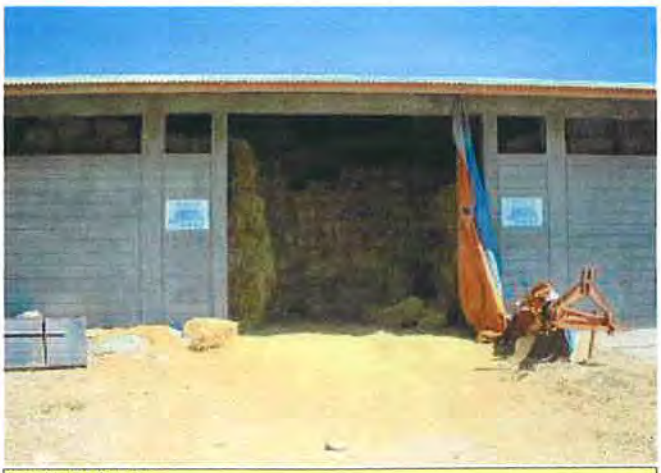
A front view

A side view

Ceiling

Hey in shed in rainy season

Hey loading in dry season



Hey in shed in dry season

Performance Testing Shed and Stanchion

Sub-title: Completion
Location: NESF
Object: Infrastructure
Date Completed: 12-Jan-04

An overall view

Inside the performance test shed

Watering trough in the direct performance test pen

Two sets of stanchion are installed for each pen

Ten units of stanchion in a pen

Another set of stanchion

Motor Pool and (Watering Troughs)

Sub-title: Completion
Location: NESF
Object: Infrastructure
Date Completed: 11-Feb-04

It is located beside the hey shed

A front view (It is divided by three areas)

A front view

Enough spaces for tractor (left) and manure spreader (right)

The rest area has enough space for parking a big truck

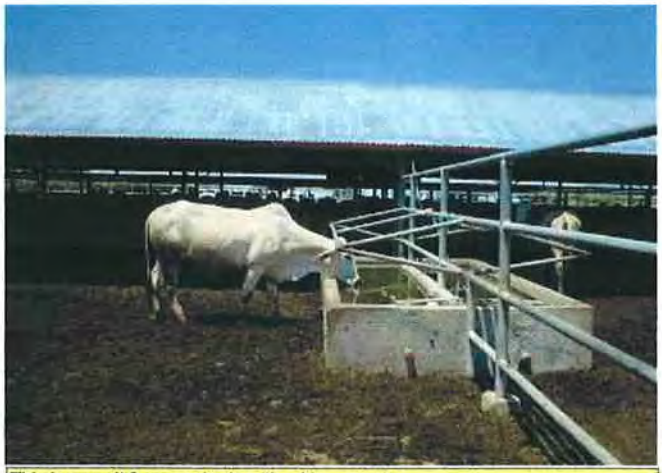
A tool room is also provided in and its door with JICA and ODA stickers

(Motor Pool) and Watering Troughs

Sub-title: Completion
Location: NESF
Object: Infrastructure
Date Completed: 11-Feb-04

An automatic flow controller with its protector is installed to an unit

A mineral feeding trough is connected to the unit for grazing area



This is an unit for cow sheds with a big protector

This is an unit for cow sheds with a big protector

This is an unit for DPT (Direct Performance Test) sheds

Exercise Paddocks for Lactating Cows, Heifer and Calf

Sub-title: Completion
Location: PCC
Object: Infrastructure
Date Completed: 26-Apr-04

Cemented paddock for lactating cows

Cemented paddock for lactating cows

Cemented paddock for lactating cows

An overall view of paddock behind shed

Fencing for the area of Heifer

Fencing for the area of Heifer

Exercise Paddocks for Lactating Cows, Heifer and Calf

Sub-title: Completion
Location: PCC
Object: Infrastructure
Date Completed: 26-Apr-04

An overall view of cemented paddock for calf

An overall view of cemented paddock for calf

Cemented paddock is connected with calf pen

Cemented paddock is connected with calf pen

Simple Access Road (4 X 900 m) for Beef Cattle

Sub-title: Completion
Location: NESF
Object: Infrastructure
Date Completed: 27-Apr-04

Before ⟹ After

Starting point of the access road

Gravelling with compaction

Shoulder is eroded by rain water from the left

A box-drainage was established along the road

Collapsed portion in the middle of the road

A wide view of box-canal

Simple Access Road (4 X 900 m) for Beef Cattle

Sub-title: Completion
Location: NESF
Object: Infrastructure
Date Completed: 27-Apr-04

Before ⟹ After

Collapsed portion in the middle of the road

A box-canal with graveled surface

Actually, this is a puddle, one of the heavy damaged portions on the road

A culvert was installed to drain water

Heavy damaged slope to the river

Slope was concreted with steel bars inside

Simple Access Road (4 X 900 m) for Beef Cattle

Sub-title: Completion
Location: NESF
Object: Infrastructure
Date Completed: 27-Apr-04

Before ⟹ After

The opposite side of the river

Also slope was concreted with steel bars and continuous graveled road

The worst portion of the road through a year

Twin box-culvert with concrete flooring design was adopted

The area near the T-junction on access road going to Palale village is marked with tracks of tractor

Filled with soil and covered by sand and gravel

Roof Extension of Cow Sheds A and B

Sub-title: Completion
Location: NESF
Object: Infrastructure
Date Completed: 14-Jul-04

An overall view of extended roofing

A side view of extended roofing

Extended roofing from the low angle

A wide view of roofing from the low angle

Extended roofing from the low angle

Extended roofing from the low angle

Rehabilitation of Drainage of Calf Shed

Sub-title: Completion
Location: NESF
Object: Infrastructure
Date Completed: 19-Jul-04

Receiving and draining mud and rain water from gate way to the weighing area

Receiving and draining mud and rain water from gate way to the weighing area

This drain system also keeps the working corral in between calf pen and gate way clean

Leading mad and rain water to the indicated direction to drain

Pastureland Development/Canal Rehabilitation

Sub-title: Completion
Location: PCC
Object: Infrastructure
Date Completed: 28-Jul-04

A rehabilitated gate of irrigation canal for pastureland No. 2

A gate of irrigation canal with a view of pastureland No. 2

A 10 ha of pastureland No. 2 and its irrigation canal

A 10 ha of pastureland No. 2 with Napier grass

A rehabilitated canal

A rehabilitated gate at the other side

Rehabilitation of Manure Burn

Sub-title: Completion
Location: NESF
Object: Infrastructure
Date Snapped: 25-Aug-04

Alteration of floor, small catch basin and drainage for effluence from silage

Alteration of floor, small catch basin and drainage for effluence from silage

A overall view of manure burn (silo)

Alteration of floor, small catch basin and drainage for effluence from silage

Alteration of floor, small catch basin and drainage for effluence from silage

Drainage-end, catch basin and drain pipe

Rehabilitation of Banker Silos

Sub-title: Before/Completion
Location: NESF
Object: Infrastructure
Date Completed: 25-Aug-04

A floor view

Ditch making for drain pipe

Cracks on the wall

Chipping of damaged portion before plastering

Re-cemented floor after installation of drain pipe, and catch basin is left on the floor

To guide juice from silage to the catch basin, three ditches were provided

Rectification of Railing on Feeding Trough

Sub-title: Completion
Location: PCC
Object: Infrastructure
Date Completed: 23-Sep-04

The purpose of this work is to prevent humps on animals' back growing from contacting railings when they are eating

Pipes painted gray color were added

The arrow shows the portion where a steel pipe added

Pipes painted gray color were added

It is easier for animals to eat feeds now

It is easier for animals to eat feeds now

Rehabilitation of Access Road

Sub-title: Completion
Location: Digdig/PCC
Object: Infrastructure
Before ⟹ After Date Completed: 30-Sep-04

A box type culvert was placed at the starting point of the access road rehabilitated. Displacement of this culvert was not enough to drain water during rainy season.

Four ϕ48 concrete barrels were installed with larger capacity instead of the box culvert

A view of upper stream where the box culvert located

A view of upper stream where the barrels installed

A view of down stream where the box culvert located

A view of down stream where the barrels installed

Rehabilitation of Access Road

Sub-title: Completion
Location: Digdig/PCC
Object: Infrastructure
Before ⟹ After Date Completed: 30-Sep-04

A view of road condition over the box culvert

A view of road condition over the barrels with concreted surface

A vehicle trail remained on the surface, and it became a drainage

Road was filled with soil and graveled

Big stones were buried

Smooth surface with a rip rap canal

Rehabilitation of Access Road

Sub-title: Completion
Location: Digdig/PCC
Object: Infrastructure
Before ⟹ After Date Completed: 30-Sep-04

An Eroded portion in curve

Rip rap canals were installed on both sides

An eroded potion on the shoulder

A rip rap canal was also installed

An eroded potion on the shoulder

Rehabilitated by graveling

Rehabilitation of Access Road

Sub-title: Completion
Location: Digdig/PCC
Object: Infrastructure
Before ⟹ After Date Completed: 30-Sep-04

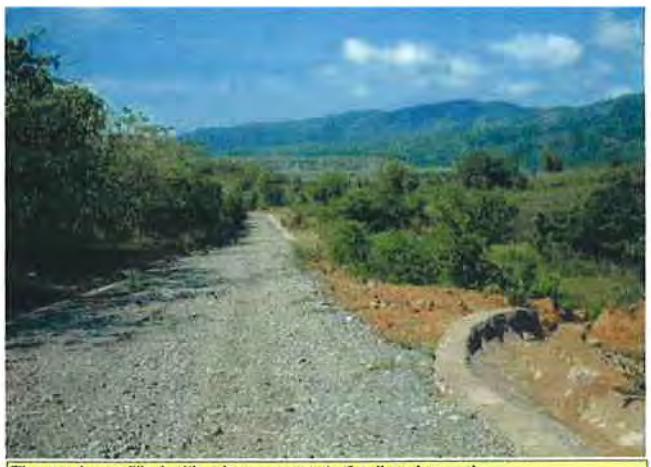
Big stones and erosion

Very smooth surface

Big stones and erosion

Very smooth surface

So many big stones were buried



The road was filled with a large amount of soil and gravel

Rehabilitation of Access Road

Sub-title: Completion
Location: Digdig/PCC
Object: Infrastructure
Before ⟹ After Date Completed: 30-Sep-04

An eroded potion on the shoulder

Very smooth surface

A view of land slide portion

A rip rap canal was installed and the angle of the slope was adjusted to 45 degrees to prevent land slide

Deep vehicle trails

Covered with a large amount of soil and gravel

Rehabilitation of Access Road

Sub-title: Completion
Location: Digdig/PCC
Object: Infrastructure
Before ⟹ After Date Completed: 30-Sep-04

Deep vehicle trails and land slide

Adjusted slop and smooth road surface

An eroded potion on the shoulder near the finish point of the road rehabilitation

Very nice road condition

Mineral Feeding Drum Stand

Sub-title: Completion
Location: NESF
Object: Infrastructure
Date Completed: 27-Dec-04

Not only a drum stand itself but also a plastic drum is removable

A set of drum stand with a mobile pen

A drum in grazing area

A drum under a mango tree in grazing area

A drum under a mango tree in grazing area

A drum under a mango tree in grazing area

Rehabilitation of Working Corral (Gate Way)

Sub-title: Completion
Location: NESF
Object: Infrastructure
Date Completed: 27-Dec-04

Before ⟹ After

After cows passing for weighing, the gate way becomes muddy

15 cm-depth concreting was executed

A condition of after raining

Steel bars are installed inside to reinforce concrete

A condition of after raining

Very improved condition with smooth and flat surface

Bull Exercise Railing

Sub-title: Completion
Location: Digdig/PCC
Object: Infrastructure
Date Completed: 10-Jan-05

Cemented floor with concrete poles and steel pipes for railing

Cemented floor with concrete poles and steel pipes for railing

These railings are located just in front of bull shed

A view of location of exercise railings, bull shed and laboratory facilities (white roofing)

Rehabilitation of Access Road (6 X 400 m)

Sub-title: Completion
Location: NESF
Object: Infrastructure
Before ⟹ After Date Completed: 13-Jan-05

There is a spring in grazing area and this is the cause of muddy road condition of the access road during rainy season

Open well near the junction of the simple access road. Actually, this is the catch basin of the water from the spring on the left side

Very muddy condition with tacks of tractors

In the view of widening the road and establishment of a rip rap canal during the construction

There were several stations in hard condition on the road

A rip rap canal along the road

Rehabilitation of Access Road (6 X 400 m)

Sub-title: Completion
Location: NESF
Object: Infrastructure
Before ⟹ After Date Completed: 13-Jan-05

Other hard stations

Rehabilitated road condition with a rip rap canal

Other hard stations

Rehabilitated road condition with a rip rap canal

The worst station on the road

Rehabilitated road condition with a rip rap canal

Rehabilitation of Access Road (6 X 400 m)

Sub-title: Completion
Location: NESF
Object: Infrastructure
Before ⟹ After Date Completed: 13-Jan-05

A view of the worst station from different angle

Rehabilitated road condition with a rip rap canal

A view of the worst station from different angle

A big size of culvert with catch basin was prepared for draining water (Exit)

A view of the worst station from different angle

A big size of culvert with catch basin was prepared for draining water (Inlet)

Rehabilitation of Access Road (6 X 400 m)

Sub-title: Completion
Location: NESF
Object: Infrastructure
Before ⟹ After Date Completed: 13-Jan-05

Very muddy road condition in front of a gate for grazing area

A foot bath style was adopted to prevent road muddy

Very muddy road condition in front of a gate for grazing area after heavy rain

A foot bath is very practical to catch water from upper portion of grazing area

Model Cow Shed

Sub-title: Completion
Location: Licaong Village, San Jose
Object: Infrastructure
Date Completed: 26-Jan-05

An overall view (under construction)

An overall view (under construction)

An overall view (under construction)

Reconfirming a location of the watering and feeding troughs (under construction)

Signboard

An overall view (completion)

Model Cow Shed

Sub-title: Completion
Location: Licaong Village, San Jose
Object: Infrastructure
Date Completed: 26-Jan-05

Watering and feeding troughs (completion)

A calf of native water buffalo in pen

Caring of water buffaloes in bathing

Caring of water buffaloes in bathing

A well was newly installed beside the shed by cooperative members for buffalo management and pastureland irrigation

A manure burn (right) was set at the back of the shed and a drainage for waste

Repair of Roof, Railings and Watering Troughs of Calf Shed

Sub-title: Completion
Location: NESF
Object: Infrastructure
Date Completed: 27-Jan-05

A wide view of re-roofing portion with painted frame with orange color

A wide view of re-roofing portion with painted frame with orange color

A L-angle bar was installed on the side to protect from damages of skid steer loader works

Re-welded railings

Re-welded railings

Re-welded railings

Rehabilitation of Feeding and Watering Troughs and Extension of Working Corral

Sub-title: Completion
Location: NESF
Object: Infrastructure
Date Completed: 12-Apr-05

Scattering hey over a feeding trough (right side) to watering trough (left side)

Each partition is remade higher to prevent scattering

Scattering hey over a feeding trough to watering trough

Also main frame was organized to the same height as partitions

Hey in a watering trough (left side) over feeding trough (right side)

Keeping water in trough clean

Rehabilitation of Feeding and Watering Troughs and Extension of Working Corral

Sub-title: Completion
Location: NESF
Object: Infrastructure
Date Completed: 12-Apr-05

A new water supply line (pipe) to 5 watering troughs in a unit with one-valve control system is established

A big size of drain (red color cover) for each watering tough is installed

Enough depth for containing feeds

A mineral feeding stand for each pen is also completed

Working corral for waste management area is widen and re-cemented with edge wing

Wider area in another side with flat floor

Bull Exercise Pen

Sub-title: Completion
Location: NESF
Object: Infrastructure
Date Completed: 16-Jun-05

It is located in front of the bull shed and beside the building of semen processing laboratory behind

Pipes for main poles are using a size of "2" G.I.

An overall view of the pens

A side view

A gate in a pen

A mango tree in a pen is protected from bulls by cage and it is expected to provide shade when it grows in the future

4. Problems in implementing and operating the Project, the ideas to overcome them and the lessons learned

(1) Situations and problems in the partner institutes

1) Philippine Carabao Center (PCC)

The PCC is an attached agency of the Department of Agriculture (DA) created on March 27, 1992 by virtue of Republic Act 7307 otherwise known as "Philippine Carabao Act of 1992" Operationalized in the second quarter of 1993, PCC is mandated to conserve, propagate and promote the Carabao as a source of draft animal power, meat, milk and hide to benefit the rural farmers. It has four support divisions and a network of 13 regional centers nation-wide to implement the Carabao Development Program (CDP).

The Project has focused on increasing the milk production in water buffalo. PCC has imported dairy Murrah buffaloes mainly from Bulgaria, and intended to distribute their superior germplasm to farmers in the form of semen and/or animal. However, the genetic ability of the imported buffaloes and their progenies is very variable and there was no evaluation/selection system for breeding stocks before the Project. Especially, sires for semen production should be correctly evaluated and selected, because this is critical in case the semen is used nation-widely.

When the Project started the main building was under construction, which caused the delay of implementation of some activity of the Project.

2) Bureau of Animal Industry (BAI), Nueva Ecija Stock Farm (NESF)

The BAI, a staff bureau under the DA is mandated to promote the livestock and poultry industries as well as to safeguard animal health, to ensure public health through quality animal food products and to help the farmers achieve profitability. NESF is the largest cattle producing farm in the main island of Luzon under BAI, and is mandated to produce and distribute purebred Brahman cattle, to collect and evaluate the performance data of purebred Brahman cattle, to propagate different species of forage grasses, legumes and fodder trees for distribution, and to conduct research/trials on the performance of local crossbred and purebred cattle grazed on different species of forage grasses, legumes and fodder trees.

NESF was newly established in 1998 as an alternative farm of the abolished Alabang Stock Farm. When the Project started, NESF was still in the process of the construction, the power supply and the access-road bridge have not yet been installed.

(2) Present situations and problems in the related fields to the Project

1) Sire and Dam Selection (SDS)

a) Water Buffalo: WB

Native water buffalo in the Philippines is swamp type and has been used mainly as draft-power. Intending to increase the milk/meat ability of the native Carabao by cross-breeding, PCC has been introducing river-type Murrah buffaloes to the country mainly from Bulgaria. These

buffaloes have been distributed to the farmers in the form of animals or bull's semen. When the artificial insemination spreads more nation-widely, the genetic ability of the sires for frozen semen is very critical. However, there was no scientific selection/breeding system practiced in the country before the Project. Although the data collection and recording systems are essential for animal breeding, they were not so appropriate. Besides, some imported Murrah buffaloes don't have pedigree or birth record.

b) Beef Cattle: BC

BAI has imported American Brahman breed to improve the beef productivity of local breed. These cattle were introduced into government stock farms or commercial breeding farms. However, even in these farms there was no scientific selection/breeding system practiced before the Project. NESF is one of the government stock farms, but even the identification system was not so appropriate. Importance of the genetic ability of sires is similar as water buffalo, especially when the sire is used as a semen donor.

2) Feeding and Management (FM)

a) PCC

Through the survey and analysis of the actual condition that was implemented in the first year of the Project, the following problems were identified in the field of feeding and management.

- unstable production of the necessary amount of food
- lack in reliability of the basic data with respect to growth, milking performance and reproduction
- malnutrition of the animals
- poor growth level of calves
- inappropriate milking technique

b) NESF

Through the same survey as above, the following problems were identified in the field of the feeding and management in NESF.

- poor growth level of calves
- shortage of feed pasture
- lack of necessary data for feeding management
- malnutrition of feeding cows

3) Artificial Insemination (AI)

Artificial insemination is the best technique to improve animal's genetic while avoiding transmission of any venereal disease. Although the introduction of the technology was made years ago and there were 10-year efforts through Japan Overseas Cooperation Volunteers project (Strengthening of National Artificial Insemination Project), the diffusion of the technique is still at low level. From the results of JOCV project, this is attributed to the followings:

- lack of a long-term, unified, national AI development program
- shortage of both full-time AI technicians and technical demonstration facilities
- weak support from local governments in terms of budget and supporting policies
- lack or absence of vehicles to address AI technicians' mobility
- lack or absence of field supplies and unstable liquid nitrogen (LN2) supply
- lack of awareness of small hold farmers about the importance and benefits of AI

To overcome these obstacles Unified National Artificial Insemination Program (UNAIP) was formulated. Although the program was not included to WBBCIP (the Project), the mid-term evaluation team recommended that it is necessary to continue and enhance the close relationship between the UNAIP and the Project.

Most of the techniques for semen processing/freezing had been transferred to Philippine side through JOCV project, but NESF had no facilities to produce frozen semen when the Project started.

The conception rates in both PCC and NESF were too low to implement appropriate genetic selection in the early stage of the Project.

(3) Practiced measures (ideas) to enhance the efficiency, the achievement of outputs, the impact, the relevance and the sustainability of the Project

1) Sire and Dam Selection (SDS)

Before the Project, there were no sufficient breeding and recording systems in PCC and NESF.

At the beginning of the Project animal identification, body measurement, data-collecting and processing systems were established in both places.

In PCC the sires were selected based on their dams' accurate milking data and the reproductive performance. Animals with physical defects were eliminated from dam and sire.

And in NESF the system of Direct Performance Test (DPT) was established and the sires were selected mainly based on their growing abilities under the same feeding condition.

In both WB and BC, the collection of accurate data was emphasized for appropriate sire and dam selection. Identification system of the animals was simplified for easy and reliable management.

Although the targeted numbers of the sires were selected, some more time is necessary to produce qualified semen because of their slow sexual maturity in both animals.

2) Feeding and Management (FM)

In both Project sites systematic techniques of Feeding and Management were established.

In PCC standard feeding system was established according to animal's life-phase such as calves, young heifers/bulls, pregnant and lactating/dry cows. These efforts include the improvement of facilities such as housing for calves and lactating cows, drinking troughs and feed bunks, exercise areas, individual calf pen and so on. Body Condition Scoring (BCS) was introduced

to the counterparts and completely mastered and being carried out by themselves. Laboratory equipment and facilities for feeds and milk analysis were installed, which made possible to analyze nutrient composition of forages and feed supplements from the both Project sites. Installation of feed mixer and hammer mill enabled the production of home-mixed concentrates. The techniques include health management for mastitis, diarrhea and pneumonia. Actually the mortality of young calves was decreased by preventing diarrhea and pneumonia.

In NESF the feeding and management was improved. Year-round feeding system was established, under grazing system during wet season and feeding stocked forage (rice straw, silage and hay) during the dry season. Intensive grazing system was also introduced and the efficient utilization of grazing area was attained. The BCS was also introduced and established and completely mastered and carried out by the counterparts.

Many efforts were done to improve forage production in both sites such as the improvement of grass land, the construction of access roads and manure utilization, but feeding problem should always be anticipated due to the severe conditions particularly during the dry season.

3) Artificial Insemination (AI)

In NESF a semen processing laboratory was established and started to produce frozen semen. Through the provision of semen processing equipment and instruction from the experts, the quality of frozen semen produced in PCC and NESF were improved.

The conception rates in both places were increased by the improvement of insemination techniques including heat detection system together with the improvement of the feeding and management. However, in WB the level of conception rate of AI is still low compared to BC, probably because of their reproductive physiological character and the herd's high age.

4) Training Courses

The training courses on feeding and management for the farmers (5 times, 87 participants) and the technicians (3 times, 54 participants) were conducted during the Project. These courses developed the competence of the participants. There is one case of the farmer-participants of the first batch who has now become a lecturer of the course. He is transferring his learning, experiences and techniques by allowing other farmers the opportunity to visit and observe his place where the milking buffalo farming is going very well. This is an efficient and effective way of technical transfer.

In general, as for the one of the indicators for the outputs, "Five training courses for model farmers conducted and 80% of farmers adopted the technologies.", the adoption rate reached to 89%.

5) Publication of Manuals, Brochures and Sire Directory

Although only the manuals for AI and Feeding and Management were identified and scheduled to be produced in Project Design Matrix (PDM), we have produced more publications.

Brochures in Tagalog language were produced for the farmers to easily understand the technology of feeding and management.

6) Model Farms and Cooperative

The Project has been giving technical supports to the WB model farms that were selected in Licaong Village in Munoz near the PCC. A Model Cow Shed was constructed in the village to demonstrate the improved feeding and management techniques. The dairy buffalo cooperative in the area is called the Licaong Dairy Producers Cooperative (LDPC), which is processing milk, selling the dairy products. Also the cooperative is providing the products to Milk Feeding Program (for undernourished school pupils) in cooperation with Munoz City. Many people concerned with dairy buffalo are visiting the village because of the proximity of the cooperative to PCC, about 5 minutes away. More development as a dairy buffalo village is expected in the future.

7) Communication between Experts and Counterparts

Responded to the recommendation of the Mid-term Evaluation team, the Project has had monthly meetings separately or jointly with PCC and BAI. Here the monthly progresses of the Project activity were reported by the counterparts of each section and the following month's plan was discussed. Also we have had nine (9) times of the Joint Coordinating Committee (JCC) Meetings almost semiannually. Every important issues relating to the Project implementation were discussed here and necessary decisions were made.

Although the Project involves two different agencies, PCC and BAI under DA, which are working on different animals, WB and BC, there were no conflicts at all in implementing the Project. G ood collaborating relationship was built up.

(4) Measures that should be taken after the Project by the partner country in order to enhance the sustainability

1) Concept

Even if the Overall Goal in the PDM, "Productivity of Water Buffalo (WB) and Beef Cattle (BC) in the country improved." is far from being achieved, everybody concerned will recognize and agree that this is our ultimate target. As stated or indicated in the PDM, this maybe realized if "DA replicates the results of the Project to other areas of the country." PCC and NESF should continue to improve and function as national core centers for WB and BC respectively. The results of the Project should be disseminated all over the country. BAI has several stock farms and PCC also has 13 regional centers in the country. Transferring technologies such as adoption of recording and feeding systems to these places after the Project is largely expected and is actually happening. Action Plan Responded to the recommendation made by the Joint evaluation team, the Philippine side made Action Plan as attached.

(5) Lessons learned and suggestions for the future cooperation in similar project and field

1) Although Japanese experts had not plenty knowledge/experience on water buffalo, almost of the basic technique on cattle could be applied to water buffalo.

1) In case of beef cattle, less knowledge/experience of Japanese side (mission, experts) on Brahman breed and the insufficient survey caused the delay of the semen collection to the schedule.

2) When there is a relation between the indicators, the relation should be clearly defined. (Between 1-1 of Project Purpose and 1-1 of Outputs. Because, the selection should be finally done according to the semen quality of the tested bulls. The indicator "Frozen semen of tested bulls…" might cause some misunderstandings.)

3) The indicators should come from which the accurate data can be collected. (Although the conception rates in the field were included in the indicator, the accuracy of the data is doubtful because of the lack of animal identification system in the farmers.)

4) Some technique was difficult to be applied because of the social custom or the farmers' likings (e.g. dehorning in water buffalo).

Revision of Project Design Matrix (PDM)

OBJECTIVELY VERIFIABLE INDICATORS

As Revised/Added (Version 2)			Old (Version 1)
→	Overall Goal	1.	Milk production in water buffaloes will be increased.
Weight gaining rate in BC will be increased.		2.	Weaning weight in beef cattle will be increased.
Frozen semen of tested sire produced 1,500 straws/head/year in WB and 1,000 straws/head/year in BC.	Project Purpose	1-1)	
Increased milk production of WB by 3% at model farmers from 2003 to 2005.		2-1)	Increased milk production of WB from 3 liters per head per day to 4.5 liters per head per day at model farms by 2005.
Increase weaning weight of BC by 3% at the NESF from 2003 to 2005.		2-2)	Increased weaning weight of BC from 165 kg to 180 kg. To 200 kg for male at the NESF.
AI conception rate in pilot area increased from 41% to 46% in WB and from 49% to 54% in BC by 2005.		3-1)	
12 offspring male buffaloes based on accurate dams and sires data and 6 offspring male cattle based on direct performance test selected.	Outputs	1-1)	Selection parameters and standards manual developed for WB and BC by 2005.
Feeding and management manual developed by 2005.		2-1)	Feeding and health management manual developed by 2005.
→		2-2)	50 PCC, BAI & LGU technicians trained on improved technologies on feeding and management.
AI manual on WB and BC developed respectively by 2005.		3-1)	Unified AI manual on WB and Cattle developed by 2005.
Frozen semen motility rate improved more than 30% after thawing.		3-2)	AI conception rate in the pilot area increased from 41 to 50% in WB and from 49 to 60% in BC by 2005.
5 training courses for model farmers conducted and 80% of farmers adapted the technologies.		4-1)	Two (2) information materials for WB and BC developed on feeding and management by 2005.
			Two (2) training curriculums for WB and BC developed on feeding and management by 2005.

REASONS

(OVERALL GOAL)

2. In old PDM "weaning weight" is only mentioned but "aggregate weight" is more meaningful for the improvement to be evaluated.

(PROJECT PURPOSE)

1-1) The indicator in old PDM was based on the result of heterosis, not from the result of the project activity. Therefore, number of straw/head/year from tested sire is used as indicator that is connected to the Output 1.

2-1) Indicator of milk yield was attributed to Sire and Dam Selection but if it is not crossbred the yield increase won't be expected by the selection itself.
In new PDM, the indicator attributed the result from feeding and Management. 3% is quoted from increasing milk production by affection of feeding in Holstein and adapted it for farmers level. Milking data will be collected from four (4) model farmers in different areas which is now under consideration and a figure also will be considered in the remaining period of the project.

2-2) In old PDM, a USA standard was adapted but figures were not actual conditions for NESF due to shortage of feeds. 3% of increase for weaning weight from USA farms in a report is quoted as the indicator, and six (6) to seven (7) months is quoted as weaning stage in the project. The base line will be settled soon.

3-1) Conception rate was quoted as the indicator of the Output in old PDM but it will be achieved by synthetic factor from the results of Outputs such as using high quality frozen semen, insemination activities by skilled AI technicians. Therefore, it is put as the indicator of the Project purpose. 10% was quoted in old PDM based on data from the Region III but through the observation in the first part of the project, this figure was too high for the pilot area. In consideration of the past data, the half which is 5% is realistic.

(OUTPUTS)

1-1) In old PDM, development of selection parameters and standard manual was the indicator but in new PDM it is revised to be selected 12 offspring of WBs and six (6) offspring of BCs as the result of using the parameter and manual. It is possible to produce male as planned but the number of female should be decided in consideration of the balance in herd and, it depends on the conception rate, aging balance of herd and performance of animals. Therefore, the number of female is not quoted in the indicator. In WB, six (6) males/year is possible to be selected depending on performance of mother and three (3) males/year is also possible to be selected from nine (9) candidates in BC.

3-1) In old PDM, UNAIP is considered but unity of AI manual on both animals is not reasonable. Because they have different reproductive physiology and its manual will be made respective to emphasize the difference of them.

3-2) Improvement of conception rate is put as the indicator for upper level to be achieved by aggregate activities in daily as mentioned in the project purpose. In connection with increase of conception rate, frozen semen motility is one of the important assumptions to be maintained and 30% is quoted for the project as its standard.

4-1) In old PDM, only development of materials is mentioned but it is revised for utilization of them for training programs to be verified and evaluated by farmers on technologies. 80% of technology adaptation in trained farmers is quoted as a criterion.

Revision of Project Design Matrix (PDM)

NARRATIVE SUMMARY

As Revised/Added (Version 2)		Old (Version 1)
→	OVERALL GOAL	Productivity of Water Buffaloes (WB) and Beef Cattle (BC) in the country improved.
Relevant techniques for improvement of WB and BC developed in the Province of Nueva Ecija.	PROJECT PURPOSE	Relevant techniques for WB and BC developed in the Province of Nueva Ecija.
→	OUTPUTS 1	Sire and dam selection techniques for WB & BC improved.
Feeding and management techniques of the PCC, BAI and LGUs technicians improved.	2	Feeding and management techniques and related teaching skills of the PCC, BAI and LGUs technicians improved.
→	3	Artificial insemination techniques of the PCC, BAI and LGUs technicians improved.
Training Programs for model farms on feeding and management improved.	4	"Trainers' Training Programs for Farmers" on feeding and management improved.

REASONS

OVERALL GOAL

No change

PROJECT PURPOSE

Made "relevant techniques" clear.

OUTPUT 2

Feeding and management should cover wider aspects furthermore, teaching skill requires another professional knowledge. It is difficult the project achieving technician's teaching skill. The project concentrates to conduct training mentioned in Activities 2-4.

OUTPUT 4

The same reason in above, and "Trainers' training programs for farmers" is not clear. This training program will be conducted by the project C/P but the expert will advise and support the program.

Revision of Project Design Matrix (PDM)

NARRATIVE SUMMARY

As Revised/Added (Version 2)		Old (Version 1)
	ACTIVITIES	
→	1	Improvement of selection techniques of sire and dam
→	1-1)	To survey and analyse of actual situation.
→	1-2)	To establish selection methods of sire and dam.
→	2	Improvement of feeding and management techniques
→	2-1)	To survey and analyse of actual situation.
→	2-2)	To establish a systematic technique for feeding management.
To establish health management techniques for mastitis, diarrhea and pneumonia	2-3)	To establish health management techniques.
→	2-4)	To implement training courses for technicians of the PCC, BAI and LGUs
→	3	Improvement of the artificial insemination techniques
→	3-1)	To survey and analyse of actual situation
→	3-2)	To produce high-quality frozen semen
To implement training courses for technicians of the PCC, BAI and LGUs. To review and update AI manual used by the PCC and BAI.	3-3)	To transfer effective techniques of artificial insemination for technicians of the PCC, BAI and LGUs.
	3-4)	To promote preserving and handling techniques of frozen semen.
	3-5)	To improve training courses for technicians of the PCC, BAI and LGUs.
Development of training programs for model farmers on feeding management	4	Development of training programs for farmers
To develop training program and material for model farmers and LGUs technicians.	4-1)	To develop training program and material.
To implement training courses for model farmers and LGUs technicians.	4-2)	To implement training courses for model farmers by trainers.
→	4-3)	To evaluate the results of training courses.

REASONS

ACTIVITIES

Activity is basically collaborating with expert and C/P but Activities 2-4, 3-3, 3-4 and 4 belong to extension services. Extension aspect is strongly related with sustainability. Expert will advise and C/P takes initiative of training program.

2-3) In old PDM, health management is indistinct, wide and some veterinary aspects were included. Therefore, the activity is put limit with only mastitis, diarrhea and pneumonia.

3-3) } In old PDM, Activities 3-3, 3-4 and 3-5 can be unified as new 3-3. As well as other training programs of the new PDM, C/P initially gives technical guidance to technicians, and expert will advise to the C/P.

3-4) The manual in Activities 3-4 is the textbook used in the training courses. C/P initially prepares the textbook, and expert will give advice.

3-5) }

4 BAI has no extension services. Training for model farmer will be conducted on feeding and management. Main purpose of the training is targeted for farmers but LGUs are added to involve them in farmers training and giving idea of diffusion.

Revision of Project Design Matrix (PDM)

IMPORTANT ASSUMPTION

As Revised/Added (Version 2)		Old (Version 1)
	OVERALL GOAL LEVEL	
→		Livestock production policies will not drastically change
→		Economic fundamentals remain strong
The Department of Agriculture replicates the results of the Project to other areas of the country		
	PROJECT PURPOSE LEVEL	
→		Trained personnel will stay with the implementing organizations
		Model farmers will positively accept the improved technology
LGUs will extend AI service in the pilot area		LGUs will support training and extension for model farmers
		The Department of Agriculture replicates the results of the project to other areas of the country
Farmers from other modules will attend training programs for model farmers		
Farm level marketing especially for milk is existing		
	OUTPUTS LEVEL	
→		No major animal diseases outbreak at the project sites
→		LGUs send technicians to AI seminar
→		PCC and BAI should maintain the equipment
Model farmers will positively accept the improved technology		
No extreme weather condition		

REASONS

OVERALL GOAL LEVEL

- The assumption, "The Department of ....." was moved from project purpose level, considering its importance for the sustainability of the project.

PROJECT PURPOSE LEVEL

- "LGUs will support....." was changed to "LGUs will extend AI.....". Because the number of model farmers is very limited, and LGUs role for AI extension in the pilot area is more important.
- Attendance from other modules to the training for model farmers was added. Because this is related to the upper goal.
- The farm level marketing was added to ensure that milk can be sold and bring an income to farmers.

OUTPUT LEVEL

- The assumption, "Model farmers will....." was moved from project level. Because output level is more suitable for this assumption.
- "No extreme weather condition" was added. Because flood/drought might hamper the achievement of the project.

Project Design Matrix (PDM)

As of August 1, 2001

Project Title: WATER BUFFALOES AND BEEF CATTLE IMPROVEMENT PROJECT

Target Group: Technicians of PCC (National Water Buffalo Gene Pool & Philippine Carabao Center at CLSU), BAI (Nueva Ecija Stock Farm (NESF)), Local Government Units (LGUs) in Nueva Ecija Province
Target Area: Province of Nueva Ecija, Philippines Project Implementation: JICA, PCC/DA, BAI/DA Duration: 5 years (October 2, 2000 - October 1, 2005)

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
OVERALL GOAL: Productivity of Water Buffaloes (WB) and Beef Cattle in the country improved.	1. Milk production in water buffaloes will be increased. 2. Weaning weight in beef cattle will be increased.	- Bureau of Agriculture Statistics - PCC, BAI annual report	- Livestock production policies will not drastically change - Economic fundamentals remain strong
PROJECT PURPOSE: Relevant techniques for WB and BC developed in the Province of Nueva Ecija.	1-1) Increased milk production of WB from 3 liters per head per day to 4.5 liters per head per day at model farms by 2005. 2-1) Increased weaning weight of BC from 165 kg to 180 kg. To 200 kg. for male at the NESF.	- Project survey records	- Trained personnel will stay with the implementing organizations - Model farmers will positively accept the improved technology - LGUs will support training and extension for model farmers - The Department of Agriculture replicates the results of the project to other areas of the country
OUTPUTS 1. Sire and dam selection techniques for WB & BC improved. 2. Feeding and management techniques and related teaching skills of the PCC, BAI and LGUs technicians improved. 3. Artificial insemination techniques of the PCC, BAI and LGUs technicians improved. 4. "Trainers' Training Programs for Farmers" on feeding and management improved.	1-1) Selection parameters and standards manual developed for WB and BC by 2005. 2-1) Feeding and health management manual developed by 2005. 2-2) 50 PCC, BAI & LGU technicians trained on improved technologies on feeding and management. 3-1) Unified AI manual on WB and Cattle developed by 2005. 3-2) AI conception rate in the pilot area increased: from 41 to 50% in WB and from 49 to 60% in BC by 2005. 4-1) Two(2) information materials for WB and BC developed on feeding and management by 2005. 4-2) Two(2) training curriculums for WB and BC developed on feeding and management by 2005.	- PCC, BAI annual report - Manual for sire selection methods - Animal management ledger - Manual for feeding and health management - UNAIP artificial insemination statistics - Manual for unified AI - Post training evaluation report - IEC (Information, Education and Communication) materials produced	- No major animal diseases outbreak at the project sites - LGUs send technicians to AI seminar - PCC and BAI should maintain the equipment
ACTIVITIES 1. Improvement of selection techniques of sire and dam 1-1) To survey and analyse of actual situation. 1-2) To establish selection methods of sire and dam. 2. Improvement of feeding and management techniques 2-1) To survey and analyse of actual situation. 2-2) To establish a systematic technique for feeding management. 2-3) To establish health management techniques. 2-4) To implement training courses for technicians of the PCC, BAI and LGUs. 3. Improvement of the artificial insemination techniques 3-1) To survey and analyse of actual situation. 3-2) To produce high-quality frozen semen. 3-3) To transfer effective techniques of artificial insemination for technicians of the PCC, BAI and LGUs. 3-4) To promote preserving and handling techniques of frozen semen. 3-5) To improve training courses for technicians of the PCC, BAI and LGUs. 4. Development of training programs for farmers 4-1) To develop training program and material. 4-2) To implement training courses for model farmers by trainers. 4-3) To evaluate the results of training courses.	**INPUT** 1. JICA experts 1-1) Long-term - Chief adviser (may serve concurrently as an expert) - Project coordinator - Selection of sire and dam - Feeding and management - Artificial insemination 1-2) Short-term (when necessity arises) 2. Equipment and machinery 3. Counterpart training in Japan 4. Operating budget 5. Mission dispatched (when necessity arises)	The Philippines 1. Personnel - Project Director - Project Deputy Director - Project Manager - Project Sub-manager - Counterparts to Japanese experts - Clerk, secretary and other necessary staff 2. Land, buildings and facilities 3. Operating budget 4. Supplies for frozen semen production	- Stable acquisition of liquid nitrogen - Stable acquisition of supplies for semen production - No drastic change in implementing organizations **PRECONDITIONS** - Steady cooperation PCC and BAI - Bulls will be infused to NESF - PCC, BAI budget will be prepared on schedule - Counterparts, including those trained in Japan, will stay with the Project - Additional personnel will be appropriately designated to the project - PCC and NESF prepare training expenses - Basic infrastructure are built in NESF

Project Title: WATER BUFFALOES AND BEEF CATTLE IMPROVEMENT PROJECT

Target Group: Technicians of PCC (National Water Buffalo Gene Pool & Philippine Carabao Center at CLSU), BAI (Nueva Ecija Stock Farm (NESF)), Local Government Units (LGUs) in Nueva Ecija Province
Target Area: Province of Nueva Ecija, Philippines Project Implementation: JICA, PCC/DA, BAI/DA Duration: 5 years (October 2, 2000 - October 1, 2005)

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
OVERALL GOAL: Productivity of Water Buffaloes (WB) and Beef Cattle (BC) in the country improved.	1. Milk production in WB will be increased. 2. Weight gaining rate in BC will be increased.	- Bureau of Agriculture Statistics - PCC, BAI annual report	- Livestock production policies will not drastically change - Economic fundamentals remain strong - The Department of Agriculture replicates the results of the Project to other areas of the country
PROJECT PURPOSE: Relevant techniques for improvement of WB and BC developed in the Province of Nueva Ecija.	1-1) Frozen semen of tested sire produced 1,500 straws/head/year in WB and 1,000 straws/head/year in BC. 2-1) Increased milk production of WB by 3% at model farmers from 2003 to 2005. 2-2) Increase weaning weight of BC by 3% at the NESF from 2003 to 2005. 3-1) AI conception rate in pilot area increased from 41% to 46% in WB and from 49% to 54% in BC by 2005.	- Project survey records - Record of frozen semen production	- Trained personnel will stay with the implementing organizations - LGUs will extend AI service in the pilot area - Farmers from other modules will attend training programs for model farmers - Farm level marketing especially for milk is existing
OUTPUTS 1. Sire and dam selection techniques for WB & BC improved. 2. Feeding and management techniques of the PCC, BAI and LGUs technicians improved. 3. Artificial insemination techniques of the PCC, BAI and LGUs technicians improved. 4. Training Programs for model farms on feeding and management improved.	1-1) 12 offspring male buffaloes based on accurate dams and sires data and 6 offspring male cattle based on direct performance test selected. 2-1) Feeding and management manual developed by 2005. 2-2) 50 PCC, BAI and LGUs technicians trained on improved technologies on feeding and management. 3-1) AI manual on WB and BC developed respectively by 2005. 3-2) Frozen semen motility rate improved more than 30% after thawing. 4-1) 5 training courses for model farmers conducted and 80% of farmers adapted the technologies.	- PCC, BAI annual report - Manual for sire selection methods - Animal management ledger - Manual for feeding and health management - UNAIP artificial insemination statistics - Post training evaluation report - IEC (Information, Education and Communication) materials produced	- No major animal diseases outbreak at the project sites - PCC and BAI should maintain the equipment - LGUs send technicians to AI seminar - Model farmers will positively accept the improved technology - No extreme weather condition
ACTIVITIES 1. Improvement of selection techniques of sire and dam 1-1) To survey and analyse of actual situation. 1-2) To establish selection methods of sire and dam. 2. Improvement of feeding and management techniques 2-1) To survey and analyse of actual situation. 2-2) To establish a systematic technique for feeding and management. 2-3) To establish health management techniques for mastitis, diarrhea and pneumonia. 2-4) To implement training courses for technicians of the PCC, BAI and LGUs. 3. Improvement of artificial insemination techniques 3-1) To survey and analyse of actual situation. 3-2) To produce high-quality frozen semen. 3-3) To implement training courses for technicians of the PCC, BAI and LGUs. 3-4) To review and update AI manual used by the PCC and BAI. 4. Development of training programs for model farmers on feeding management 4-1) To develop training program and material for model farmers and LGUs technicians. 4-2) To implement training courses for model farmers and LGUs technicians. 4-3) To evaluate the results of training courses.	**INPUT** 1. JICA experts 1-1) Long-term - Chief adviser (may serve concurrently as an expert) - Project coordinator - Selection of sire and dam - Feeding and management - Artificial insemination 1-2) Short-term (when necessity arises) 2. Equipment and machinery 3. Counterpart training in Japan 4. Operating budget 5. Mission dispatched (when necessity arises)	The Philippines 1. Personnel - Project Director - Project Deputy Director - Project Manager - Project Sub-manager - Counterparts to Japanese experts - Clerk, secretary and other necessary staff 2. Land, buildings and facilities 3. Operating budget 4. Supplies for frozen semen production	- Stable acquisition of liquid nitrogen - Stable acquisition of supplies for semen production - No drastic change in implementing organizations **PRECONDITIONS** - Steady cooperation PCC and BAI - Bulls will be infused to NESF - PCC, BAI budget will be prepared on schedule - Counterparts, including those trained in Japan, will stay with the Project - Additional personnel will be appropriately designated to the project - PCC and NESF prepare training expenses - Basic infrastructure are built in NESF

Summary of Discussions in Joint Coordinating Committee (JCC) Meetings

Time	Date Conducted	Venue	Number of Participants		Summary of Meeting
			Japanese	Philippine	
1st	February 20, 2001	Sulo Hotel, Quezon City	9	14	**Revision of PDM** 1. There are some comments from participants that there are some unclear points in the Project Design Matrix (PDM) and they should be modified and revised concerning more impacts such as contribution and services to the public. 2. Plan of Operation (PO) for five years implementation and Annual Plan of Operation (APO) for the next year are introduced by Mr. Matsumoto, Chief Adviser.
2nd	August 01, 2001	Sulo Hotel, Quezon City	10	12	**Minutes of Understanding (Japanese Consultation Team)** 1. PDM is revised (as of August 1, 2001) and confirmed among participants. 2. Delay on schedule of constructing a bridge located on the way to Nueva Ecija Stock Farm (NESF) is discussed and reached to an agreement that the Philippine side has to hold a meeting among agencies concerned, the province of Nueva Ecija, NESF and the construction company for the immediate action plan to be reported to the project by the end of August. 3. A construction of housing for the experts is scheduled to be finished by the end of this year with a commitment. 4. To implement the activities in the NESF smoothly Bureau of Animal Industry (BAI) commits to deploy three (3) technicians and five (5) assistants by the end of August. 5. Maintenance of the basic infrastructure in the NESF by the Philippine side is strongly requested by the Japanese side for taking activities effectively. 6. The Philippine side will try to allocate a budget from Foreign Assisted Project Support Fund to the project in addition to the regular budget. 7. Definition of Model Farmer in Record of Discussion (R/D) is refined as three (3) categories, cooperative farmer, monitoring farmer and verification farmer for the Philippine Carabao Center (PCC) and NESF, but this is adjustable for the NESF to be considered the progress of the infrastructure maintenance. 8. The purpose of the project is demarcated against the Unified National Insemination Program (UNAIP) activities to be recognized for cooperation only in handling training and producing manuals such as on frozen semen processing.
3rd	July 31, 2002	Great Eastern Hotel, Quezon City	9	15	1. There is a suggestion from the Special Project Coordination Management Assistance Division (SPCMAD) for the project to provide quantitative and more measurable indicators.

Summary of Discussions in Joint Coordinating Committee (JCC) Meetings

Time	Date Conducted	Venue	Number of Participants		Summary of Meeting
			Japanese	Philippine	
3rd	July 31, 2002	Great Eastern Hotel, Quezon City	9	15	2. There is a request from the Philippine side to consider about ex-Japan Overseas Cooperation Volunteers (JOCVs) and former experts to be dispatched for smooth continuity of the project activities in utilizing their working experience and adaptation to the Philippines. 3. Training on feeding and management on beef cattle is approved to be included in the counterpart training program in Japan, which is suggested by the BAI. 4. Recommended by the Philippine side for the duration of the counterpart training program in Japan is to possibly extend for two or three months. 5. Recommended by the Philippine side for the group training program on Artificial Insemination (AI) in Japan is to give a priority to the Local Government Unit (LGU) technicians in the pilot area. 6. In general, the project implementation is on schedule except for the delay in installing the JICA procured equipment for the feed analysis work due to the delay in completion of the laboratory facilities at the new PCC building, and in response, PCC committed to make it operational by the first week of August before the arrival of the short-term expert on feed analysis. 7. Test animals under the Sire and Dam Selection (SDS) component of the PCC shall include animals at the farmer level. The scarcity of the feed supply especially during dry season has affected the performance of the animals undergoing evaluation at NESF, and the Philippine side addresses this problem by increasing the area planted with corn, Napier and other forage, undertaking the feed preservation technologies such as ensiling. 8. Suggested by the National Economic and Development Agency (NEDA) representative to include in the PDM at the assumption column and at the purpose level a statement; "that farm level marketing especially for milk is existing". 9. The bridge on the way to the NESF is 98% completed and is already passable. 10. Six (6) permanent staff members have assigned to the NESF and two (2) additional permanent assistants will be appointed. 11. The GMA-livestock augmentation fund amounting to P22.5M is instrumental in improving facilities both at the PCC and NESF. 12. The SPCMAD of the Department of Agriculture will be a member of the JCC meeting of the WBBCIP.

Summary of Discussions in Joint Coordinating Committee (JCC) Meetings

Time	Date Conducted	Venue	Number of Participants		Summary of Meeting
			Japanese	Philippine	
4th	January 22, 2003	Sulo Hotel, Quezon City	12	15	**Minutes of Discussions (Mid-term Evaluation Team)** 1. Recommendation on holding an International Seminar to extend the outputs of the project, there is a comment from Mr. Nakagaki, RR of JICA Philippine office that the project should organize domestic seminars first to present these outputs. In response, there are comments from other participants and finally, it is summarized that the project might start preparing for it. 2. There is a discussion on clarification in measuring AI conception rate. As an international parameter, a straw based rate is adapted than an animal served rate, and the project will follow the straw based rate considering the international seminar. 3. There is a discussion on the relationship between the project and UNAIP. As a result, the project has no direct relationship with the UNAIP, but the activities of the project i.e. providing good quality semen, monitoring the AI technicians in the area identified by the project would be a good contribution to the UNAIP. 4. To improve the condition of overstocking at the PCC and NESF to prevent a shortage of forage and feeds, both directors acknowledged and have committed to address the issue immediately. 5. To maintain equipment provided by the JICA in good conditions, a system should be established and sufficient funds should be provided by both the PCC and NESF is recommended, and this is committed by the both agencies. 6. In WB, PCC, model farmers have identified, but it is difficult for the NESF to do that because of no connection with this line, limited manpower and budgetary resources. 7. The comments in the attachment revised as the JCC has made certain comments and suggestions on the report presented by the joint evaluation committee and that it has assured to take necessary measurements to implement the project successfully and achieve the project purpose in the remaining two years, and this was also reflected in the minutes of the meeting of the 4th JCC meeting.
5th	April 14, 2003	Sulo Hotel, Quezon City	6	18	**Project's Mid-year Accomplishment Report/Revision of PDM/New PO and APO** 1. There is a report from Dr. Cruz about the AI performance at the PCC that he referred the recommendation from Dr. Kanai, short-term expert for improving this with utilizing vasectomized bulls in estrus detection.

Summary of Discussions in Joint Coordinating Committee (JCC) Meetings

Time	Date Conducted	Venue	Number of Participants		Summary of Meeting
			Japanese	Philippine	
5th	April 14, 2003	Sulo Hotel, Quezon City	6	18	2. Also two cases of chin-ball bulls provided by the project for estrus detection is introduced. To pursue a strict program on selection and culling and replacement of old animals recommended by the experts makes the mating design revised, from the original plan of the Contemporary Approach to Continuous Mating, which means breeding will be conducted through out the year. 3. Commented by the expert on utilization of the result from the laboratory analysis is important to improve techniques in feeding, milking and meat production. 4. Improvement of facilities at the PCC is introduced, which is provided by the project through the GMA-Livestock fund. 5. A big improvement at the NESF is introduced that the silage production of 130 tons is carried out and an increase in hectare of the improvement grasses from 120 to 190 hectares makes to increase in forage production from 648 tons to 751 tons. A new expert on Forage Production will be assigned on April 20 to help area for grazing and silage production increase to meet the animal requirements. 6. A semen motility rate has attained 30% at post thawing at the Digdig Ranch and in preparation for semen mass production provision of equipment such as straw printing machine and spectrophotometer is available. 7. In revised PDM, 1,500//head/year on WB as a target of semen mass production is indicated for the team to be cleared. 8. A conception rate of the AI should be indicated both the No. of straws and animal served as agreed in the JCC meeting before. 9. It is required that the project team should review very well the baseline information and figure not to encounter problems during the terminal evaluation. 10. From the next JCC Meeting just one side of the Philippine or Japanese reports to the meeting in incorporating the both sides reports to understand well the project. 11. BAI will look into the possibility of hiring either Ms. Diosamia Mallari or Ms. Cecille Onia into permanent status.

Summary of Discussions in Joint Coordinating Committee (JCC) Meetings

Time	Date Conducted	Venue	Number of Participants		Summary of Meeting
			Japanese	Philippine	
6th	October 10, 2003	Sulo Hotel, Quezon City	11	21	**Mid-year Accomplishment/Progress of Activities and Project Inputs/Discussion and Review on the Summary and Agreement in the 5th JCC Meeting and its Implementation** 1. Recommended by the experts that understanding the tight budgetary situation on the Government of the Philippines (GOP), but the payment of the salaries for the job orders is requested to be given a priority. 2. The experts recommended the Philippine side to take much initiative of the project for the remaining period in promoting the accomplishment to the public. 3. Reviewing the indicator of the AI conception rate in the revised PDM, in the manner of the animals served is still mentioned, but as the 5th JCC meeting agreed to maintain it for also no. of straw it should be indicated. 4. There were reports from both the PCC and NESF on data collection and its recording system, the project has established very organized system in improving Sire and Dam Selection (SDS). 5. The PCC has started to extend the weaning age of the calves referring Bulgaria's case to improve the growth performance. 6. There is an inquiry on possibility of doing cost analysis, cost of producing calves with implication in terms of the total productivity of the cow, and this is committed to be done. 7. New varieties of forage and legumes that can adopt on the soil and climatic conditions of the NESF are introduced by the expert.
7th	April 16, 2004	Sulo Hotel, Quezon City	7	13	**Mid-year Accomplishment/Progress of Activities and Project Inputs/Discussion on the issues and recommendations to be contributed for the smooth implementation and sustainability of the remaining period of the project** 1. Recommended by the experts that concerning the sustainability of the project implementation, assigning of proper counterparts, allocation of operational cost and cost for equipment maintenance are much needed.

Summary of Discussions in Joint Coordinating Committee (JCC) Meetings

Time	Date Conducted	Venue	Number of Participants		Summary of Meeting
			Japanese	Philippine	
7th	April 16, 2004	Sulo Hotel, Quezon City	7	13	2. There is an inquiry on the technology introduced and the standard of the ranking in bulls and cows. It is more on changes or improvement on management aspect like intensive selection of high performance cow and culling out of none performers which contributes a lot in the over all performance of the herd for the PCC, and on the selection of the animals, which is based on the growth rate, daily gain and evaluation, and analysis of data that have been collecting and of course proper and accurate recording. About the standard equation the 305 days milk record is considered as the standard lactation yield. 3. Several inquire raised about the sustainability of the farm in terms of feed resources both at the PCC and NESF. At the NESF they will focus more on the rotational grazing management to utilize efficiently the forage-pasture area whereas the PCC has a plan to intensify the selection and culling to reduce the herd size enough to be supported by the available pasture rather than acquire more land that would require an additional fund and which in more difficult. 4. A report form the PCC on the AI conception rate for WB for year 2003, per head and per straw were 39.7% and 16.3% improved from 12.6 % and 6.4 % in year 2002. For BC from the NESF 49.3 % to 73.6% at per head of significant improvement observed. 5. For Provincial Veterinarian Office (PVO) on the BC development, the BAI through the NESF, the project and the Nueva Ecija Provincial Government through the PVO comes up with the small hold Beef Cattle Project entitled; "Tulong Pangkabuhayan Bakahan Para sa Novo Ecijanos" that aims to improve the economic condition of at least 300 recipient farmers through the production of the beef cattle and to increase the number in selected municipalities. 6. A new set of the monitoring sheets are introduced for the comments from the experts and counterparts to review what the project has achieved easier and clearer. 7. There is a request from the Philippine side on the successor of Dr. Saito, long-term expert on AI that the replacement will be very much needed and be assigned three months before Dr. Saito leaves to turn over the responsibility which covers wide area in the project smoothly. 8. There is an issue pointed out by the JICA office on the sustainability of the project after its termination in terms of budget allocation as included the recommendations from the experts in the project. In response to this point, the Philippine side will try to make the best effort towards the end of the project and also for its goal.

Summary of Discussions in Joint Coordinating Committee (JCC) Meetings

Time	Date Conducted	Venue	Number of Participants		Summary of Meeting
			Japanese	Philippine	
8th	October 08, 2004	Sulo Hotel, Quezon City	11	22	**Mid-year Accomplishment/Progress of Activities and Project Inputs/Discussion on the issues and recommendations to be contributed for the smooth implementation and sustainability of the remaining period of the project** 1. As the same recommendations as last 7th JCC meeting comes up from the experts for this time. 2. There is an inquiry on the technologies that are already developed by the project to be disseminated. In response, some techniques such as an increase of the birth weight of calves by proper selection and early weaning (60 days) by providing calf starter and forage at the same time as early as one week of age have contributed to dam longer days of milking period therefore increasing milk production for WB in PCC. And also formulated ration especially makes for the lactating animals through the combined effort from the SDS and the Feeding and Management (FM) is another technology that resulted to increase the milk production. For BC in NESF raising superior cattle without feeding concentrates is a very good accomplishment provided that the farm has good pasture with well management. 3. There is a report on SDS that seven (7) bulls passed evaluation out of 12 selected from the first and second mating for the Direct Performance Test (DPT), and four (4) out of seven passed the semen quality evaluation. For the third mating, five (5) bulls are selected for the DPT last June and seven (7) will be selected form the fourth mating that will be in December. 4. DPT for bulls from the first and second mating are already finished and the selection of the candidate bulls for DPT from the third mating will be in December. Those bulls that have not passed the DPT will be distributed for Bull Loan Program to different areas in Luzon. 5. Forage area is being improved by leveling the area and planted of Napier grasses. For forage conservation, urea treated rice straw, silage making, hay making and baled rice straw stacking are used. Considering the PDM, the number of the trained technicians and farmers, 14 technicians and 26 farmers out of 50 technicians as targeted are already trained and more training programs have already scheduled and also for a monitoring of the trained participants. Manuals are still in progress of preparing. 6. There is an inquiry on the technical aspects in selecting AI technicians. In response, they are selected based from their educational background and trained through the one -month training as well as the follow-up program conducted by the PCC and project. Most of them are college graduates with the degree of the bachelor of science in agriculture major in animal science. After the training, the PCC and project support them with Liquid Nitrogen (LN2) tanks, AI guns, frozen semen, liquid nitrogen, etc.

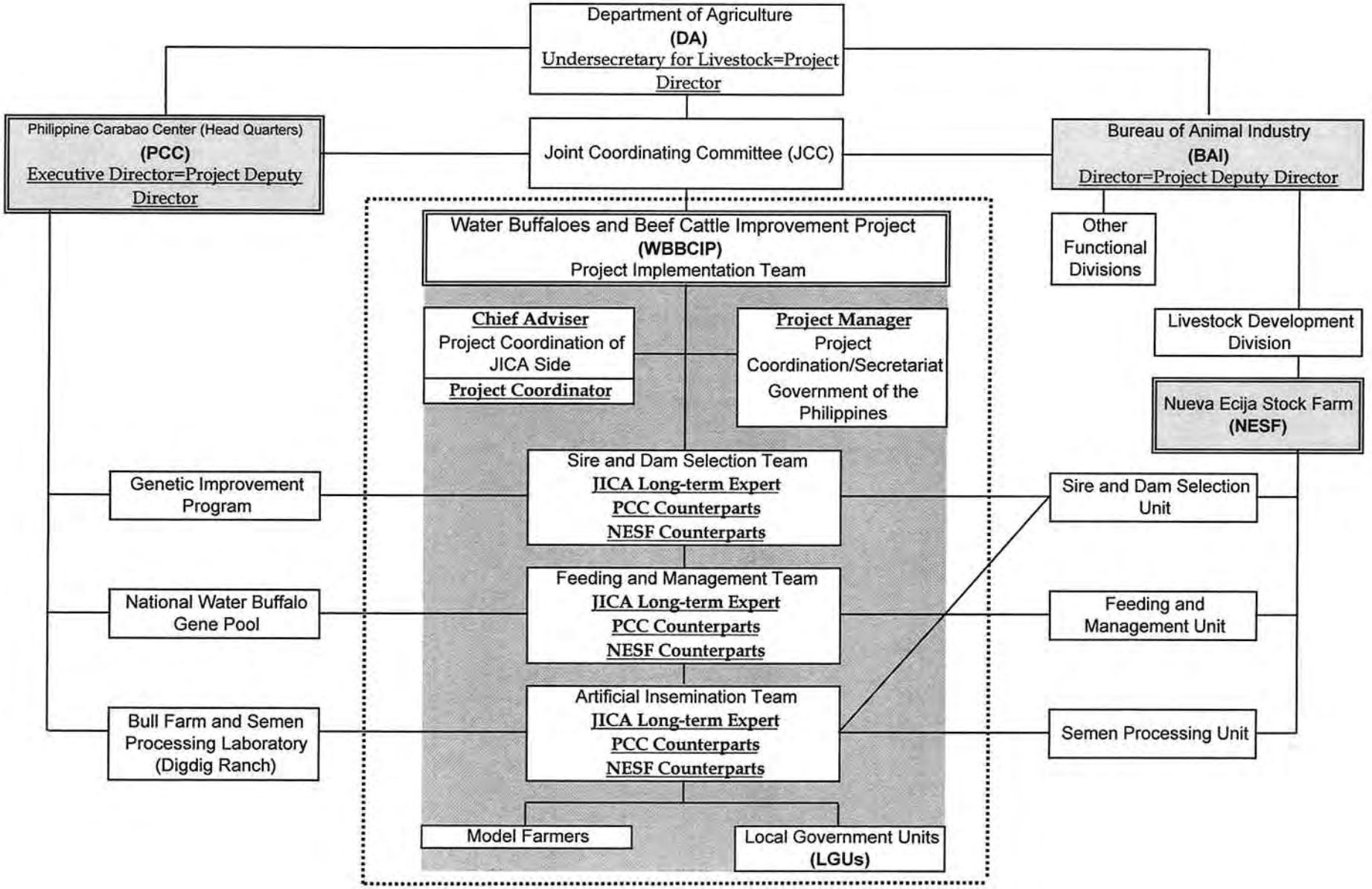
Summary of Discussions in Joint Coordinating Committee (JCC) Meetings

Time	Date Conducted	Venue	Number of Participants		Summary of Meeting
			Japanese	Philippine	
8th	October 08, 2004	Sulo Hotel, Quezon City	11	22	7. Clarifying the village-based AI technicians and their utilization, there are two reasons to establish this scheme that firstly they can access to the farmers at anytime to deliver the AI services when the farmers need. Secondary the government is trying to reduce the cost and subsidies to those LGU technicians. Therefore, they are more convenient to meet the farmers' demands, and we should encourage the farmers to utilize their own resources with little assistance from the government.
9th	June 08, 2005	Networld Hotel, Pasay City	14	34	**Minutes of Meeting (Final Evaluation Team)** 1. There are two points issued by the Joint Evaluation Team as a conclusion. Firstly, relevant techniques for improvement of WB and BC have been successfully developed through the project. Although there still remain a few indicators established in the PDM which have not been achieved yet, it is expected that they will be achieved without the Japanese assistance since the necessary techniques together with the facilities and equipment have been transferred to the Philippine counterparts. Secondary, based on the abovementioned achievement, it is conclude that the project will be completed on October 1, 2005 as planned. 2. There are also mainly two points issued on the recommendations by the team as follows: 1. Items to implement during the remaining project period. (1) The project should fast-track the implementation of the remaining activities. (2) The project should develop an action plan to ensure that the gains derived from the project are sustained and optimized. 2. Items to implement after the project period. (1) The Government of the Philippines should ensure that the resources needed to sustain the gains achieved under the project would be made available. (2) The PCC and BAI should continue the activities initiated by the project. (3) The PCC and BAI, in collaboration with the LGUs and other relevant institutions, should disseminate the technologies learned from the project to the centers/stations, technicians and farmers. (4) The PCC and NESF should strengthen their income-generation and utilization to subsidize operations. (5) The BAI should assign additional staff for the production of forage and other feed resources at NESF. (6) The PVO should establish a system whereby AI data are gathered, analyzed and reported systematically.

Summary of Discussions in Joint Coordinating Committee (JCC) Meetings

Time	Date Conducted	Venue	Number of Participants		Summary of Meeting
			Japanese	Philippine	
9th	June 08, 2005	Networld Hotel, Pasay City	14	34	3. There are four-lesson-learned commented by the team as follows: 1. The establishment of close linkage with LGUs and farmers organizations has facilitated the implementation of the project. 2. For projects involving large ruminants, the time schedule to achieve the indicators should be carefully planned. 3. Some indicators of the PDM are not clear enough to establish a common interpretation. This caused some difficulty in evaluating the achievement of the project. The indicators should be clearly defined. 4. Needs assessment should be undertaken prior to the conduct of training to ensure the appropriateness of technologies to be promoted the the farmers.
10th	September 27, 2005	Intercontinental Hotel, Makati City	8 (expected)	27 (expected)	**Agenda** 1. Accomplishment Report of Each Section 2. Action Plan for the Sustainability of the Project Activities by the Philippine Side 3. Miscellaneous

Water Buffaloes and Beef Cattle Improvement Project (WBBCIP)
Organizational Structure



RECORDS OF THE MINUTES

	Type of Mission	Type of Document & Date Signed	Signer (Japan Side)	Signer (Philippine Side)
1.	Preliminary Study Team 事前調査団 (October 20 - 30, 1999)	The Minutes of Discussion October 28, 1999 (平成11年10月28日)	Mr. Toyoharu Fujioka 藤岡　豊陽	Mr. Cesar M. Drilon, Jr. Undersecretary, Livestock & Fisheries, Department of Agriculture Dr. Libertado C. Cruz Executive Director, Philippine Carabao Center Mr. Teodoro A. Abilay Director IV, Bureau of Animal Industry, Department of Agriculture
2.	The Japanese Implementation Study Team 実施協議調査団 (July 3 - 13, 2000)	The Record of Discussion July 12, 2000 (平成12年 7月12日)	Mr. Tadashi Matsukawa 松川　正	Mr. Cesar M. Drilon, Jr. Undersecretary, Livestock & Fisheries, Department of Agriculture Dr. Libertado C. Cruz Executive Director, Philippine Carabao Center Mr. Teodoro A. Abilay Director IV, Bureau of Animal Industry, Department of Agriculture

RECORDS OF THE MINUTES

	Type of Mission	Type of Document & Date Signed	Signer (Japan Side)	Signer (Philippine Side)
3.	The Japanese Project Consultation Team 運営調査指導団 (July 22 - August 3, 2001)	The Minutes of Understanding August 1, 2001 (平成13年 8月 1日)	Mr. Osamu Hirokawa 廣川　治	Mr. Cesar M. Drilon, Jr. Undersecretary, Livestock & Fisheries, Department of Agriculture Dr. Libertado C. Cruz Executive Director, Philippine Carabao Center Mr. Teodoro A. Abilay Director IV, Bureau of Animal Industry, Department of Agriculture
4.	The Japanese Mid-term Evaluation Team 運営指導中間評価団 (January 13 - 24, 2003)	The Joint Mid-term Evaluation Report 合同中間評価報告書 January 22, 2003 (平成15年 1月22日)	Mr. Hidetaka Funo 布野　秀隆	Ms. Zenaida M. Villegas Division Chief, Project Packaging Resource Mobilization Division, Project Development Service, Department of Agriculture
5.		The Minutes of Discussion January 22, 2003 (平成15年 1月22日)	Mr. Hidetaka Funo 布野　秀隆	Mr. Cesar M. Drilon, Jr. Undersecretary, Livestock & Fisheries, Department of Agriculture Dr. Libertado C. Cruz Executive Director, Philippine Carabao Center Dr. Jose Q. Molina Director, Bureau of Animal Industry, Department of Agriculture

RECORDS OF THE MINUTES

	Type of Mission	Type of Document & Date Signed	Signer (Japan Side)	Signer (Philippine Side)
6.	The Joint Terminal Evaluation Team 最終評価調査団 (May 24 - June 9)	The Joint Terminal Evaluation Report 最終評価報告書 June 7, 2005 (平成17年 6月 7日)	Mr. Takeaki Sato 佐藤 武明	Ms. Zenaida M. Villegas Officer-in-Charge, Project Development Service, Department of Agriculture
		The Minutes of Meeting June 8, 2005 (平成17年 6月8日)	Mr. Takeaki Sato 佐藤 武明	Mr. Cesar M. Drilon, Jr. Undersecretary, Livestock & Fisheries, Department of Agriculture Dr. Libertado C. Cruz Executive Director, Philippine Carabao Center Dr. Jose Q. Molina Director, Bureau of Animal Industry, Department of Agriculture

ra sa karagdagang kaalaman, makipag-ugnayan sa:

WATER BUFFALOES AND BEEF CATTLE IMPROVEMENT PROJECT (WBBCIP)
Philippine Carabao Center
National Headquarters and Gene Pool
Science City of Muñoz, Nueva Ecija
Tel. No.: (044) 456-0731 to 34

NUEVA ECIJA STOCK FARM
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Visayas Avenue, Diliman, Quezon City
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BUREAU OF ANIMAL INDUSTRY

NUEVA ECIJA PROVINCIAL GOVERNMENT

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Urea-Molasses Mineral Block (UMMB)

Suplementong Pagkain Para sa Mga Kalabaw at Baka

PANIMULA

Ang UMMB o "Urea-Molasses Mineral Block" ay isang entong pagkain para sa mga kalabaw, baka, tupa o kambing. sang bloke na naglalaman ng pinaghalong urea, molasses o emento,darak na pino, at pinaghalong bitamina at mineral di-calcium phosphate at asin.

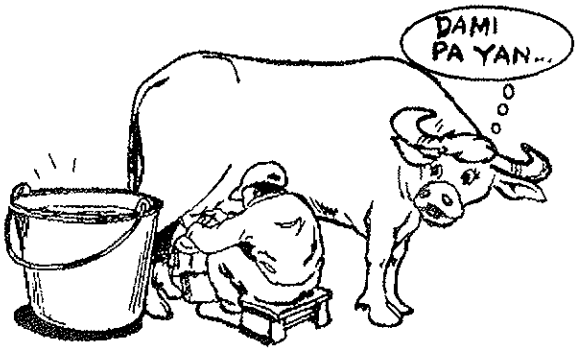
Ang pagpapakain ng UMMB ay itinuturing na isang kapaki-pang na paraan upang maibsan ang kawalan ng sapat at ansiyang pagkain para sa mga hayop lalo na sa panahon ng tag-

ALAGAHAN NG UMMB

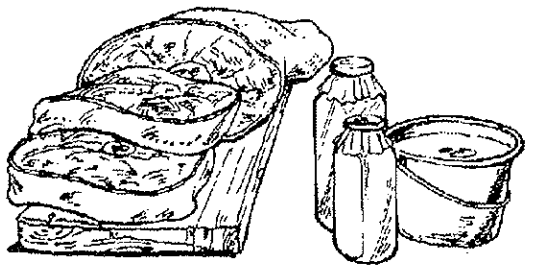
UMMB ay nagbibigay ng enerhiya o init, minerals at protina ailangan ng kalabaw at baka upang maparami ang ukuhang gatas mula dito.

Ang UMMB ay mayaman sa

1. Mineral - nagtataglay ang UMMB ng mga elemento kagaya ng Calcium, Phosphorus, Iodine, Zinc, Copper at iba pang mga mineral na hindi karaniwang nakukuha sa mga pagkaing damo. Ang mga mineral na ito ay mahalaga sa paglaki, "reproduction", at sa produksiyon ng gatas ng mga hayop.



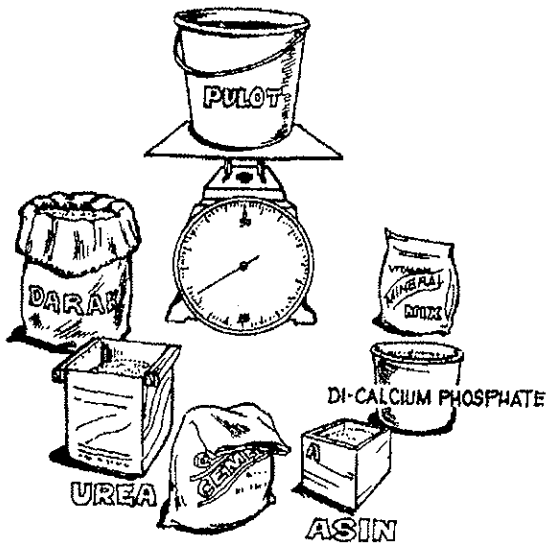
2. Protina - nakapagbibigay ang UMMB ng hanggang 50% na protinang kailangan ng hayop para sa paglaki. Ang taglay na protina ng UMMB ay nakatutulong din sa pagtaas ng produksiyon ng gatas ng mga kalabaw at baka.



3. Enerhiya - ang UMMB ay nagdudulot ng 45 % na enerhiya na kailangan ng mga hayop upang maitaas ang produksiyon ng gatas at karne.

N NG PAGGAWA NG UMMB

da at timbangin ang mga sangkap o "ingredients" ayon sa ang bahagi gaya ng mga sumusunod:

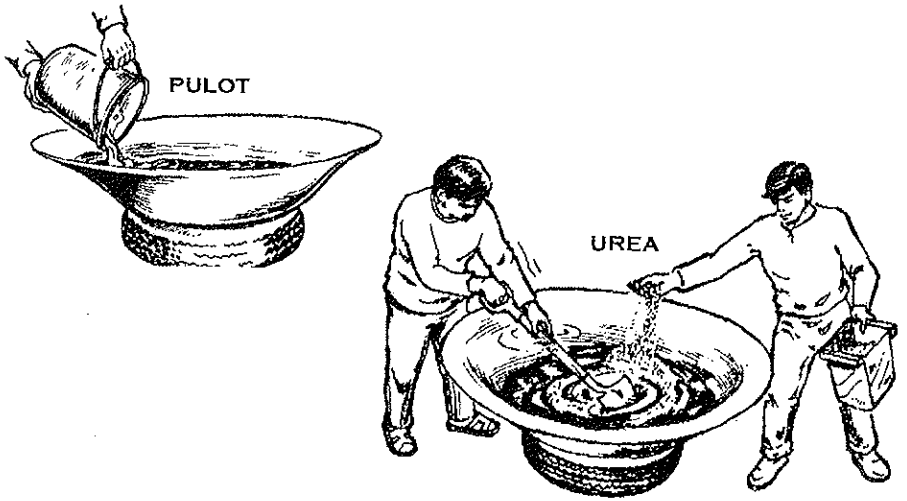


SANGKAP	DAMI (Kilo)	HALAGA (Piso)	
		Kada kilo	Kabuuan
Pulot (molasses)	38	5.80	220.40
Darak na pino	37	6.50	240.50
Urea (46% N)	10	17.00	170.00
Semento	10	2.80	28.50
Asin	1	3.00	3.00
Di-calcium phosphate	3	19.00	57.00
Vit-Mineral mix	1	90.00	90.00
Kabuuan	**100**		**808.90**

*batay sa presyo ng taong 2005 (**P8.10 kada kilo**)

2. Ihanda ang paghahaluan. Gamitin ang lalagyan na may maluwang na bibig kagaya ng kawa o talyase. Pwedeng gawing patungan ng talyase ang lumang gulong ng mga sasakyan.

3. Unang ibuhos ang pulot sa kawa. Unti-unting ibudbod ang urea habang hinahalo gamit ang kawayan, sagwan o pala.

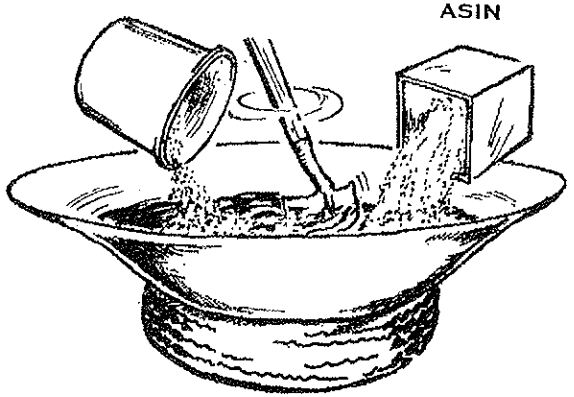


PAALALA: Tiyaking walang natitirang buo-buong urea.

agdag ang di-calcium phosphate at isunod ang asin habang atuloy na hinahalo.

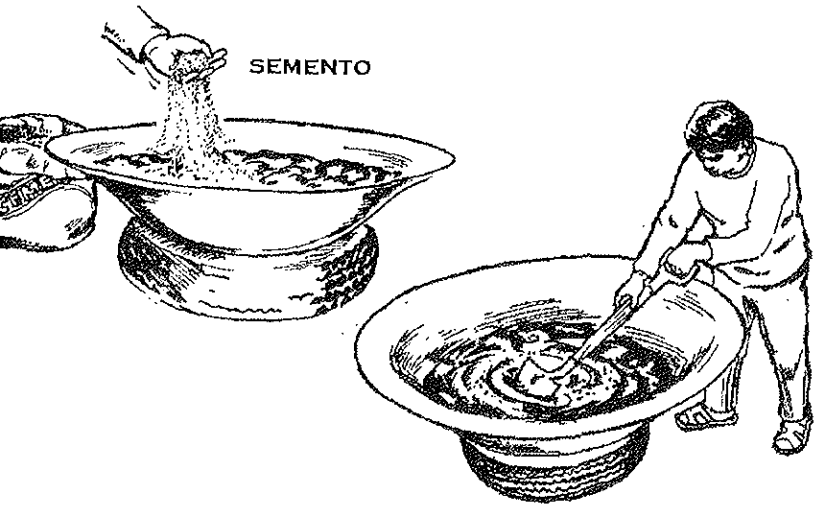
DI-CALCIUM PHOSPHATE

ASIN



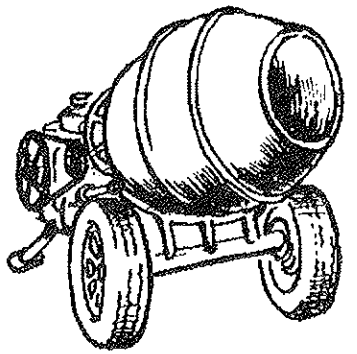
gkaraang maihalong mabuti ang di-calcium phoshate at asin, ma na rin ang semento. Ipagpagtuloy ang paghahalo.

SEMENTO



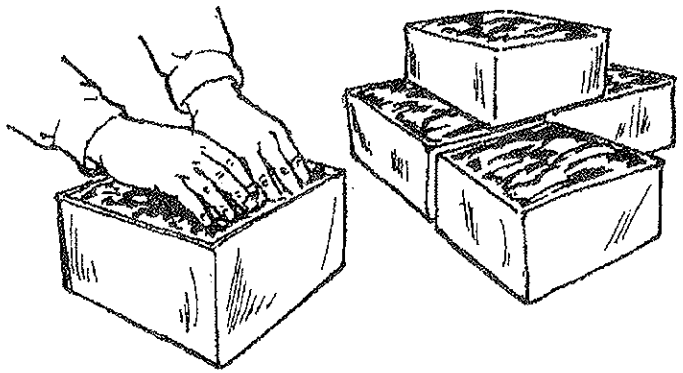
6. Panghuling ihalo ang darak. Sa pagkakataong ito ay higit na mainam na gamitin ang kamay o kaya ay panghalo ng semento (cement mixer) upang mahalong mabuti ang darak at iba pang mga sangkap.

DARAK

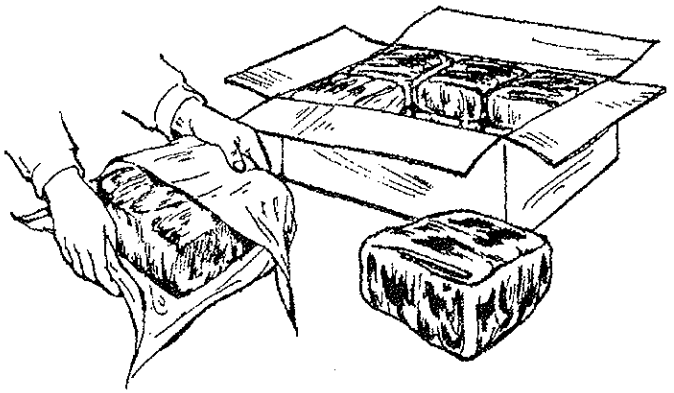


CEMENT MIXER

7. Ibuhos ang halo sa molde upang mabuo tulad ng mga bloke ang UMMB. Ang bawat bloke ay maaring tumimbang ng isa hanggang limang kilo.

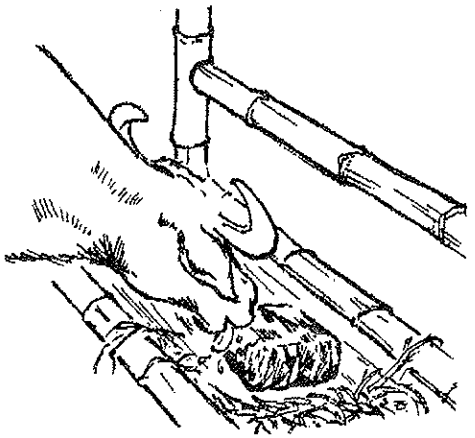


gay sa plastic ang bawat bloke at isalansan sa kahon. Maghintay
isa o dalawang linggo bago ibigay ang UMMB sa mga hayop.



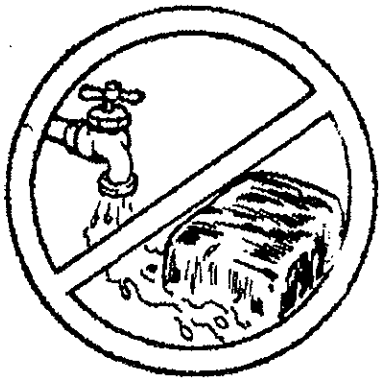
MA NG PAGPAPAKAIN

Ang UMMB ay kinakain ng mga hayop sa
magitan ng pagdila o "licking". Hindi problema o
ap ang pagtuturo sa pagpapakain dahil ang UMMB
sarap sa panlasa ng hayop. Ilagay sa labangan ang
B at hayaang dumila ang hayop hanggat makuha niya
angangailangan sa isang araw.

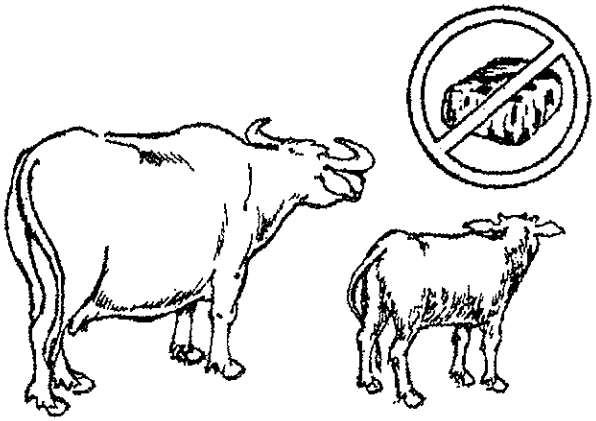


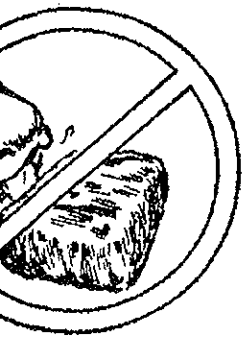
MGA BABALA SA PAGGAMIT NG UMMB -

1. Huwag pabayaang mabasa ang UMMB upang maiwasan ang paglambot ng bloke at ang sobrang pagkain ng hayop.



2. Huwag ibigay ang UMMB sa hayop (baka o kalabaw) na wala pang 6 na buwang gulang, at sa mga hayop na nasa huling tatlong buwan (last trimester) ng pagbubuntis.





3. Huwag pakainin ng UMMB ang mga hayop kapag gutom ang mga ito o kaya ay walang katabing tubig na inumin.

pag nakakita kayo ng sintomas ng pagkalason sa inyong mga gang hayop tulad ng paglalaway, hirap sa paghinga, kabag o laki ng tiyan, tumawag kaagad ng beterinaryo.

NG UMMB NA MAAARING KAININ NG HAYOP SA ARAW

HAYOP	TIMBANG (kilo)	DAMI NG NAKAKAING UMMB (gramo)
atasang kalabaw	400-500	300-500
aka	400-500	300-400
ambing	15-20	50-80
ipa	15-20	50-80

IBA PANG KATANGIAN NG UMMB

1. Nakatutulong sa pagpapagana ng pagkain
2. Napabibilis ang paglusaw ng mga hibla ng damo at iba pang kinakain ng mga kalabaw at baka.
3. Napananatili ang lakas at kalusugan ng hayop.

ra sa karagdagang kaalaman, makipag-ugnayan sa:

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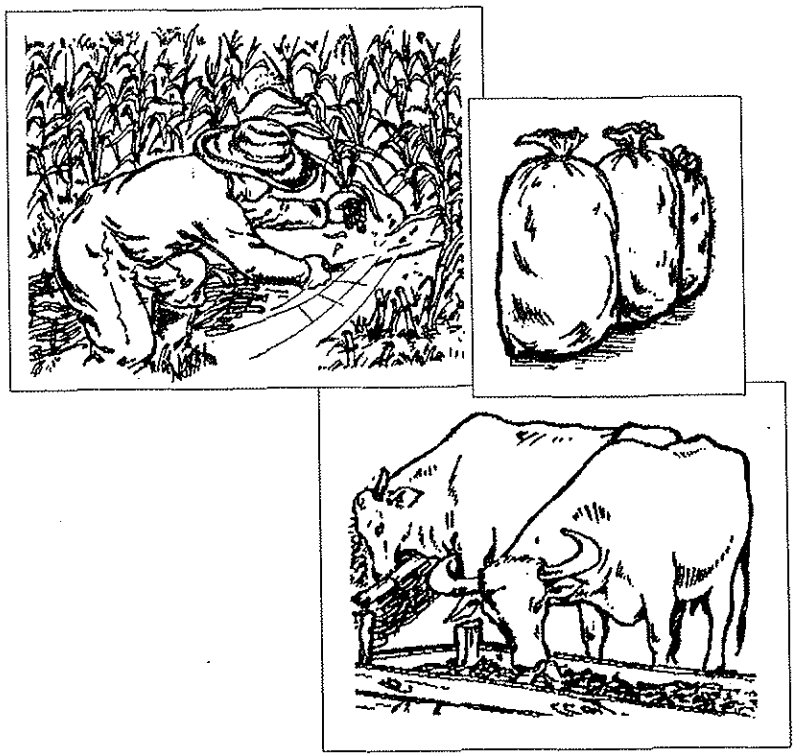
JICA JAPAN INTERNATIONAL COOPERATION AGENCY

Wastong Paggawa at Pagpapakain ng

BURONG DAMO (Silage)

para sa mga Kalabaw at Baka



Dagdag Kaalaman para sa mga
Magsasakang May Alagang Hayop

Authors:
Toshiaki Hidaka &
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Illustrations by:
Bayani S. Reyes

SILAGE TECHNOLOGY o Ang PAGGAWA NG BURONG DAMO

Ang pagpapakain ng burong damo o "kumpay"sa mga hayop gaya ng baka, kalabaw, kambing o tupa ay nag-umpisa pa noong mga unang panahon o " biblical times".

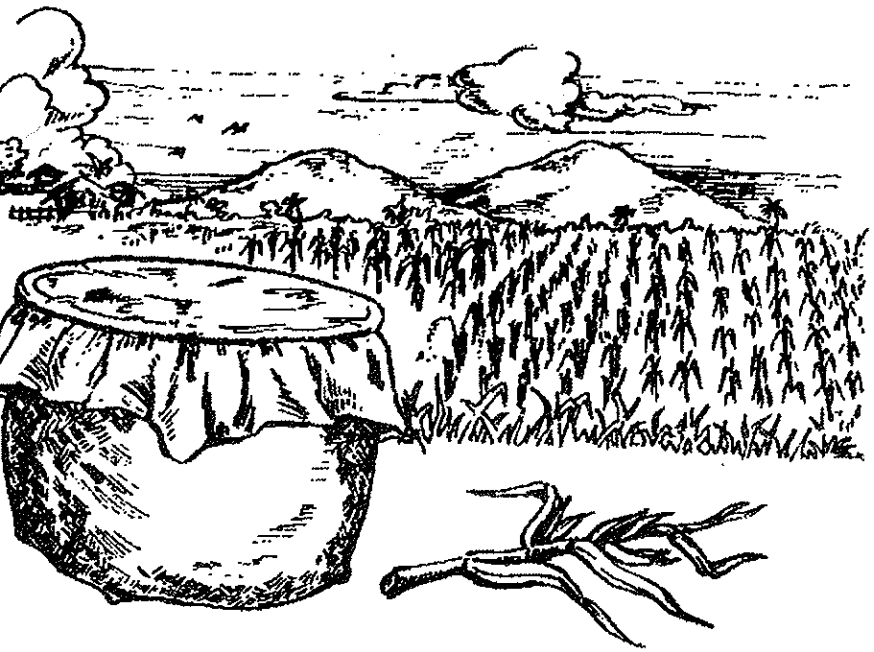
Sabi sa Isaiah 30:16-24

....[24] Ang mga baka at mga asnong nag-aararo ay kakain ng malinis at inasinang kumpay na inihagis sa kanila ng pala at kalaykay.

GA DAPAT MALAMAN TUNGKOL BURONG DAMO

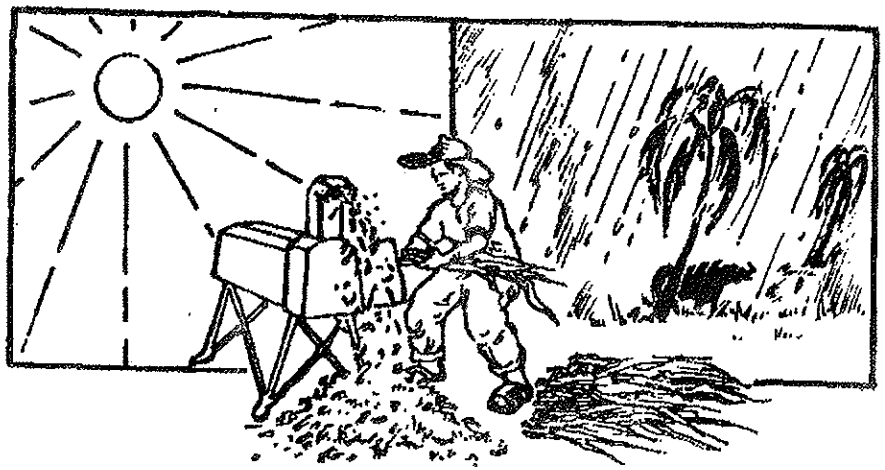
↱ Ang buro ay isang uri ng pagkain ng mga kalabaw o baka na inimbak sa selyadong lalagyan. Pagbuburo o "ensiling" ang tawag sa paggawa nito at ang tawag sa buruhan ay "silo".

↱ Ang lahat ng klase ng damo o mga tirang pinag-anihan sa bukid na pwedeng kainin ng hayop ay pwede ring buruhin.



ANG PAGGAWA NG BURONG DAMO AY:

- Hindi namimili ng takdang panahon.
- Maaaring gamitan ng makinarya.
- Maaaring gawin ng sino mang may alagang hayop.



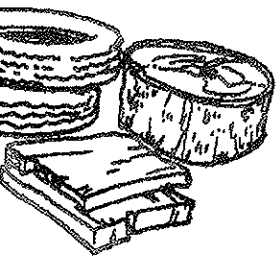
MGA PAGKAIN NG HAYOP NA PUWEDENG BURUHIN

1. Pagkaing mayaman sa enerhiya
   a. Damo: halimbawa nito ay mais, napier, paragrass, cogon, atbp.
   b. Bagaso o mga tirang pinag-anihan sa bukid gaya ng dayami, mais at tubo.
2. Mga pagkaing mayaman sa protina
   a. Legumbre: halimbawa nito ay Ipil-ipil, kakawate, kadios, centrosema, stylo atbp.)
   b. Mga pagkaing galing sa planta gaya ng spent grain, balat ng saging o pinya.

KAILANGAN SA PAGGAWA NG
NG DAMO

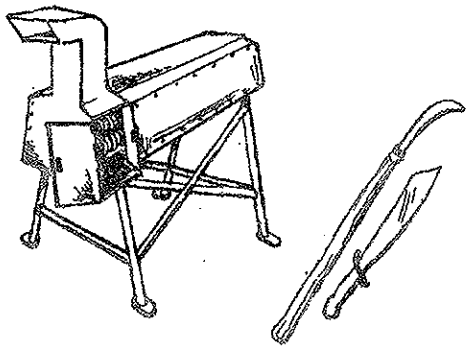
agyan ng buburuhing
mo (silo)

stik na pangtakip o
mbalot



ngdagan gaya ng gulong,
hoy at iba pang mabigat
bagay

4. Damong buburuhin na may sapat na tubig o "moisture content" na 65 hanggang 70%

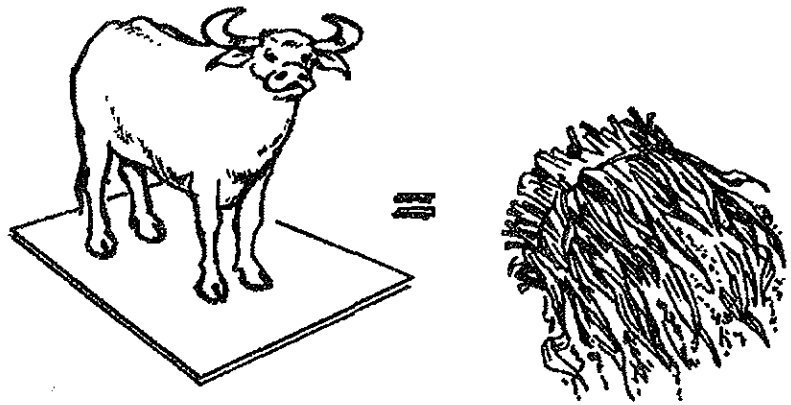


5. Panabas at pangtadtad ng damo (chopper)

6. Panghakot ng damo at mga kasamang gagawa ng buro

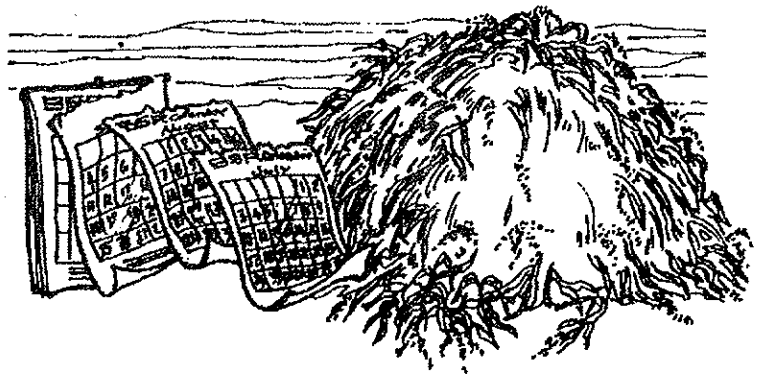
MGA PAMAMARAAN SA PAGGAWA-NG BURONG DAMO

1. Alamin ang dami ng damong buburuhin at kung kailan ito ipapakain.

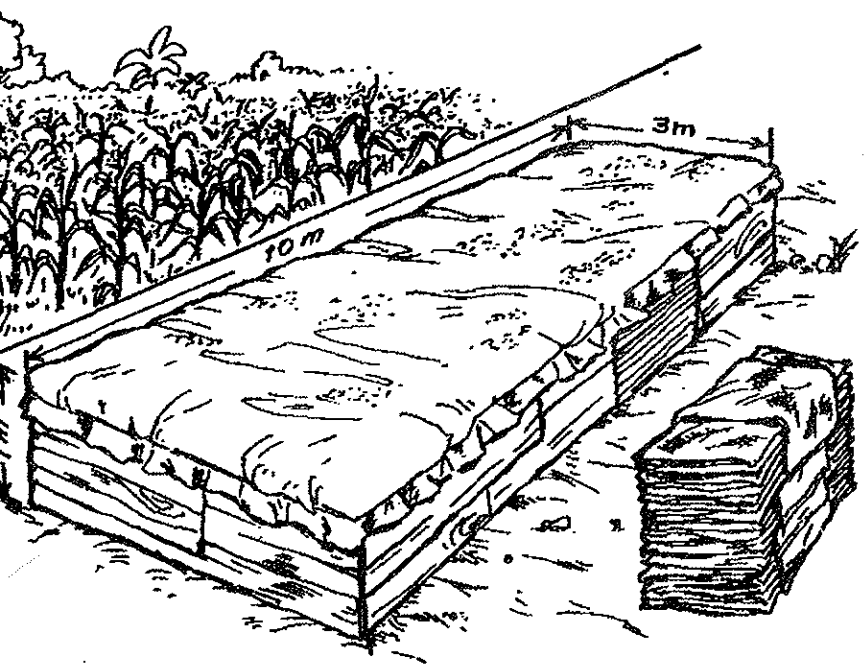


Halimbawa:

Timbang ng hayop: 500 kilo
Kailangang sariwang damo: 50 kilo bawat araw o (10 % ng timbang).



Tagal ng tag-araw: 6 buwan o 180 araw na pakain
Dami ng buburuhin =50 kilo damo x 180 araw = 9000 kilo



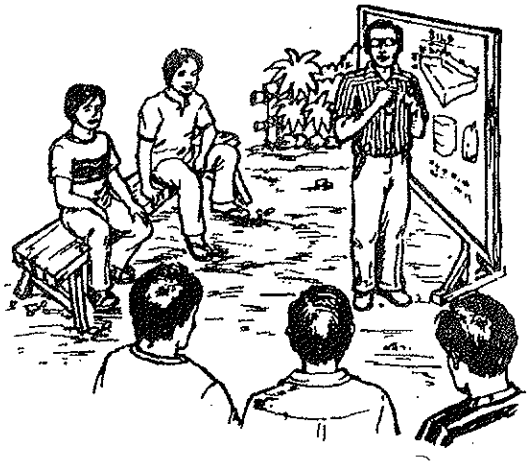
vang ng tataniman:kalahating ektarya (Mais)

at ng buruhan:
etro (taas) x 3 metro (lapad) X 10 metro (haba) = 30 metro kubiko

g sako ang gagamiting buruhan, ang kailangang ay
225 piraso (laminated o may plastik sa loob)

2. Ihanda ang lalagyan (silo), pangtadtad, plastik, pabigat, at iba pa.

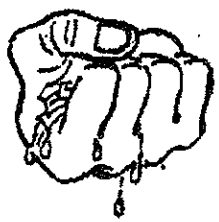
3. Bumuo ng isang grupong gagawa ng buro at pag-usapan kung kailan gagawin ang pagbuburo.



4. Anihin ang damo o mais (75 hanggang 85 araw) sa tamang gulang.

katin o tantyahin ang dami ng tubig o "moisture content"ng damo
s.

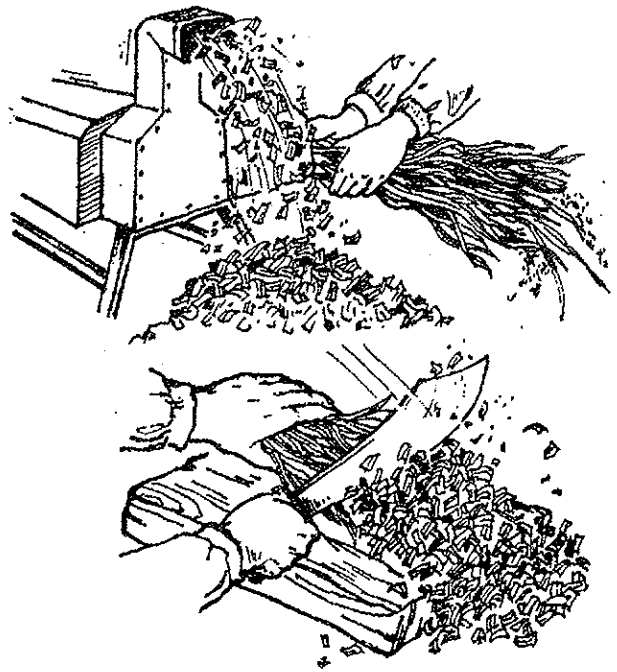
ghag kung kulang
65% ang taglay
na tubig



makatas kung
mahigit sa 70%
ang taglay
na tubig

makakabuo ng
bola kung tama
ang taglay
na tubig

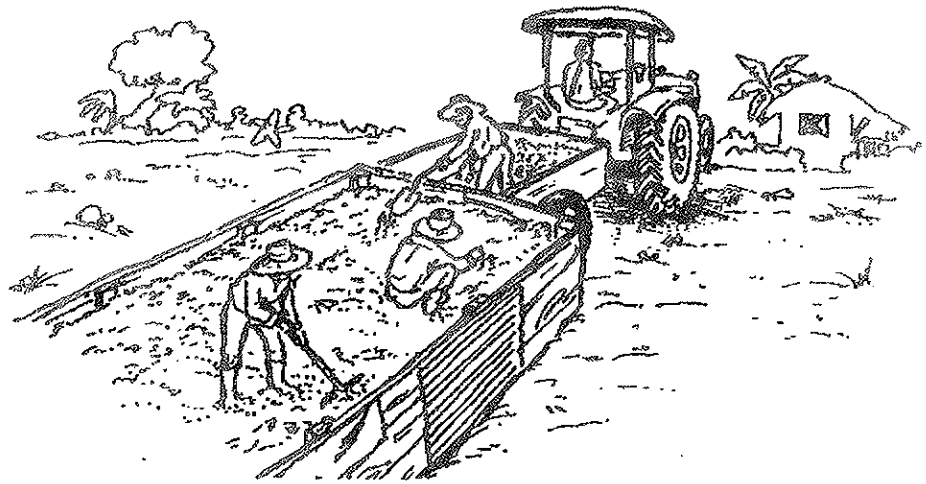
tarin ang damo ng 1 hanggang 2 sentimetro ang haba
nit ang itak o pangtadtad (*chopper*).
g napier ang gagamitin, ibilad o lantahin ng 1 hanggang 2
w bago tadtarin.



7. Punuin ng mabilis ang "silo" o buruhan.

a. Paggawa ng buro para sa maliit na kawan o
ilang hayop lang

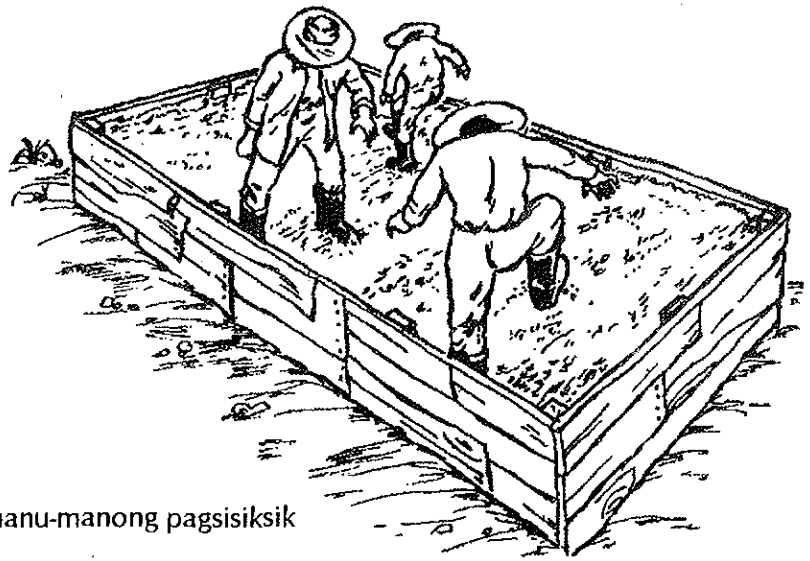
b. Paggawa ng buro na pangmaramihan



siking mabuti ang damo sa lalagyan upang maalis ang hangin.

a. Paggawa ng buro para sa maliit na kawan o ilang hayop lang

b. Paggawa ng buro na pangmaramihan

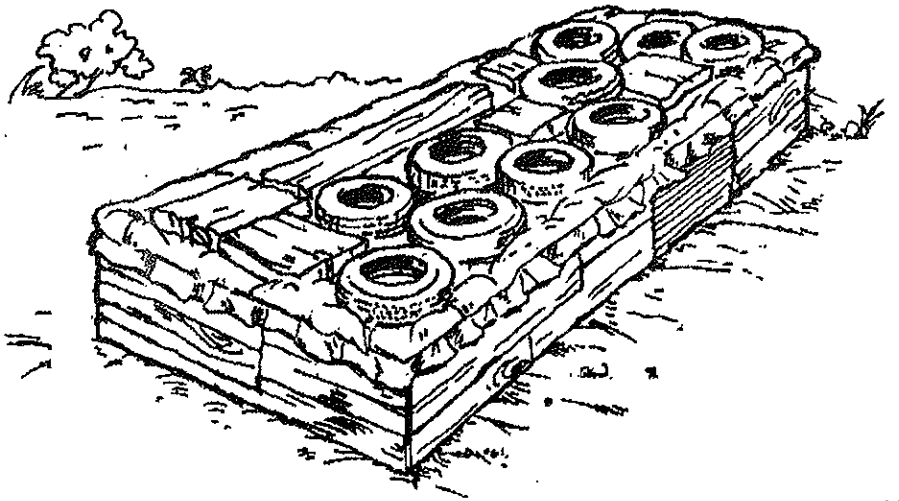


manu-manong pagsisiksik

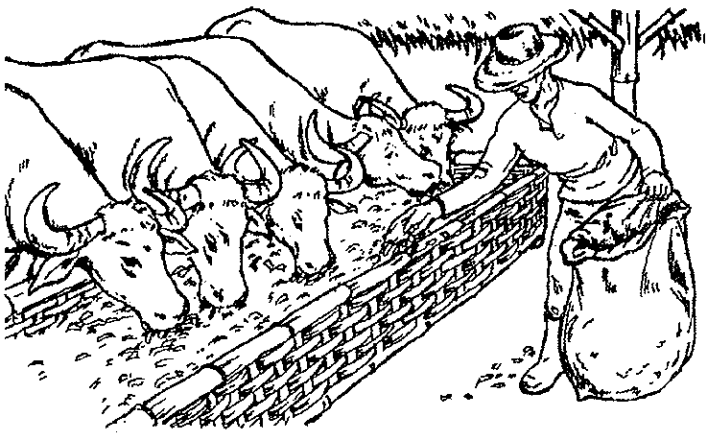
9. Takpan ng plastik ang silo at saraduhang mabuti ang mga lugar na pwedeng pasukan ng hangin o tubig ulan. Lagyan ng pabigat o dagan sa ibabaw.

a. Paggawa ng buro para sa maliit na kawan o ilang hayop lang

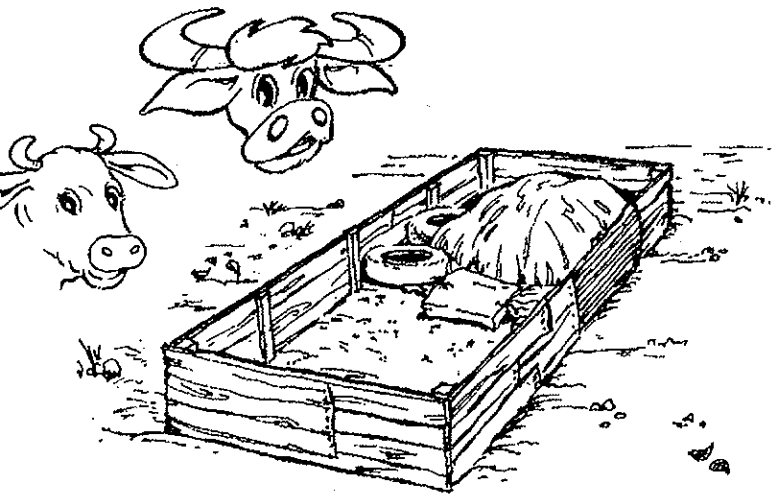
b. Paggawa ng buro na pangmaramihan



agkaraan ng isang buwan, maaari nang ipakain
ng buro sa hayop.



g binuksan ang buro, siguraduhing tuloy-tuloy ang
gpapakain hanggang sa ito ay maubos. Laging isauli
g takip ng buruhan pagkatapos kumuha ng buro.



PRODUKSYON NG BURONG MAIS

ITEM	Kailangan		Presyo
	Dami	Piraso	
A. Mga Gastusin			
1. Buto ng mais	1.5	Sako	P 3,750.00
2. Paghahanda ng taniman			
Pag-aararo	1 beses	MMD*	P2,200.00
Rustilyo	2 beses	MMD*	P4,400.00
Pagtutudling	1 beses	MMD*	P 1,500.00
3. Pagtatanim			
kontrata kada ektarya	4	MD**	P 2,000.00
4. Pagpapataba			
Triple 14 (complete)	4	sako	P3,200.00
Urea	4	sako	P3,400.00
Paggawa	2	MD**	P502.00
5. Pagpapatubig	4 beses		
Krudo & langis	80	litro	P1,908.40
Paggawa	4	MD**	P1,004.00
6. Pagbubusbos	1	MMD*	P1,400.00
7. Insektisidyo			
Pestisidyo	1	litro	P900.00
Herbisidyo	1	litro	P500.00
Paggawa	2	MD**	P502.00
8. Pag-aani/Paghakot	2	MMD*	P4,600.00
9. Pagbuburo			
Plastic sheet	10	Kilo	P850.00
Paggawa	6	MD**	P1,506.00
Pagsisiksik	1	MMD*	P500.00
Buruhan/Silo (bunker)	1	Piraso	P1,600.00
Kabuuan			P66,570.00
Dami ng Ani kada ektarya	49	tonelada	
B. **Presyo ng 1 kilo ng buro**			P1.56

* MMD - upa para sa makina at tao/manggagawa
** MD - upa para sa tao/manggagawa

RASYON NG BUNTIS NA KALABAW

(Huling Tatlong Buwan ng Pagbubuntis)

Timbang kilo	Kailangan		100% Burong mais kilo	Rasyon kada araw		Rasyon kada araw	
	% Timbang	kilo		Napier kilo (70%)	Darak kilo (30%)	Burong bagaso ng mais, kilo	Darak kilo
300	2.4	7.2	21.7	28.8	1.7	14.4	1.7
350	2.3	8.1	23.0	32.4	1.9	16.2	1.9
400	2.2	8.8	24.7	35.2	2.0	17.6	2.0
450	2.1	9.5	26.0	38.0	2.2	19.0	2.2
500	2.0	10.0	27.7	40.0	2.3	20.0	2.3

Wastong Paggawa at Pagpapakain ng

Urea-Treated Rice Straw (UTRS)

Para sa Mga Kalabaw at Baka

ra sa karagdagang kaalaman, makipag-ugnayan sa:

WATER BUFFALOES AND BEEF CATTLE IMPROVEMENT PROJECT (WBBCIP)
Philippine Carabao Center
National Headquarters and Gene Pool
Science City of Muñoz, Nueva Ecija
Tel. No.: (044) 456-0731 to 34

NUEVA ECIJA STOCK FARM
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Tel. No.: (02) 926-8842

ng proyekto ng:

PHILIPPINE CARABAO CENTER

BUREAU OF ANIMAL INDUSTRY

NUEVA ECIJA PROVINCIAL GOVERNMENT

JICA JAPAN INTERNATIONAL COOPERATION AGENCY

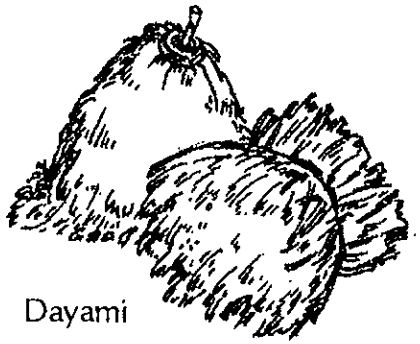
PANIMULA

Ang bansa ay mayroong tatlong (3) milyong ektaryang palayan.
ga palayang nabanggit ay nakapagbibigay ng apat at kalahating
g tonelada ng dayami bawat taon. Kung ang dayami ay
tin sa paggawa ng pataba, ito ay katumbas ng 66,000 sako ng
ung gagawing pagkain ng mga hayop, ang dayami ay
gbibigay ng 189,750 kilos na protina para sa mga kalabaw at

Ang dayami ay itinuturing na basura pagkatapos ng anihan sa
to ay karaniwang sinusunog ng mga magsasaka na nagdudulot
syon o pagkasira ng kapaligiran.

Upang maiwasan ang masamang dulot ng pagsusunog ng mga
ang tulong kaalamang ito ay isinagawa upang
nabangan ng hayop ang natitira pang sustansiya ng dayami sa
ito ay itapon o sunugin sa bukid.

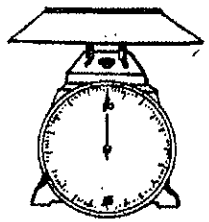
MGA KAILANGAN SA PAGGAWA NG UREA-TREATED RICE STRAW (UTRS)



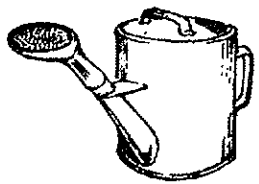
Dayami

Tubig

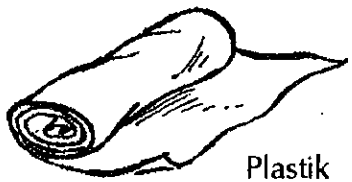
Urea



Timbangan



Rigador



Plastik

Pandagan na gulong
o kahoy

Buruhan o silo

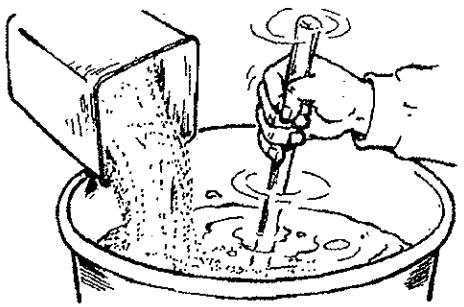
A SANGKAP SA PAGGAWA NG UTRS

SANGKAP	DAMI (kilo)
Dayami	100
Urea	4
Tubig	96

AAN NG PAGGAWA

mbangin ang mga kailangang sangkap.

sawin ang urea sa tubig.

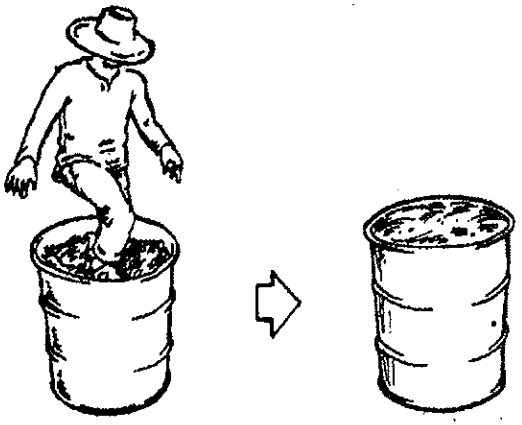


3. Isalansan ang dayami sa lalagyan o *silô*.

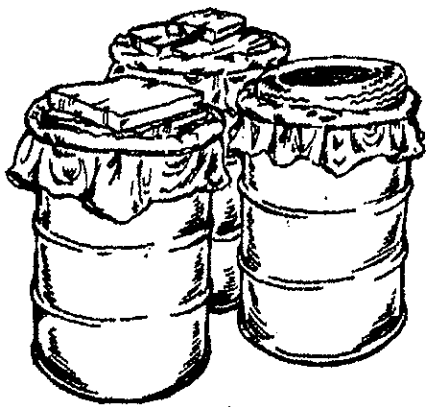
4. Idilig ang solusyon sa dayami. Kung walang rigador, maaaring ibabad ang dayami sa tubig na may urea sa loob ng limang minuto bago isalansan.

5. Sundin ang paraan mula 1- 4 hanggang mapuno ang lalagyan.

ksiking mabuti ang dayami hanggang mapuno ang lalagyan o
lo".



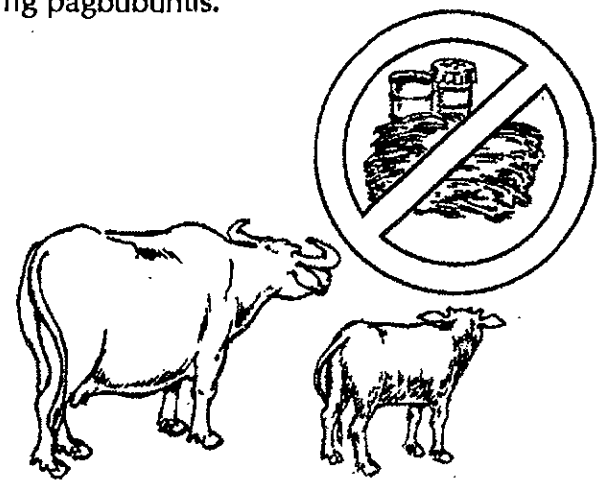
kpan ng plastik at lagyan ng pabigat sa ibabaw gaya ng gulong o
hoy.



8. Maaari nang ipakain ang UTRS sa kalabaw o baka pagkaraan ng dalawang buwan. Pasingawin ang UTS ng 30 minuto bago ibigay sa mga alagang hayop.

BABALA SA PAGGAMIT NG UTRS

Huwag ipakain ang UTRS sa mga alagang hayop (kalabaw o baka) na wala pang anim na buwang gulang, at sa mga hayop na nasa huling tatlong buwan ng pagbubuntis.

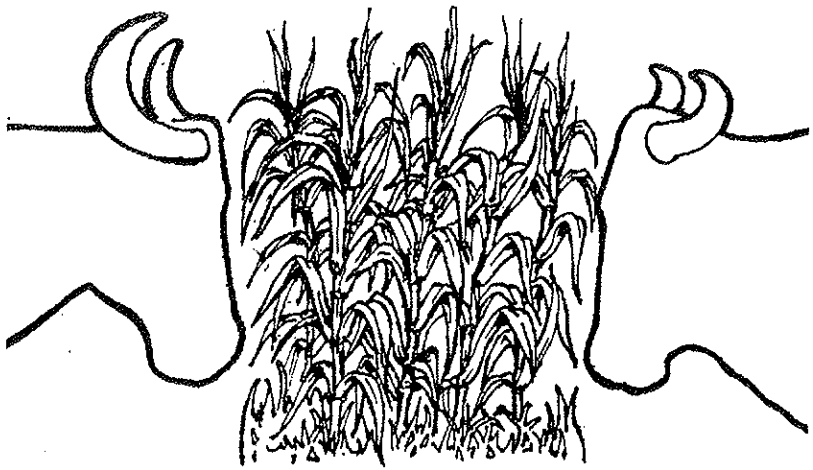


Wastong Pagtatanim at Pangangalaga ng

DAMONG NAPIER

(Napier Grass Production)

Para sa Mga Kalabaw at Baka



ra sa karagdagang kaalaman, makipag-ugnayan sa:

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ng proyekto ng:

PHILIPPINE CARABAO CENTER

BUREAU OF ANIMAL INDUSTRY

NUEVA ECIJA PROVINCIAL GOVERNMENT

JICA JAPAN INTERNATIONAL COOPERATION AGENCY

PANIMULA

Ang Napier ay isang uri ng damo na karaniwang ibinibigay
pagkain ng kalabaw at baka. Ito ay nakapagbibigay sa hayop
at na sustansiya gaya ng enerhiya, protina, bitamina at
l.

KATANGIAN NG DAMONG NAPIER

hawig ito ng tubo (*sugarcane*) na ang taas ay umaabot sa
lawa hanggang limang metro.

aari itong itanim sa lupang may magandang daluyan ng
ig (*well-drained*).

ay itinatanim sa pamamagitan ng "cuttings".

ay naaani sa loob ng maikling panahon (45 hanggang 55 na
w).

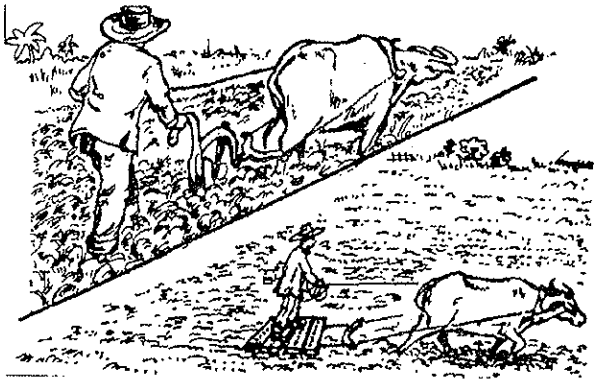
aaring umani ng 15 hanggang 40 tonelada mula sa isang
taryang taniman sa pagitan ng 45 hanggang 55 araw na
gpuputol.

HALAGANG IMPORMASYON

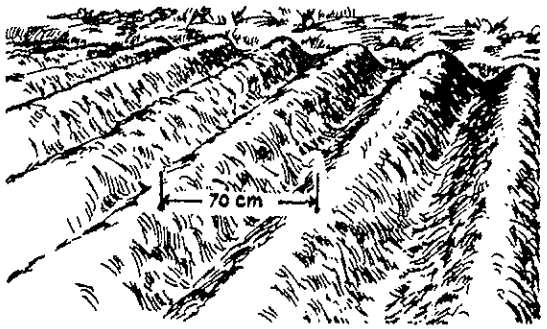
amin pong tanggapan ay namamahagi ng binhing Napier sa
nagnanais magtanim nito.

MGA PARAAN SA PAGTATANIM NG NAPIER

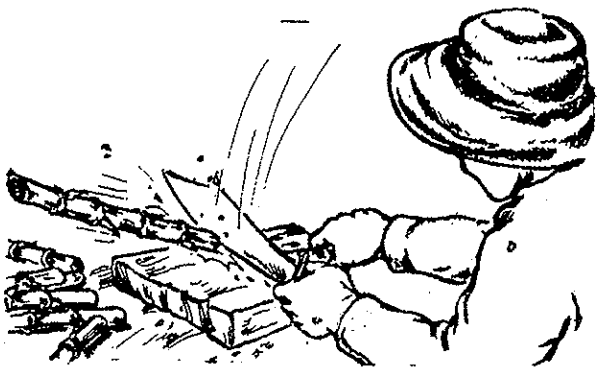
1. Araruhing minsan at suyurin ng dalawang beses ang lupang tatamnan.



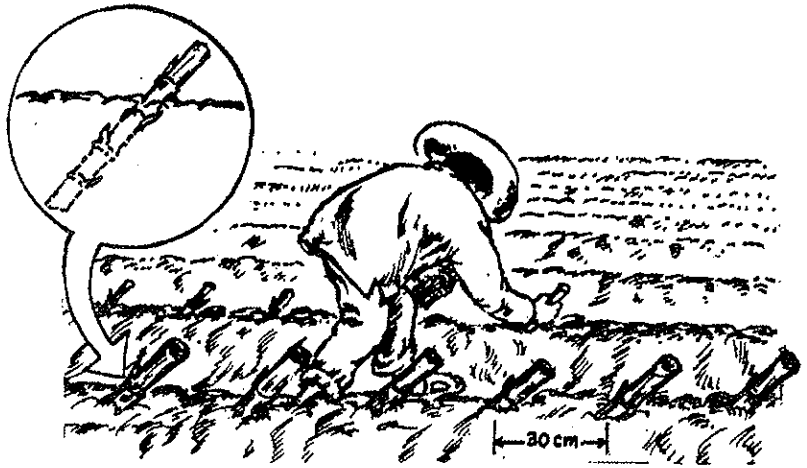
2. Tudlingan ang lupa ng may 70 hanggang 75 sentimetro ang pagitan.



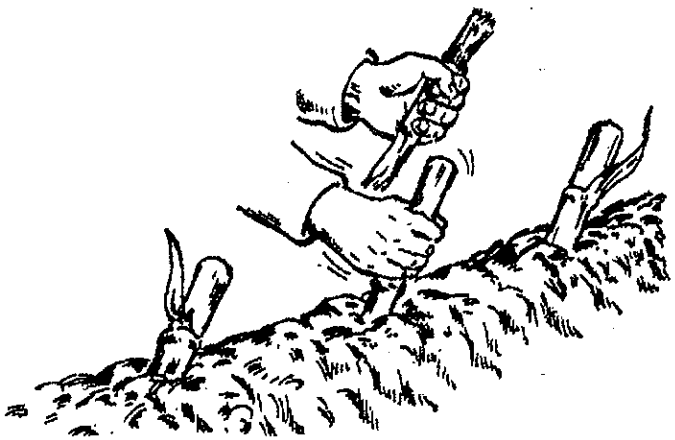
3. Maghanda ng pananim sa pamamagitan ng pagputol ng mga magulang na puno na may kasamang 3 hanggang 4 na mata o buko (*nodes*) nito.



. Itanim ang mga putol na Napier na bahagyang nakahilig (45 degrees) at may pagitan na 30 sentimetro bawat puno.



. Obserbahan ang pagsibol ng itinanim na puno at kung may mga namatay ay hulipan o palitan.



PANGANGALAGA NG BAGONG TANIM NA NAPIER

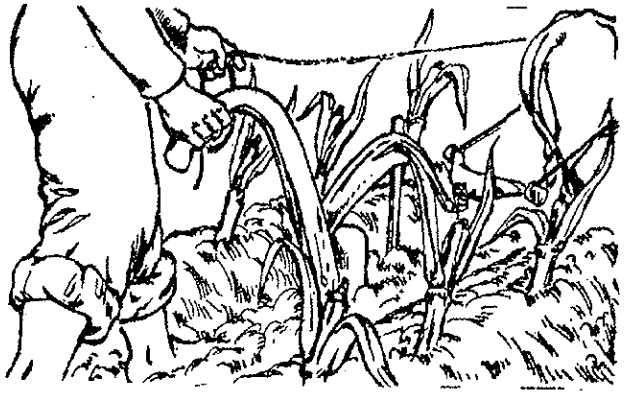
1. **Dalas ng pagpapatubig** - ang bagong tanim na Napier ay kailangang patubigan kung ang lupang tinamnan ay tuyo. Huwag magpatubig sa panahon ng tag-ulan, subalit sa panahon ng tag-araw, kailangang magpatubig ng 2 hanggang 3 beses bawat buwan.

2. **Pagpapataba** - ang Napier ay malakas sumipsip ng sustansiya ng lupa kaya kailangan ang regular na pagpapataba rito. Pagkatapos ng bawat pagputol o pag-aani (45 hanggang 55 araw) maglagay ng pataba o kaya ay dumi ng hayop.

Rekomendadong dami ng pataba bawat ektarya

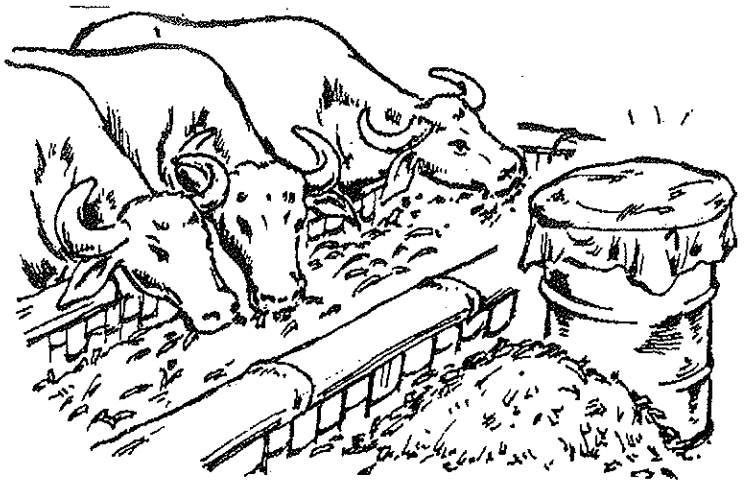
Sustansiya	Dami ng inaning Napier (kg/ha)	Sustansiyang nabawas sa lupa (kg/ha)	Kailangang Pataba pagkatapos mag-ani (bag/ha)
Nitrogen	18,000	324	2-3 bag
Phosphorus	18,000	22	1 bag
Potassium	18,000	144	1 bag

Pagbubungkal ng lupa sa pagitan ng tudling - kailangang magbungkal sa pagitan ng tudling ng Napier upang lumuwag ang lupa at mapabilis ang pagtubo at pagdami ng suwi nito. Ito ay ginagawa 1 – 2 beses sa isang taon.



Pag-aani - ang pag-aani ng Napier ay ginagawa 60 hanggang 90 araw matapos itong itanim. Pagkalipas nito, ang pagitan ng pag-aani o pagpuputol ay 45 hanggang 55 araw. Ang pag-aani ay puwedeng gamitan ng itak, grass cutter o kaya ay makina lalo na kung maluwang ang aanihin. Tiyaking may 15 - 20 sentimetrong matitira sa puno para sa panibagong pagsusuwi.

5. **Pagpapakain ng Napier sa hayop** - Ang tinabas na Napier ay maaaring ipakain ng sariwa. Maaari rin itong buruhin at ipakain sa tamang panahon. Mas mainam kung ang Napier ay natadtad muna upang mas marami ang makain ng hayop at mas mabilis ang pagkatunaw nito.



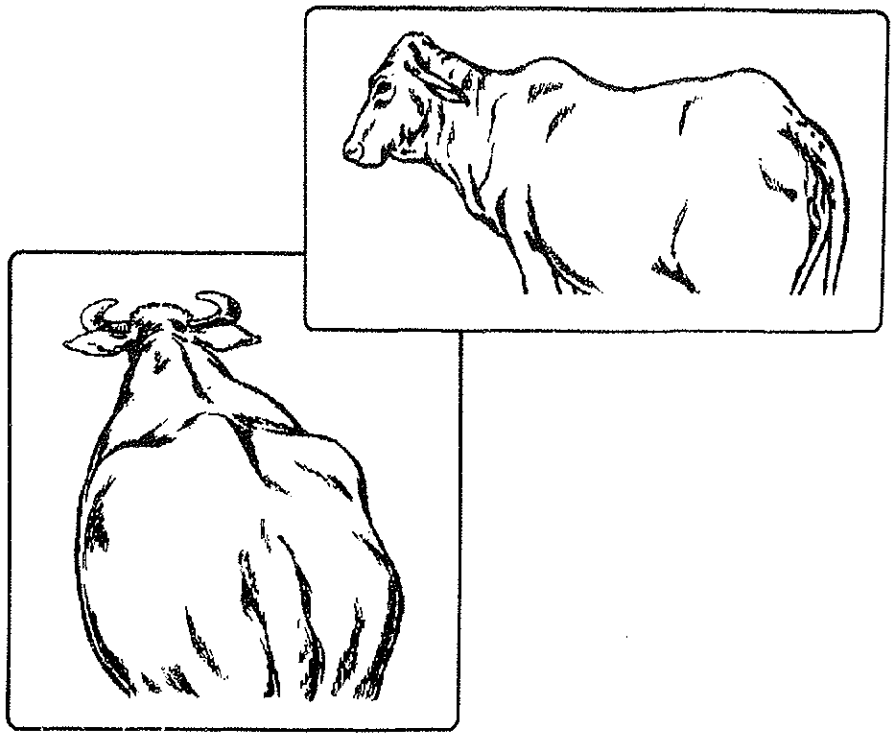
6. **Sustansiyang maibibigay ng Napier sa Kalabaw o Baka-**

Napier /edad (araw)	Tuyong parte (%)	Enerhiya (%)	Protina (%)	Ca (%)	Phosphorus (%)
21	16.6	61.4	15.1	-	-
42	20.3	58.6	9.8	-	-
56	22.0	55.0	9.5	0.42	0.39

PAALALA: Huwag pagpastulan ng hayop ang taniman ng Napier.

BODY CONDITION SCORING

in Dairy Buffaloes and Beef Cattle



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JICA JAPAN INTERNATIONAL COOPERATION AGENCY

BODY CONDITION SCORING IN BUFFALOES AND BEEF CATTLE

The nutritional status of buffaloes and beef cattle can be assessed by means of evaluating their body condition score (BCS). This technique provides information whether the animals raised at the farm are getting the right nutrition. The BCS also helps the farm manager in making appropriate actions in cases of nutritional deficiency at the farm.

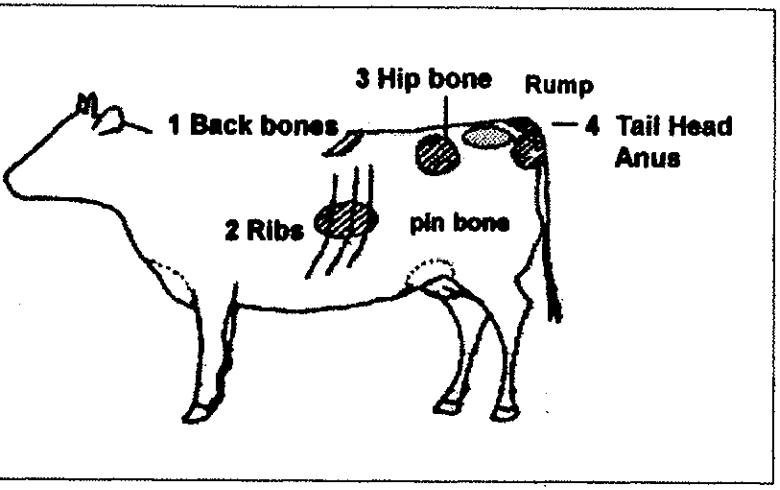
There are four methods in determining the nutritional condition of animals and these include the monitoring of the:

(1) Body Weight
(2) Ratio of body weight to body height
(3) Blood testing
(4) Body condition scoring (BCS)

The BCS is the simplest among the four methods of assessing the kind of feeding and management of animals in the field. On the other hand, the first three methods require more time and will need equipment to achieve good evaluation results.

In judging the animal, it is done by direct observation and palpation of some important parts of the body which include the following:

1. The backbone (thoracic vertebrae)
2. The ribs part (lumbar transverse processes)
3. The hip bone and pin bone (tuber coxae)
4. The base of tail head and rectum (anal area)



gure 1. The main four parts for judging

The appearance and palpable features of the four areas arts) reflect the accumulation and mobilization of body utrient reserves, mostly body fat. This is directly related to e nutritional status of the animal which depends on food take and utilization.

BCS EVALUATION IN WATER BUFFALOES (DAIRY BUFFALOES)

The BCS in buffaloes counts from 1 to 5.

Procedure for judging:

1. Stand behind and at the side of the cow and observe the main four parts of the body. While observing you can palpate each of the parts.

2. Observe the back bones: Are they clear or not? Palpate the end of spine, and judge: Are they sharp and skinny, or the spine are rounded and covered by fat?

3. Observe and palpate the ribs: Are they individually visible or covered by muscle or fat?

4. Observe and palpate hip bone and pin bone: Are the borders sharp or rounded and covered by fat?

5. Observe the area on either side of the tail head and anus: Is there cavity or filled?

Table 1 presents the summary of the four areas (parts) with their respective characteristics.

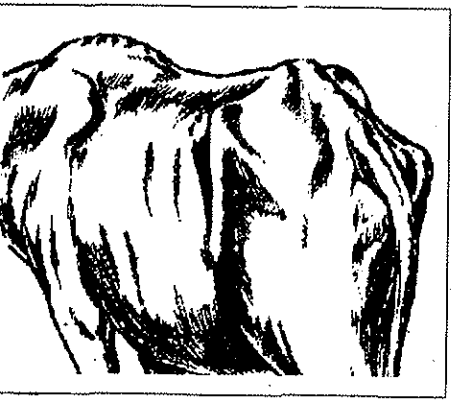
ble 1. The five classifications of BCS in dairy water buffaloes

Score	Exterior	By Observation and Palpation
1	very thin	Hip bones are angular.
2	thin	Hip bones are still clear, and backbone and ribs are still clear.
3	average	Hip bones are little rounded.
4	fat	Hip bones are rounded, and backbone and ribs are not visible.
5	very fat	Hip bones, backbone and ribs are not visible.

Figure 2. Buffalo cow with BCS of 1.

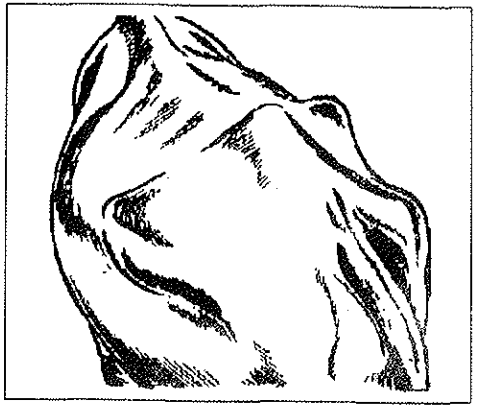
1. Back bone and ribs are very clear.
2. Hip bones are angular.
3. Area on either side of tail head and anus with marked cavity.
4. Rump is indented.
5. No fat layer under the skin
6. Very thin.
7. **BCS ①**

Figure 3. Buffalo cow with BCS of 2.



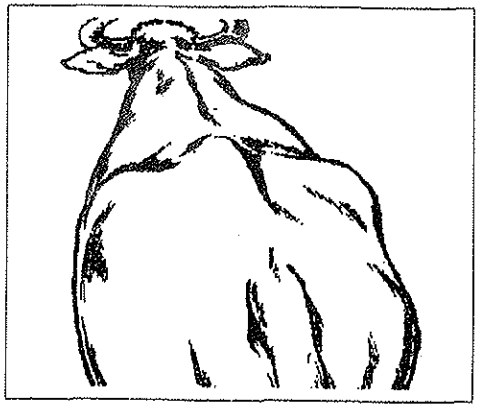
1. Backbone and ribs are clear.
2. Hip bones are still clear.
3. Area on either side of tail head and anus still has cavity
4. Rump is little indented.
5. Thin fat layer under the skin
6. Thin
7. **BCS ②**

Figure 4. Buffalo cow with BCS of 3.



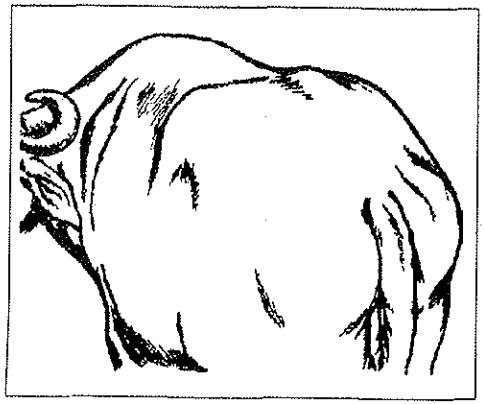
1. Ribs and backbone are still clear.
2. Hip and pin bones are slightly rounded.
3. Area on either side of tail head and anus are little bit filled.
4. Presence of medium fat layer under the skin
5. Average
6. **BCS ③**

Figure 5. Buffalo cow with BCS of 4.



1. Ribs and backbone are not visible.
2. Hip and pin bones are rounded.
3. Area on either side of tail head and anus is filled.
4. Rump is flat.
5. Thick fat layer under the skin
6. Fat
7. **BCS ④ (ideal cow)**

Figure 6. Buffalo cow with BCS of 5.

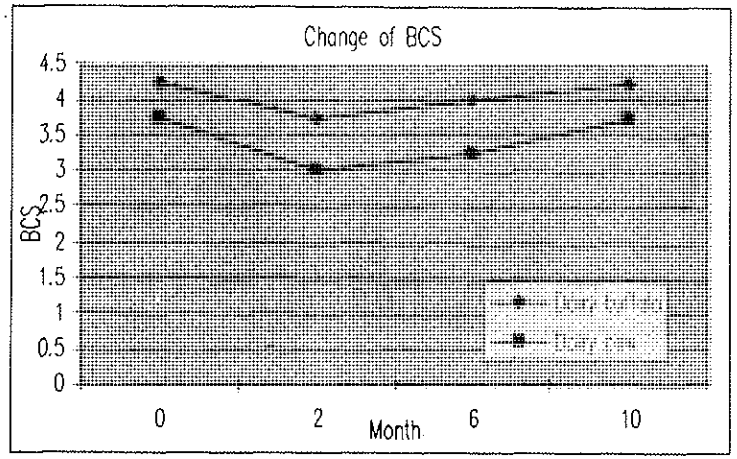


1. Ribs and backbone are not visible.
2. Hip and pin bones are not visible.
3. Area on either side of tail head and anus is well filled.
4. Rump is very bulging.
5. Very thick fat layer under the skin.
6. Very fat.
7. **BCS ⑤**

ole 2: After perfecting step 1, the BCS can be done using step 2

	1st Step	2nd Step
Exterior	Score	Score
very thin	1	
		1.5
thin	2	
		2.5
average	3	
		3.5
fat	4	
		4.5
very fat	5	

ure 7. Recommended BCS during lactation



The recommended score of cow is 4 and permissible scores before and after delivery are from 4.5 to 3.5.

ITEM	BODY CONDITION SCORE	
	DAIRY BUFFALO	DAIRY CATTLE
Before calving	4 – 4.5	3.5 – 3.75
1-2 mo after calving	3.5 – 3.75	3.0 – 3.5
During dry period	4.0 – 4.5	3.5 – 3.75

BCS AND FEEDING MANAGEMENT

- ☐ BCS is changed by feeding.
- ☐ BCS of more than 4.75 should be avoided before delivery.
- ☐ If BCS after delivery decreases more than 1 score, it will lead to poor reproduction.
- ☐ The schedule of BCS checking is before delivery, at calving, 2 months after calving, 4 months after calving, 6 months after delivery and dry period.
- ☐ Too thin (with a score of less than 2) or too fat (score of more than 4.75) animals will lead to poor production and reproduction (boxes below).

TOO THIN:
1) Low milk production
2) Unclear of estrus after delivery
3) Retention of placenta
4) Poor reproduction

TOO FAT:
1) Dystocia (difficult delivery)
2) Low milk production
3) Reproductive difficulties

2. BCS Evaluation in beef cattle

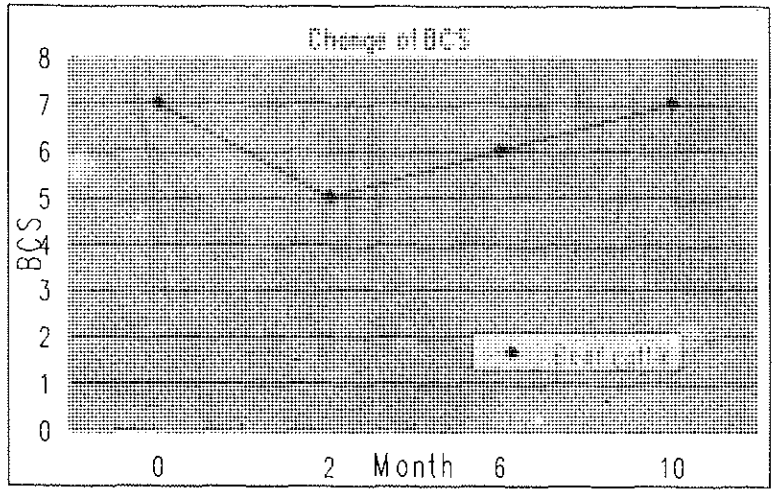
The BCS in beef cattle is characterized based on the following:

- ☐ The parts for judging are almost the same with dairy animals.
- ☐ Recommended score of beef cattle for breeding is 6.
- ☐ Proper BCS is 7 at calving.
- ☐ Too thin or too fat is not good for breeding.

Table 3: The BCS in beef cattle

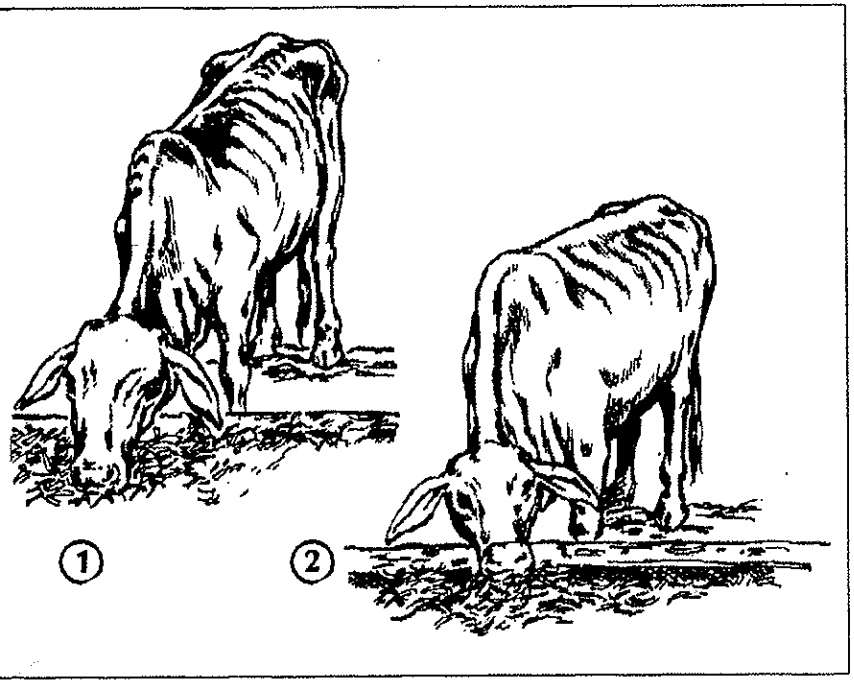
Score	Exterior	By observation and palpation
1	very thin	Back bone and ribs are very clear.
2	thin	Back bone and ribs are clear.
3	slightly thin	The spine seems a little bit rounded.
4		1 or 2 ribs can be still visible.
5	average	Can be distinguished backbone and ribs by a little pressure from the hand.
6	slightly fat	Ribs and backbone can not be visible.
7		Ribs are covered by fat.
8	fat	The backbone can not be distinguished without very firm pressure by the hand.
9	very fat	Frame is not visible.

Figure 8. Recommended BCS during lactation



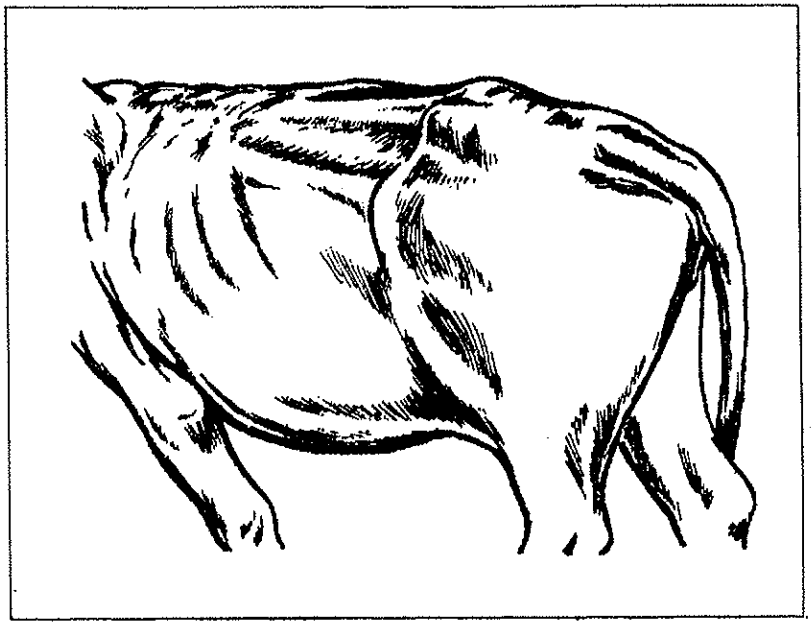
(1) At calving - 6 ~ 7 (Beef cattle)
(2) 1~2 months after calving - BCS 5 (Beef cattle)
(3) During dry period - 6 ~ 7 (Beef cattle)

gure 8. Picture of beef cattle showing the BCS of 1 & 2



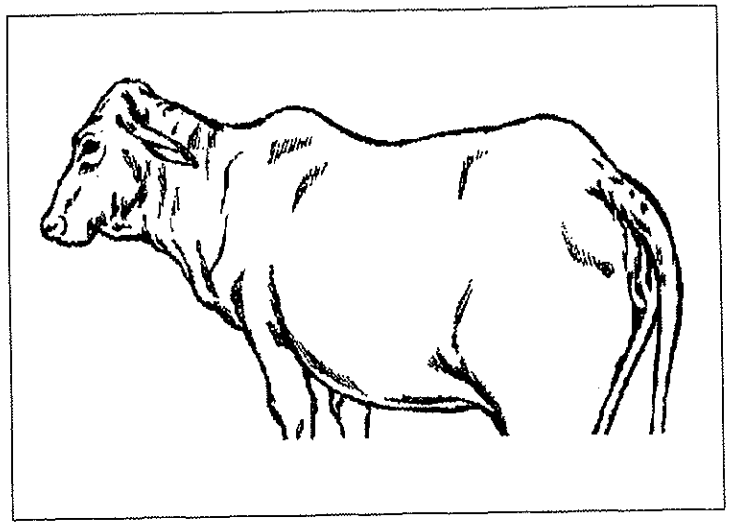
1. Back bone and ribs are very clear/ clear.
2. Hip bones and pin bones are in acute-angle projection.
3. Rump is markedly indented.
4. No fat layer on tail head.
5. Very thin / thin
6. **BCS ①, ②**

Figure 8. Illustration of beef cattle showing BCS of 3



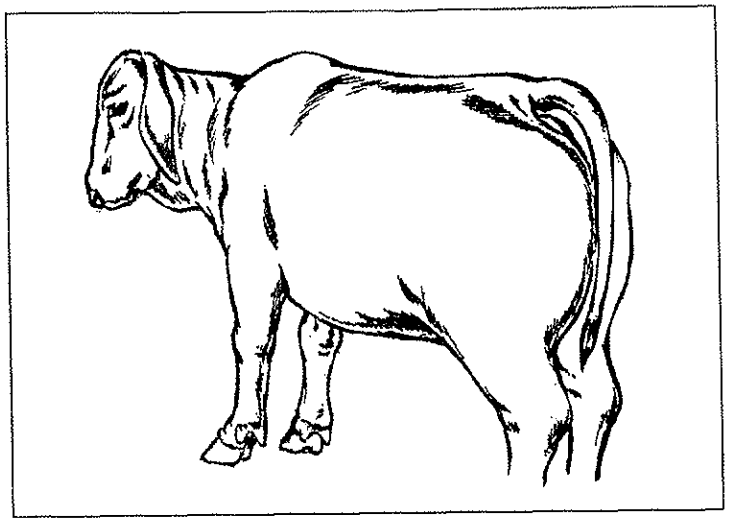
1. Backbone **seems a little rounded.**
2. Hip bones and pin bones **seem an acute-angle.**
3. Rump is indented.
4. Ribs are still clear.
5. A little fat layer on tail head.
6. Slightly thin.
7. **BCS ③**

e 11. Illustration of beef cattle showing BCS of 6



1. Backbone seems flat.
2. Ribs are not visible.
3. Hip and pin bones are slightly rounded.
4. Rump seems flat.
5. A little thick fat layer on tail head.
6. Slightly fat.
7. **BCS ⑥ (Ideal BC score)**

Figure 12. Illustration of beef cattle showing BCS of 8



1. Backbone and ribs are not visible.
2. Hip and pinbones are rounded and the area between the right and left hip bone seems flat
3. A thick fat layer on tail head
4. Fat.
5. **BCS ⑧**

ra sa karagdagang kaalaman, makipag-ugnayan sa:

WATER BUFFALOES AND BEEF CATTLE IMPROVEMENT PROJECT (WBBCIP)
Philippine Carabao Center
National Headquarters and Gene Pool
Science City of Muñoz, Nueva Ecija
Tel. No.: (044) 456-0731 to 34

NUEVA ECIJA STOCK FARM
c/o Livestock Development Division -
Bureau of Animal Industry
Visayas Avenue, Diliman, Quezon City
Tel. No.: (02) 926-8842

ng proyekto ng:

PHILIPPINE CARABAO CENTER

BUREAU OF ANIMAL INDUSTRY

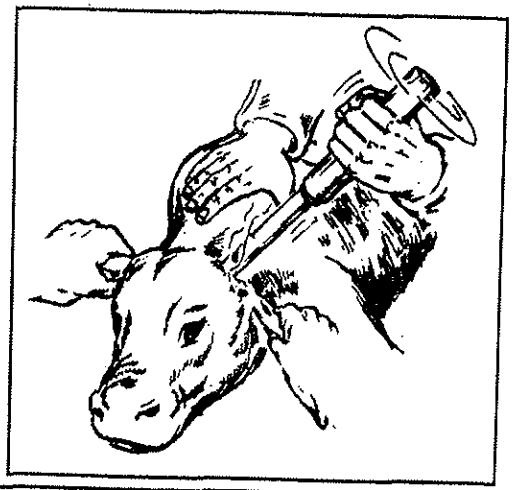
NUEVA ECIJA PROVINCIAL GOVERNMENT

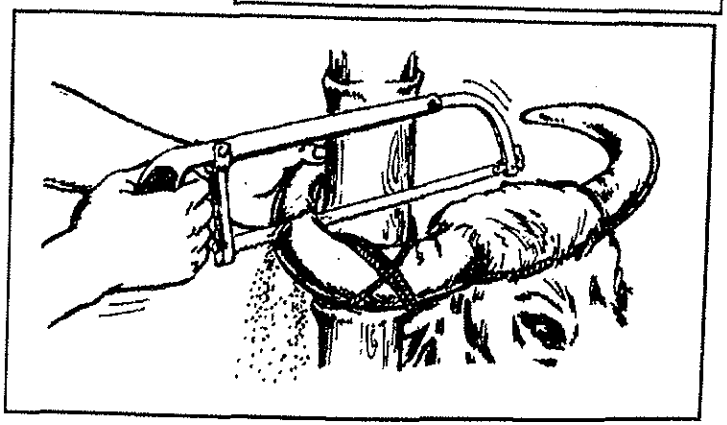
JICA JAPAN INTERNATIONAL COOPERATION AGENCY

Extension Bulletin No. 06

PAG-AALIS o PAGPUPUTOL ng SUNGAY

ng mga Baka at Kalabaw



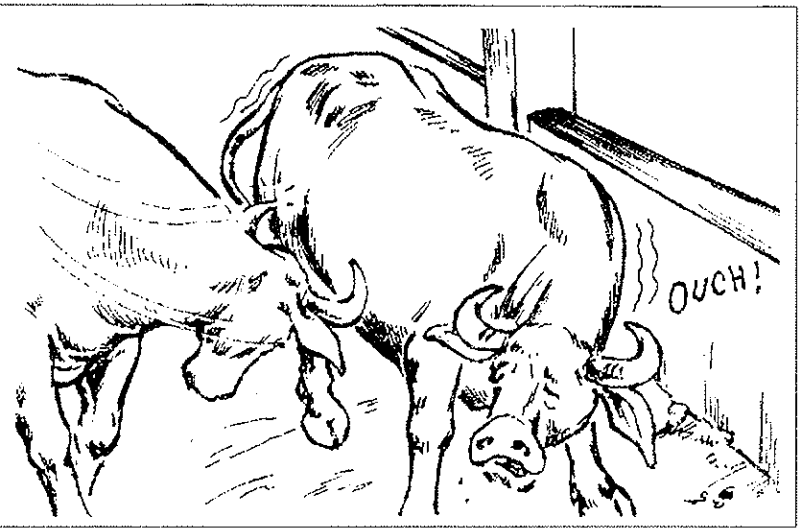


AMAMARAAN SA PAG-AALIS O PAGPUPUTOL G SUNGAY NG MGA BAKA AT KALABAW

Ang sungay ay isang parte ng baka at kalabaw na agbibigay ng magandang anyo at hitsura ng mga ito. Subalit ung minsan ang sungay ay nagdudulot ng aksidente sa mga ayop lalo na kung ang mga ito ay nag-aaway o nagsusuwagan.

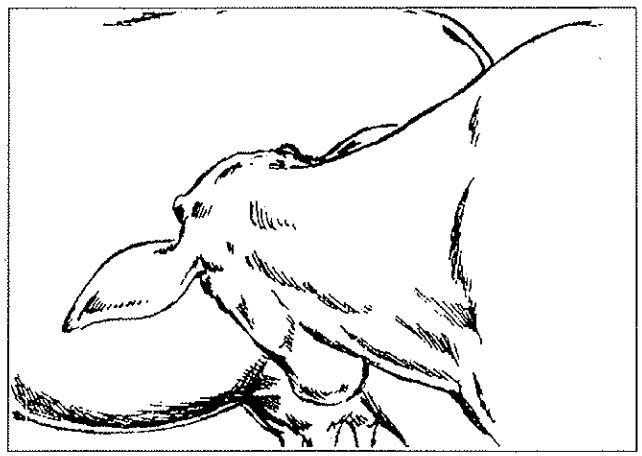
GA KAHALAGAHAN NG PAG-AALIS G SUNGAY NG HAYOP

1. Maiiwasan ang aksidente o ang pagkasugat ng katawan ng hayop at ng tagapag-alaga nito.



2. Makakatulong sa pag-iwas ng pagkasira ng puklo o suso ng mga gatasang hayop.

3. Maiiwasan din na masaktan at makunan ang buntis na hayop kapag sila ay nagsusuwagan.



N GINAGAWA ANG PAG-AALIS NGAY NG HAYOP?

Ang tamang panahon ng pagputol ng sungay ay kapag ang ay bata pa lamang (dalawang linggo ang edad sa kalabaw at uwan ang gulang sa baka). Ginagawa rin ang pagputol ng lalo na kung ang dulo ay tumutusok o sumasayad na sa ulo o g parte ng katawan ng hayop. Mas mainam ang pag-aalis ng sa tag-araw para maiwasan ang laging pagkabasa ng ulo ng Kung gagawin ito sa panahon ng tag-ulan, kailangan ang pag-iingat upang maiwasan ang impeksyon.

AILANGAN SA PAG-AALIS NG SUNGAY NG HAYOP

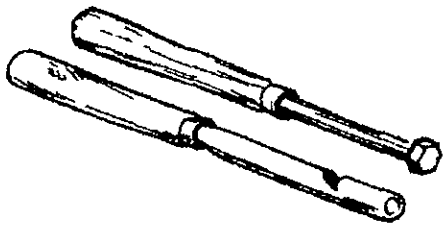
ctric dehorner". Kung wala ito, maaaring gumamit ng tubo na bilog na 3/4 pulgada at isang piye at kalahati ang haba) na kahoy na puluhan.

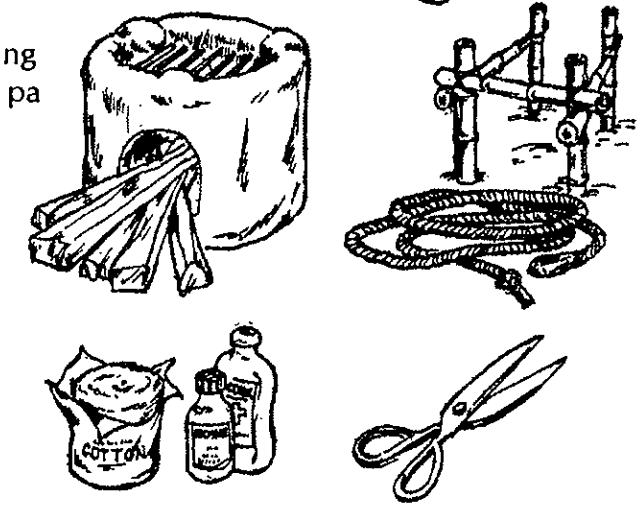
oy na pang-init
tubo

an o tali ng hayop

k at gamot tulad ng
e, alcohol, at iba pa

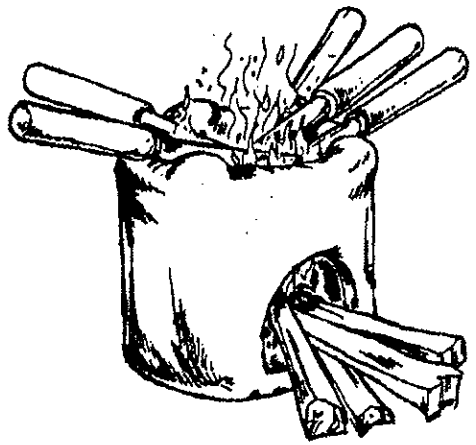
ting





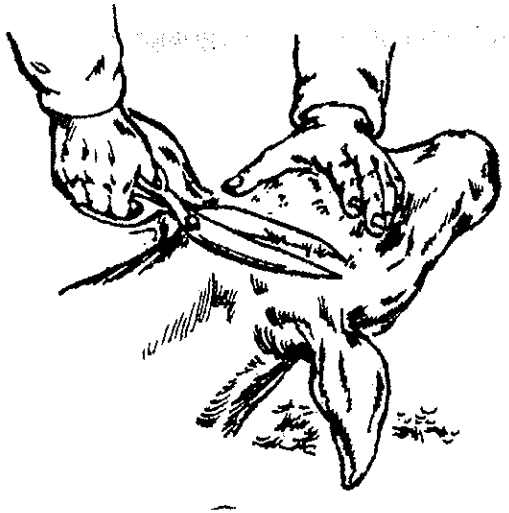
A. PARAAN NG PAG-AALIS NG SUNGAY SA BULO O GUYA

1. Painitln ang tubo hanggang sa magbaga ito.

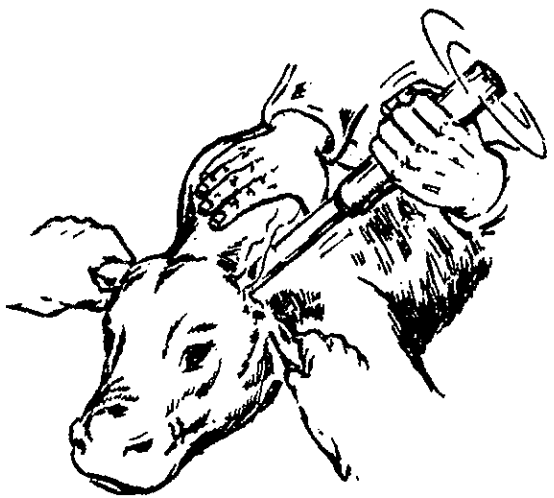


2. Ihiga ang bulo at talian ang mga paa nito.

Gupitin ang buhok sa palibot ng sungay ng hayop.

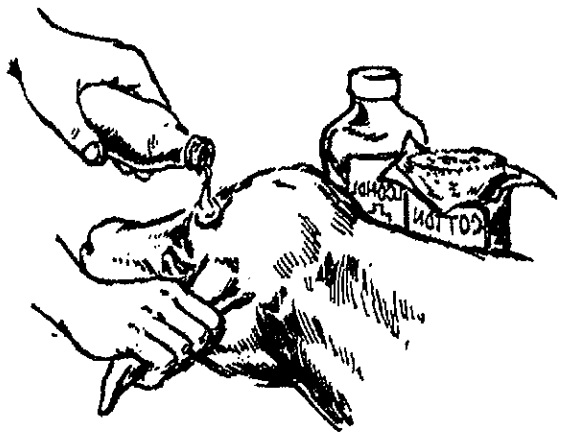


Idikit ang nagbabagang tubo sa puno ng sungay ng hayop. Siguraduhing nakapagitna ang sungay sa butas ng mainit na tubo.



5. Patagalin ito hanggang maalis o matuklap ang sungay ng hayop.

6. Lagyan ng gamot ang pinag-alisan ng sungay.

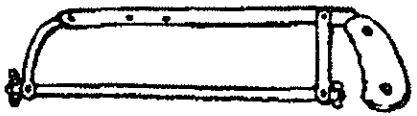


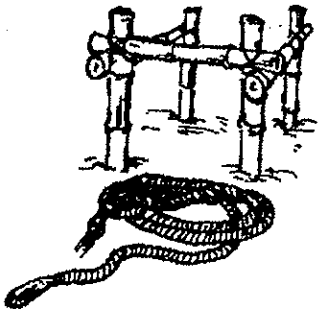
7. Isunod ang kabilang sungay ng hayop ayon sa mga pamamaraang ginawa sa unang sungay na inalis.

PAGPUPUTOL NG SUNGAY SA HAYOP (higit sa 1 taon ang edad)

Mga kailangang gamit:

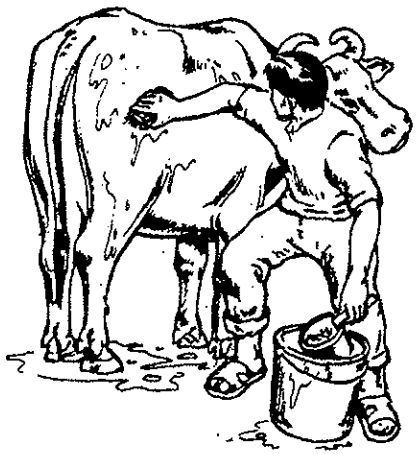
1. Jig saw o hack saw
2. Lubid na pangtali sa hayop
3. Ipitan
4. Gamot (iodine at disinfectant)
5. Bulak



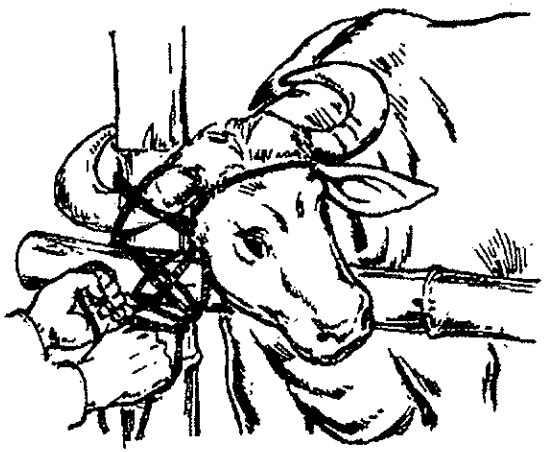


Gamaraan:

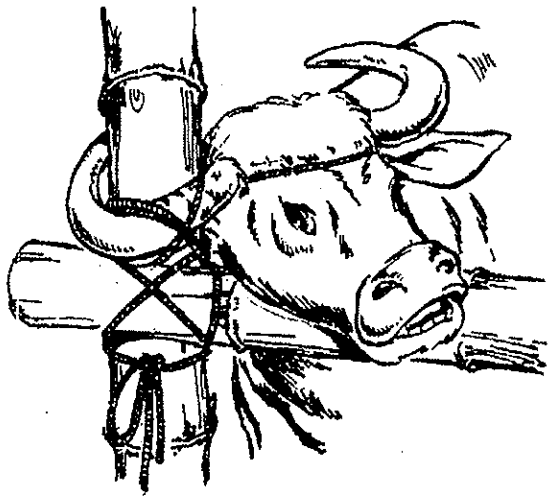
1. Paliguan muna ang hayop bago dalhin sa ipitan.



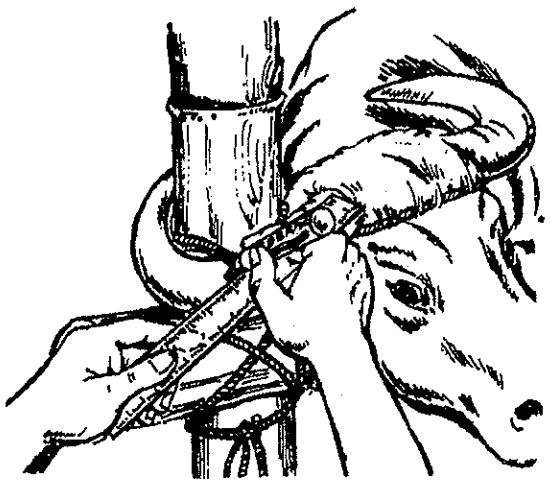
2. Itali ang hayop ng mahigpit para hindi maigalaw ang ulo nito.



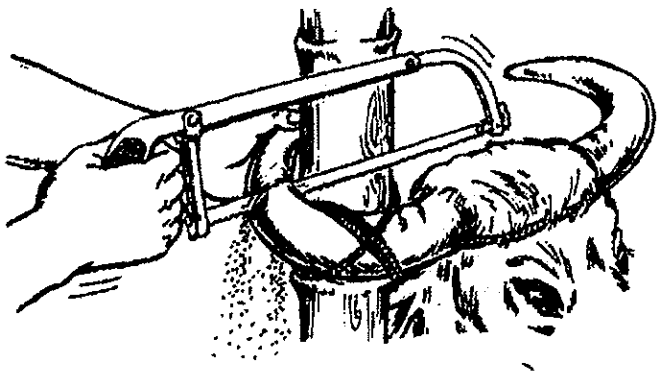
3. Isaayos ang lugar ng sungay na dapat putulin.



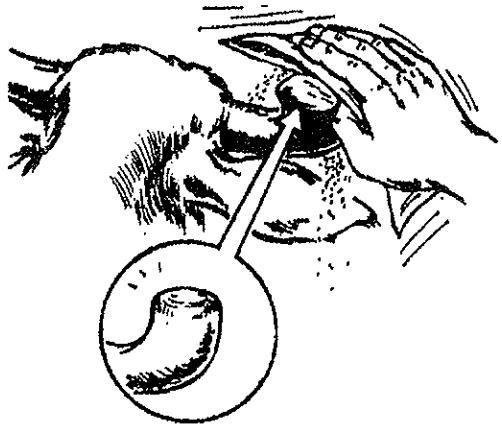
. Sukatin ang haba ng sungay na puputulin at lagyan ng marka ito.



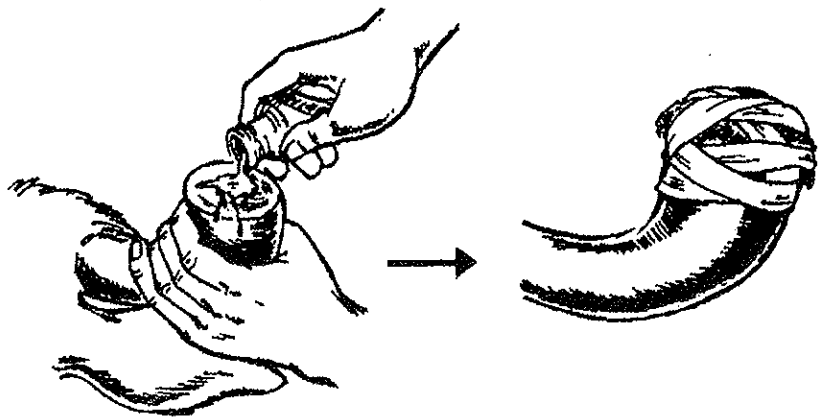
5. Lagariin ang sungay gamit ang jigsaw o hack saw hanggang ito ay tuluyan ng maputol.



6. Lihain ang parteng matalim ng pinutol na sungay. Pagkatapos lihain, isunod ang pagputol sa kabilang sungay.



7. Lagyan ng gamot ang sungay na pinutol kung magdurugo ito.



8. Balutan ng gasa ang parte ng sungay na dumugo at huwag munang paliguan ang hayop para maiwasan ang pagkabasa nito.

9. Obserbahan ang hayop hanggang tuluyang gumaling.