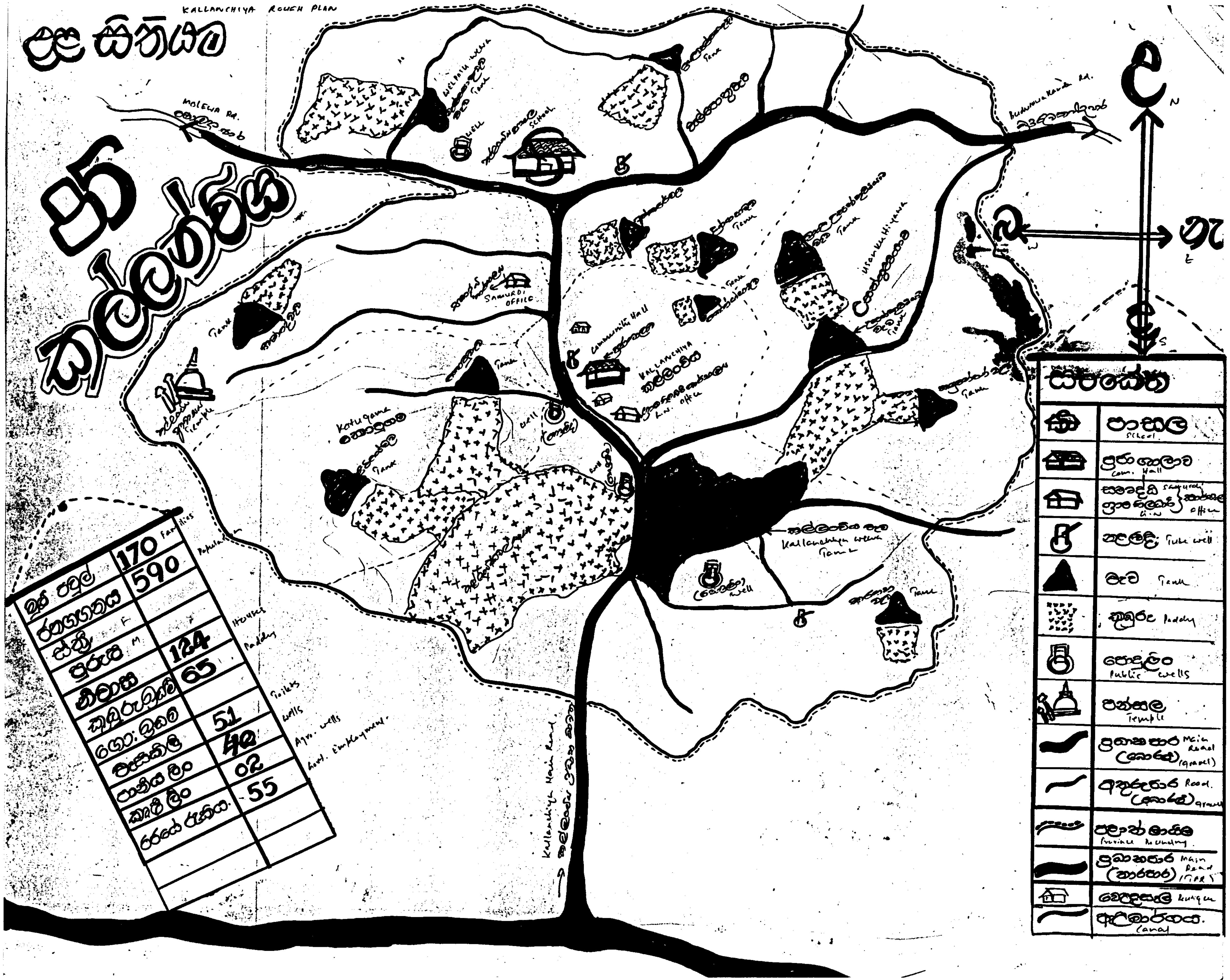
Chapter 5

MAHANANNERIYA MINOR IRRIGATION SCHEME

- Rehabilitation and Improvement Plan by Farmers -



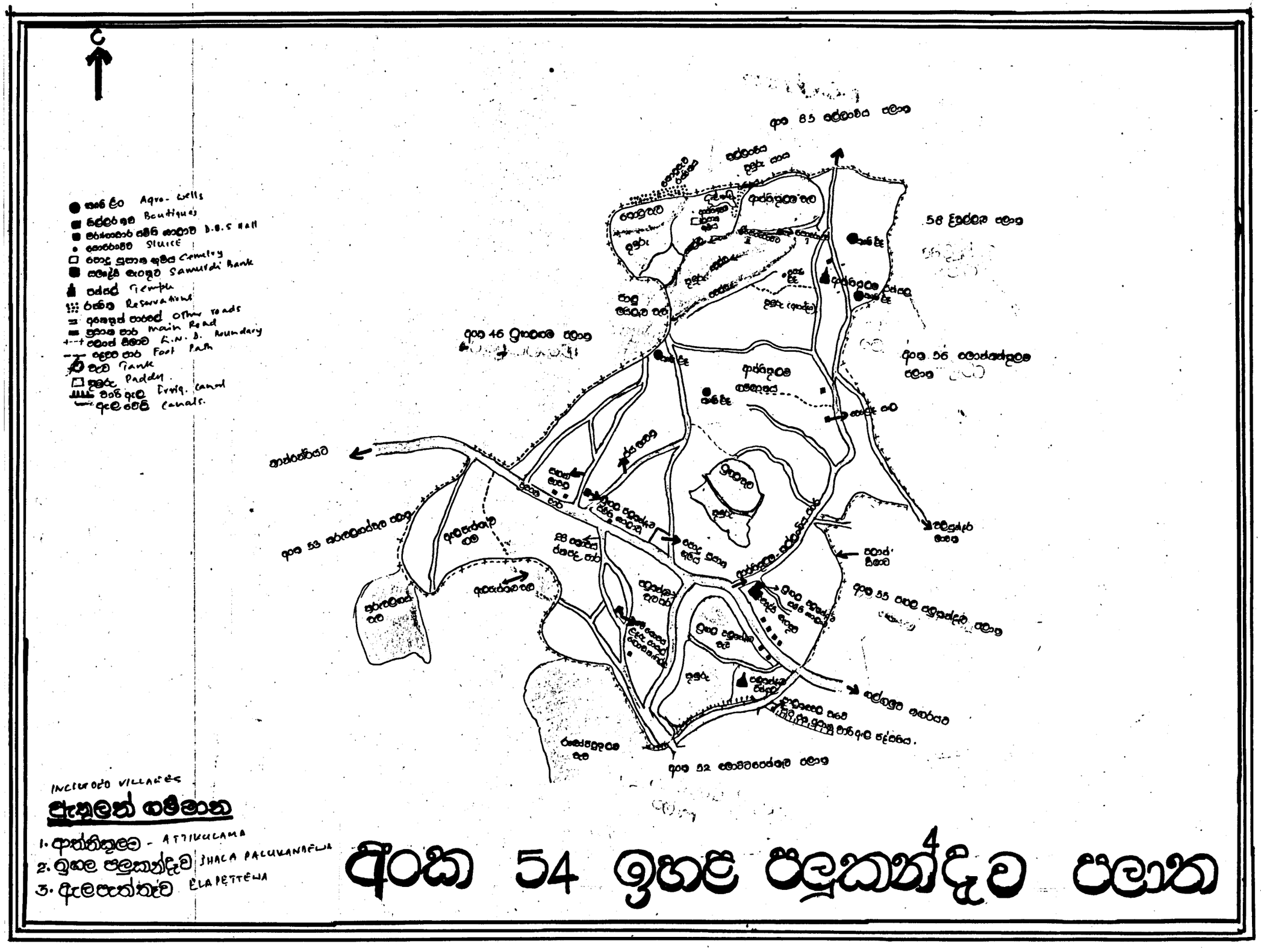
The Study for the Potential Realization of Irrigated Agriculture
in the Dry and Intermediate Zones of Sri Lanka
Japan International Cooperation Agency (JICA)

Rehabilitation and Improvement Plan of Irrigation Infrastructure by Nidahas Farmers' Organisation (Kallanchiya)

Rehabilitation Plan & Cost Estimation for
Minor Cascade Proposed by Farmers' Organization

Name of Scheme : Kallanchiya, Minor Scheme
Name of FO, etc. : Nidhahas FO, Extent of Land 8.1 ha

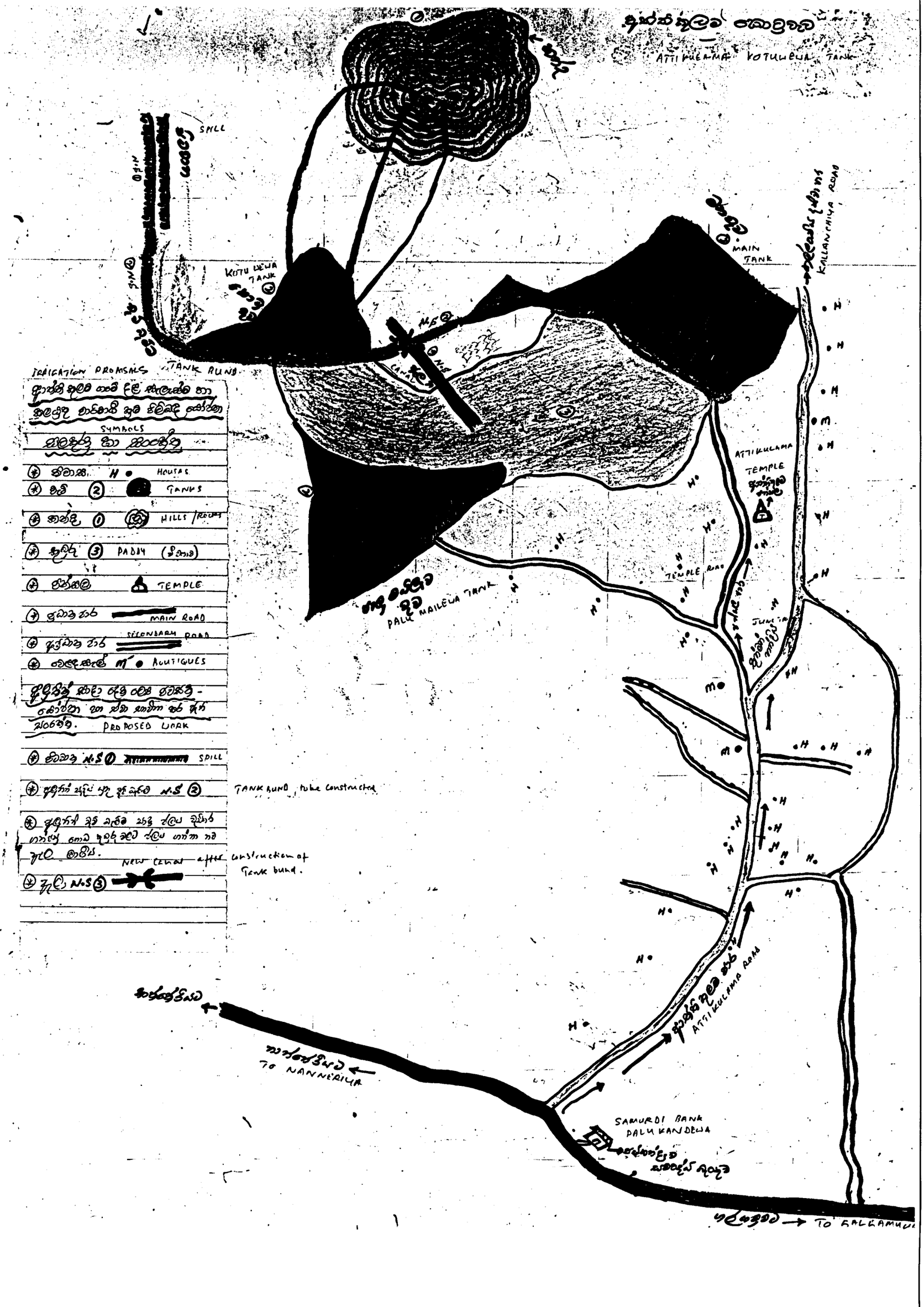
No.	Place to be repaired	Existing Condition / How to repair	Description	Materials/Others			Labour required for the work				Farmers' participation
				Requirement		Expected Cost (Rs.)	Requirement			Expected Cost (Rs.)	Expected Cost (Rs.)
1	Tank bund	Presently 10' ft wide Height 12' ft Turfing and providing a rip-rap	Length 500m Width 3.0 m	Earth Works	64 cu	32,000	Labors	142	days	24,850	24,850
				Rip rap	27 cu	81,000	Labors	60	days	10,500	10,500
				Turfing	161 sq		Labors	113	days	19,775	19,775
				Gravel	53 cu	106,000	Labors	118	days	20,650	20,650
2	spill & causeway	Construction of spill & causeway Spill is broken and there is no causeway Widen the spill and augment	Length of spill - 100' ft	RRM	30 cu	96,000	Skilled	23	days	6,325	
							Labors	233	days	40,775	40,775
				Earth works	60 cu		Labors	133	days	23,275	23,275
				Metal	5 cu	13,000	Labors	11	days	1,925	1,925
		construction of causeway with rubble	Causeway - 50' ft	Earth works	60 cu		Labors	133	days	23,275	23,275
3	Repairs to sluice	Presently in dilapidated condition Fixing a new door and hume pipes iron cages in front and back	Length 75' ft	Concrete	3 cu	24,600	Skilled	3	days	825	
							Labors	23	days	4,025	4,025
				Reinforced bar	425 kg	25,470					
				Earth works	30 cu		Labors	67	days	11,725	11,725
				Slide gate dia. 600	1 no	41,000					
				HP dia. 600mm	75 ft	52,500					
				Metal	3 cu	7,800	Labors	7	days	1,225	1,225
4	Rehabilitation of canal system with structures	Presently in a dilapidated condition & no structures Construction of two canals from sluice with structures Length of canals - 2000 meters	Farm Turnout - 20 nos	HP dia. 6 inch	140 ft	29,400					
				Concrete	20 cu	164,000	Skilled	20	days	5,500	
							Labors	155	days	27,125	27,125
				Earth works	20 cu		Labors	44	days	7,700	7,700
				Metal	20 cu	52,000	Labors	44	days	7,700	7,700
5	Rehabilitation of present main canal	Digging the canal and providing a rubble masonry wall on road side	Length of canal 1000m Width 3' ft H 3 ft	RRM	106 cu	339,200	Skilled	80	days	22,000	
							Labors	530	days	92,750	92,750
				Earth works	500 cu		Labors	1110	days	194,250	194,250
				Metal	16 cu	41,600	Labors	36	days	6,300	6,300
6	Construction of a feeder canal to take from Yayanluliya Pond	Opening up of a new canal by Back hoe machine removing forest & roots	Length 1500m width 10' ft	Clearing	2 ac.	20,000					
				Ripping	2 ac.	10,000					
				Earth Excavation	331 cu	66,200					
	Sub-total					1,201,770				552,475	517,825
	Grand-total					1,754,000					
	(US$/ha)					3,050					



The Study for the Potential Realization of Irrigated Agriculture in the Dry and Intermediate Zones of Sri Lanka Japan International Cooperation Agency (JICA)	**Rehabilitation and Improvement Plan of Irrigation Infrastructure by Samagi Farmers' Organisation (Aathikulama) (1/3)**

The Study for the Potential Realization of Irrigated Agriculture
in the Dry and Intermediate Zones of Sri Lanka
Japan International Cooperation Agency (JICA)

Rehabilitation and Improvement Plan of Irrigation Infrastructure by Samagi Farmers' Organisation (Aathikulama) (2/3)



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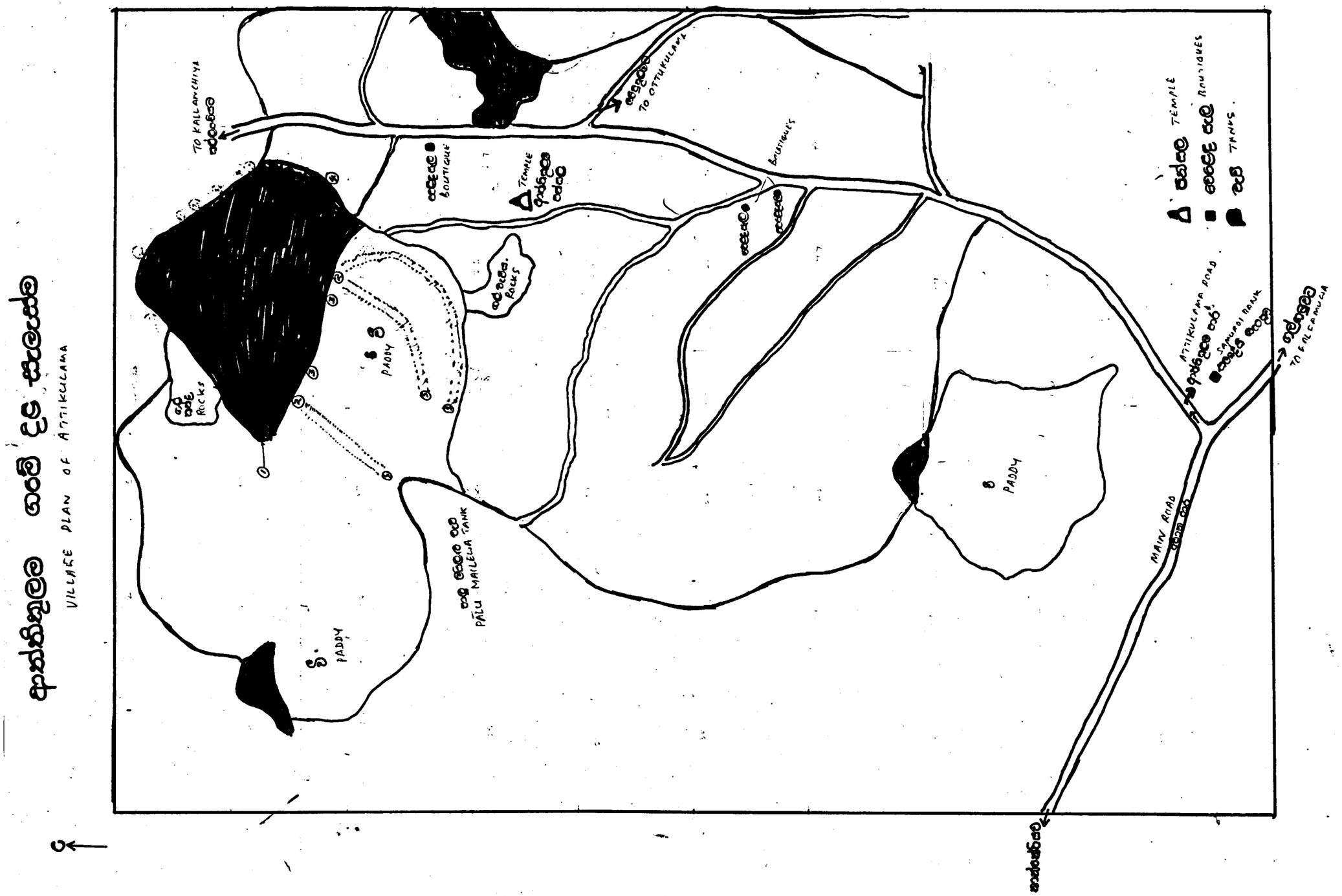

VILLAGE PLAN OF ATTIKULAMA

The Study for the Potential Realization of Irrigated Agriculture in the Dry and Intermediate Zones of Sri Lanka Japan International Cooperation Agency (JICA)	**Rehabilitation and Improvement Plan of Irrigation Infrastructure by Samagi Farmers' Organisation (Aathikulama) (3/3)**

Rehabilitation Plan & Cost Estimation for
Minor Cascade Proposed by Farmers' Organization

Name of Scheme : Arthikulama, Minor Scheme
Name of FO, etc. : Samagi FO, Extent of Land 12.1 ha

No.	Place to be repaired	Existing Condition / How to repair	Description	Materials/Others			Labour required for the work			Farmers' participation
				Requirement		Expected Cost (Rs.)	Requirement		Expected Cost (Rs.)	Expected Cost (Rs.)
1	Tank bund	Since the existing tank bund is not strong enough, earth work is necessary	L 350 m W 1.8 m H 3.35 m	Earth Works	41 cu	20,500	Labors 91 days		15,925	15,925
				Rip rap	19 cu	57,000	Labors 42 days		7,350	7,350
				Gravel	22 cu	44,000	Labors 49 days		8,575	8,575
		To prevent erosion of tank bund should turf the bund	L 350m, W 30' ft	Turfing	344 sq		Labors 241 days		42,175	42,175
2	Two sluices	Since both sluice doors and leaking should repair or replace	L 60 ft - 2 nos	Concrete	6 cu	49,200	Skilled 6 days		1,650	
							Labors 47 days		8,225	8,225
				Reinforced bar	849 kg	50,940				
				Earth works	60 cu		Labors 133 days		23,275	23,275
				Slide gate dia. 600	2 nos	82,000				
				HP dia. 600mm	120 ft	84,000				
				Metal	8 cu	20,800	Labors 18 days		3,150	3,150
3	Construction of two bathing steps	It is required to construct 2 new bathing step for villages	L 25' ft, W 10' ft, x 2	Concrete	10 cu	82,000	Skilled 10 days		2,750	
							Labors 78 days		13,650	13,650
				Earth works	30 cu		Labors 67 days		11,725	11,725
				Metal	2 cu	5,200	Labors 4 days		700	700
4	Tank spill	Repairs to between down places since it is not in good condition	L 50' ft, W 3' ft, H 1' ft	RRM	15 cu	48,000	Skilled 11 days		3,025	
							Labors 75 days		13,125	13,125
				Earth works	30 cu		Labors 67 days		11,725	11,725
				Metal	3 cu	7,800	Labors 7 days		1,225	1,225
5	Canal system structures & construction of 2 causeways	Canal system structures & construction of 2 causeways Canals 1 300m 2 400m 3 300m length 1000m width 2m	Farm Turnout - 10 nos	HP dia. 6 inch	70 ft	14,700				
				Concrete	10 cu	82,000	Skilled 10 days		2,750	
							Labors 78 days		13,650	13,650
				Earth works	10 cu		Labors 22 days		3,850	3,850
				Metal	10 cu	26,000	Labors 22 days		3,850	3,850
			Causeways - 2 nos	HP dia. 600mm	40 ft	28,000				
				Concrete	4 cu	32,800	Skilled 4 days		1,100	
							Labors 31 days		5,425	5,425
				Earth works	20 cu		Labors 44 days		7,700	7,700
				Metal	2 cu	5,200	Labors 4 days		700	700
	Sub-total					740,140			207,275	196,000
	Grand-total					947,000				
	(US$/ha)					1,102				

C.6 IHALAGAMA – MAILEWA TANK

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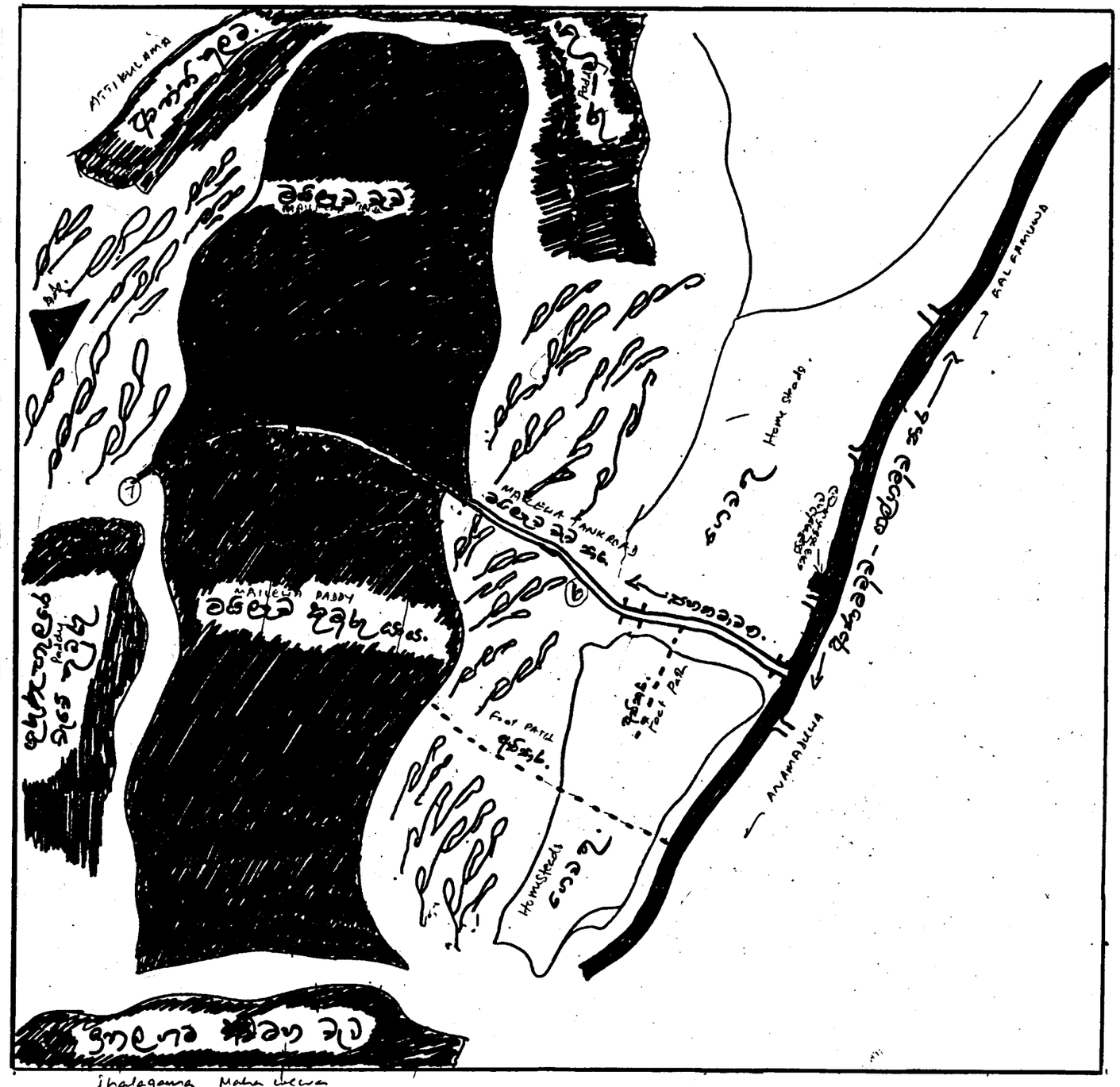
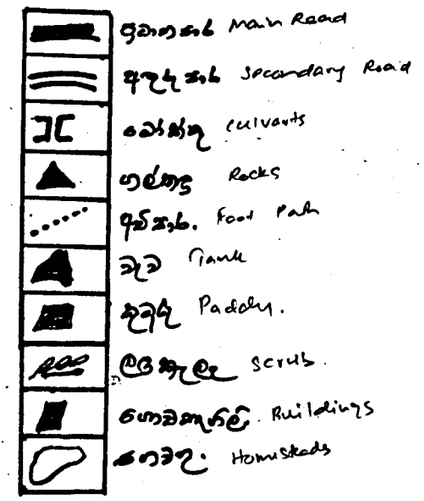
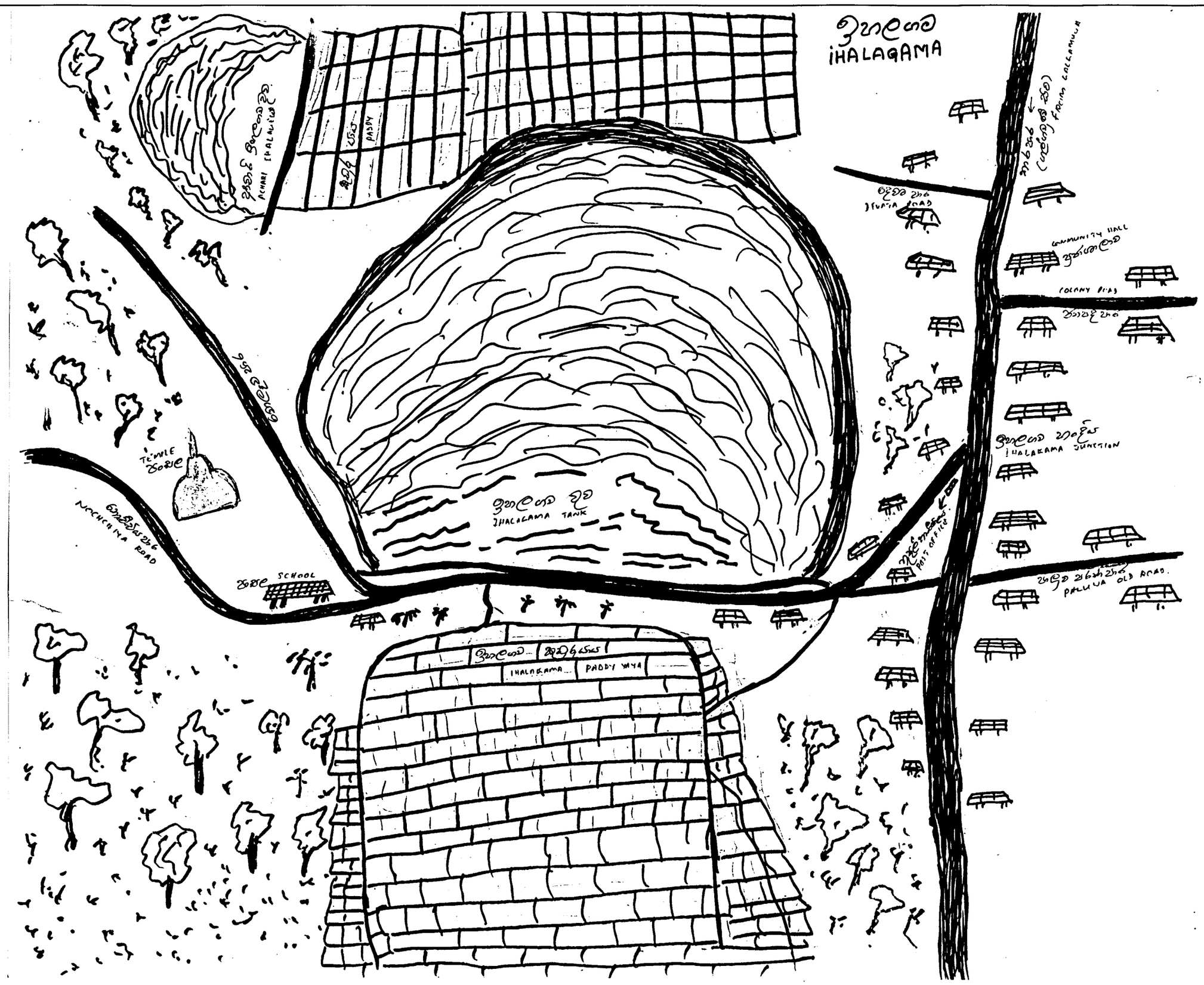




The Study for the Potential Realization of Irrigated Agriculture in the Dry and Intermediate Zones of Sri Lanka Japan International Cooperation Agency (JICA)	**Rehabilitation and Improvement Plan of Irrigation Infrastructure by Ekamuthu Farmers' Organisation (Ihalagama, Palumailawa) (1/2)**



The Study for the Potential Realization of Irrigated Agriculture in the Dry and Intermediate Zones of Sri Lanka Japan International Cooperation Agency (JICA)	**Rehabilitation and Improvement Plan of Irrigation Infrastructure by Ekamuthu Farmers' Organisation (Ihalagama, Palumailawa) (2/2)**

Rehabilitation Plan & Cost Estimation for
Minor Cascade Proposed by Farmers' Organization

Name of Scheme : Palumailawa (Mailewa), Minor Scheme
Name of FO, etc. : Ekamuthu FO, Extent of Land 22.0 ha

No.	Place to be repaired	Existing Condition / How to repair	Description	Materials/Others			Labour required for the work			Farmers' participatio
				Requirement		Expected Cost (Rs.)	Requirement		Expected Cost (Rs.)	Expected Cost (Rs.)
1	Sluice (MID)	Construction of a new sluice since the old one in no good.	Length of the sluice - 60 ft Height of concrete wall - 5 ft	Concrete	3 cu	24,600	Skilled	3 days	825	
							Labors	23 days	4,025	4,025
				Reinforced bar	425 kg	25,470				
				Earth works	30 cu		Labors	67 days	11,725	11,725
				Slide gate dia. 600	1 nos	41,000				
				HP dia. 600mm	60 ft	42,000				
				Metal	2 cu	5,200	Labors	4 days	700	700
2	Canal	Filling the bunds with earth repairing, compacting & turfing	L 1/2 km, both sides W 3' ft, H 3' ft	Earth	170 cu	42,500	Labors	377 days	65,975	65,975
				Turfing	137 sq		Labors	96 days	16,800	16,800
3	Anicut & Canal	Filling the bunds with earth compacting and turfing	L 1/2 km, both sides W 3' ft, H 3' ft	Earth	170 cu	42,500	Labors	1062 days	185,850	185,850
				Turfing	137 sq		Labors	96 days	16,800	16,800
4	Anicut & Canal	Filling the bunds with earth compacting and turfing	L 1/2 km, both sides W 3' ft, H 3' ft	Earth	170 cu	42,500	Labors	377 days	65,975	65,975
				Turfing	137 sq		Labors	96 days	16,800	16,800
5	Tank bund	Filling the Tank bund with earth and turfing	L 1 km Top W 7' ft, H 2.95 m	Earth	104 cu	26,000	Labors	231 days	40,425	40,425
				Gravel	74 cu	148,000	Labors	164 days	28,700	28,700
				Turfing	710 sq		Labors	497 days	86,975	86,975
6	Agricultural Roads	Rehabilitation of existing road Fill washed out places, make side drains, surface.	L 2 km W 12' ft	Earth works	382 cu	191,000	Labors	848 days	148,400	148,400
				Gravel	254 cu	508,000	Labors	564 days	98,700	98,700
7	Spill & Spill Canal	Clearing and deepening the spill canal and rehabilitation	L 3 km W 10' ft, depth 8' ft	Clearing	4 ac.	40,000				
				Earth Excavation	3,180 cu	636,000				
	Sub-total					1,814,770			788,675	787,850
	Grand-total					2,603,000				
	(US$/ha)					1,666				

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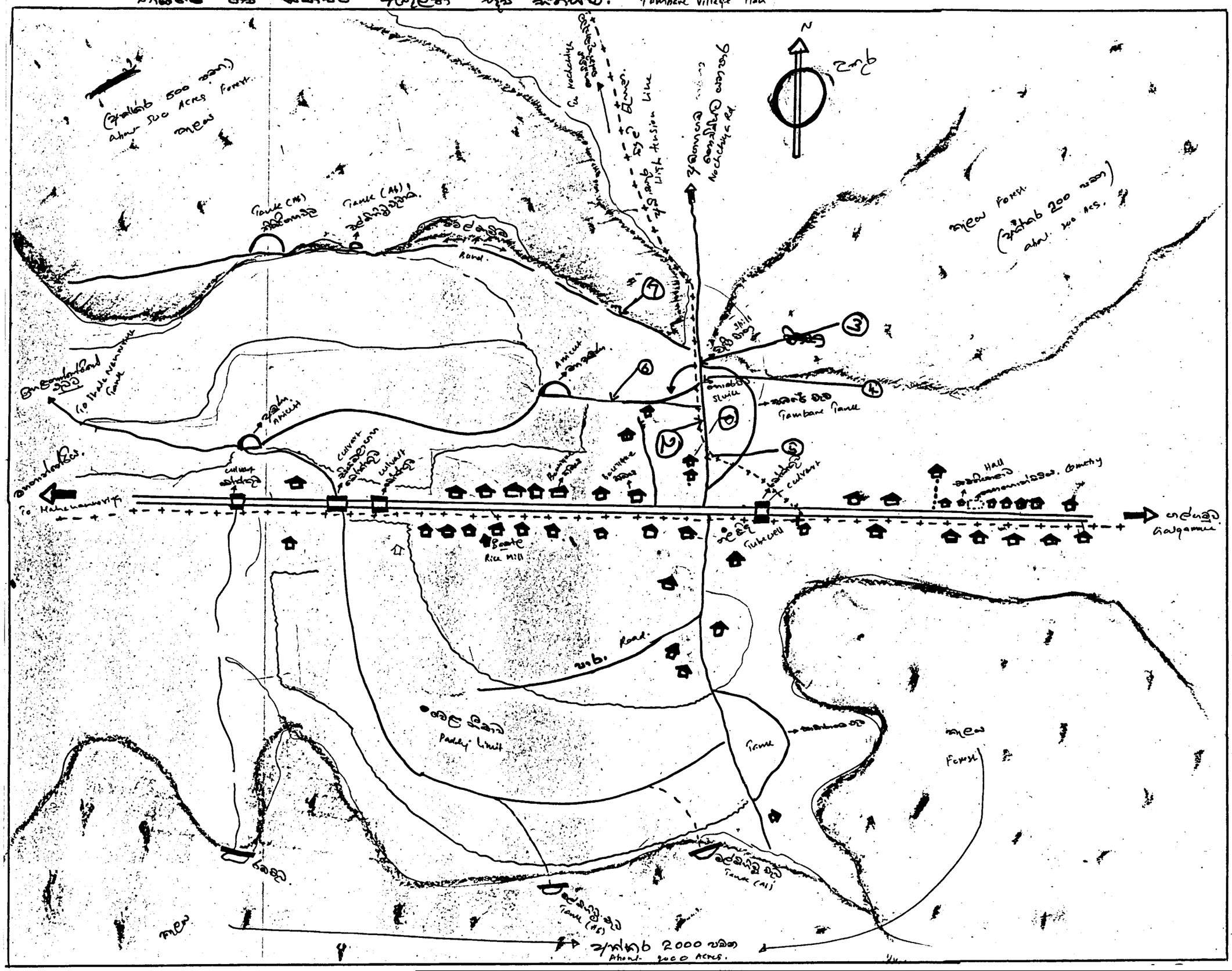
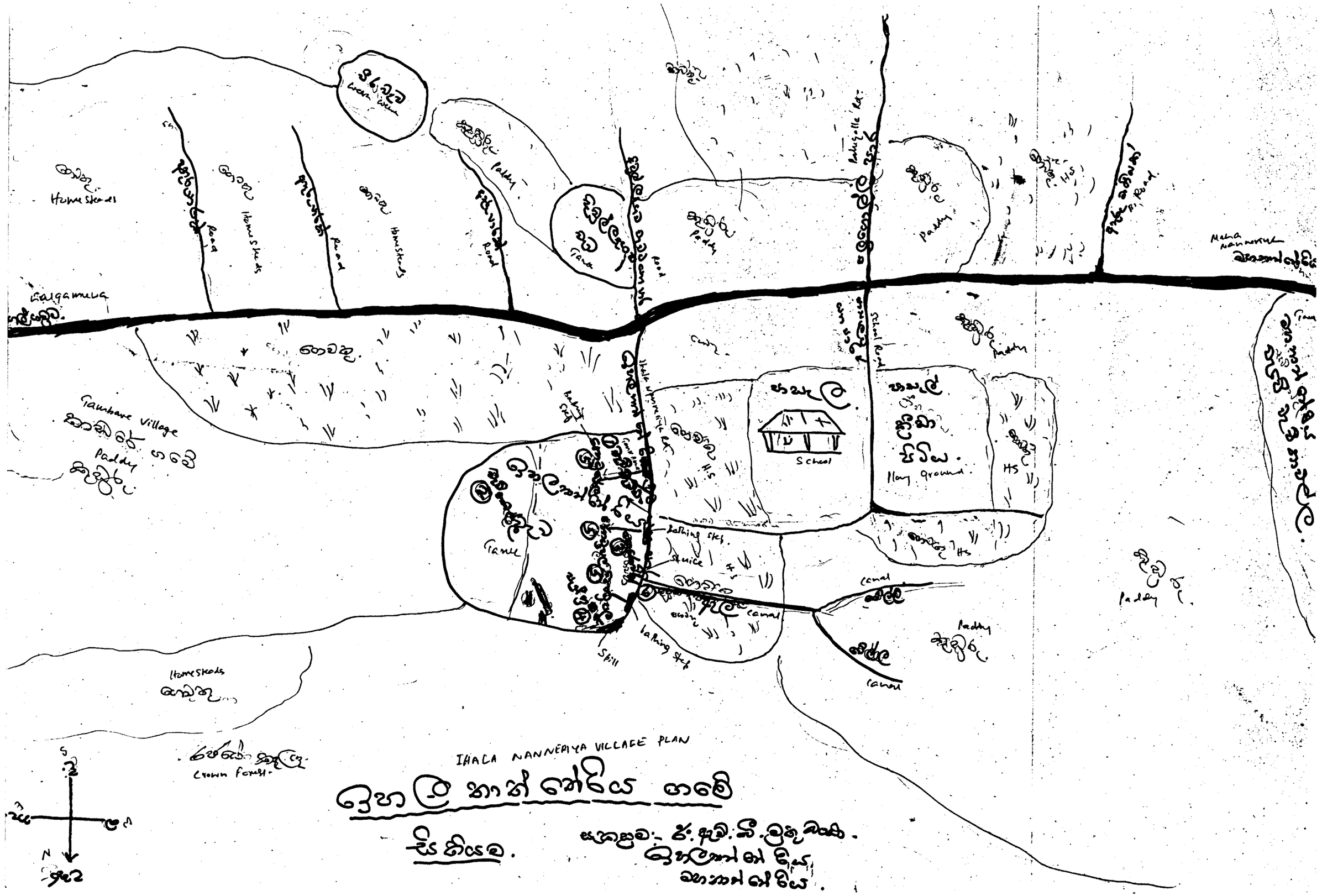


The Study for the Potential Realization of Irrigated Agriculture in the Dry and Intermediate Zones of Sri Lanka Japan International Cooperation Agency (JICA)	**Rehabilitation and Improvement Plan of Irrigation Infrastructure by Samagi Farmers' Organisation (Tambarewewa)**

Rehabilitation Plan & Cost Estimation for
Minor Cascade Proposed by Farmers' Organization

Name of Scheme : Palumailawa (Mailewa), Minor Scheme
Name of FO, etc. : Ekamuthu FO, Extent of Land 22.0 ha

No.	Place to be repaired	Existing Condition / How to repair	Description	Materials/Others			Labour required for the work			Farmers' participatio
				Requirement		Expected Cost (Rs.)	Requirement		Expected Cost (Rs.)	Expected Cost (Rs.)
1	Sluice (MID)	Construction of a new sluice since the old one in no good.	Length of the sluice - 60 ft Height of concrete wall - 5 ft	Concrete	3 cu	24,600	Skilled	3 days	825	
							Labors	23 days	4,025	4,025
				Reinforced bar	425 kg	25,470				
				Earth works	30 cu		Labors	67 days	11,725	11,725
				Slide gate dia. 600	1 nos	41,000				
				HP dia. 600mm	60 ft	42,000				
				Metal	2 cu	5,200	Labors	4 days	700	700
2	Canal	Filling the bunds with earth repairing, compacting & turfing	L 1/2 km, both sides W 3' ft, H 3' ft	Earth	170 cu	42,500	Labors	377 days	65,975	65,975
				Turfing	137 sq		Labors	96 days	16,800	16,800
3	Anicut & Canal	Filling the bunds with earth compacting and turfing	L 1/2 km, both sides W 3' ft, H 3' ft	Earth	170 cu	42,500	Labors	1062 days	185,850	185,850
				Turfing	137 sq		Labors	96 days	16,800	16,800
4	Anicut & Canal	Filling the bunds with earth compacting and turfing	L 1/2 km, both sides W 3' ft, H 3' ft	Earth	170 cu	42,500	Labors	377 days	65,975	65,975
				Turfing	137 sq		Labors	96 days	16,800	16,800
5	Tank bund	Filling the Tank bund with earth and turfing	L 1 km Top W 7' ft, H 2.95 m	Earth	104 cu	26,000	Labors	231 days	40,425	40,425
				Gravel	74 cu	148,000	Labors	164 days	28,700	28,700
				Turfing	710 sq		Labors	497 days	86,975	86,975
6	Agricultural Roads	Rehabilitation of existing road Fill washed out places, make side drains, surface.	L 2 km W 12' ft	Earth works	382 cu	191,000	Labors	848 days	148,400	148,400
				Gravel	254 cu	508,000	Labors	564 days	98,700	98,700
7	Spill & Spill Canal	Clearing and deepening the spill canal and rehabilitation	L 3 km W 10' ft, depth 8' ft	Clearing	4 ac.	40,000				
				Earth Excavation	3,180 cu	636,000				
	Sub-total					1,814,770			788,675	787,850
	Grand-total					2,603,000				
	(US$/ha)					1,666				



The Study for the Potential Realization of Irrigated Agriculture in the Dry and Intermediate Zones of Sri Lanka Japan International Cooperation Agency (JICA)	**Rehabilitation and Improvement Plan of Irrigation Infrastructure by Eksath Farmers' Organisation (Ihalananneriya)**

Rehabilitation Plan & Cost Estimation for
Minor Cascade Proposed by Farmers' Organization

Name of Scheme : Ihala Nanneriya, Minor Scheme
Name of FO, etc. : Eksath FO, Extent of Land 26.0 ha

No.	Place to be repaired	Existing Condition / How to repair	Description	Materials/Others			Labour required for the work			Farmers' participation
				Requirement		Expected Cost (Rs.)	Requirement		Expected Cost (Rs.)	Expected Cost (Rs.)
1	Tank bund	Should clean and augment the bund by about one foot with earth filling since there is a village on the other side of the bund the bund should be graveled and make motorable Some places should be widened because of bathing 4 places are damaged. Because of cattle, sluice to spill section is damaged. Out side of the bund is damaged near the sluice because of cattle since the tank is silted should remove the silt and deepen the tank 1. Length of the bund about 1000m 2. Width of the bund about 2 1/2 m 3. Height of the bund about 3 1/2 m	Tank bund	Earth Works	129 cu	64,500	Labors	286 days	50,050	50,050
				Rip rap	53 cu	159,000	Labors	118 days	20,650	20,650
				Gravel	86 cu	172,000	Labors	191 days	33,425	33,425
				Turfing	323 sq		Labors	226 days	39,550	39,550
			Desilting		1,000 cu	400,000				
2	Sluice	Existing sluice is made about 30 yrs back. Since the door is worn water is leaking because of this a large amount of water 90 waste the sluice should be repaired. Since the control arm (iron) is rotted it is difficult to open and close the sluice	1. Sluice door 2. Iron Bar 3. Bar and nails 4. Padlocks 5. Water measuring device	Concrete	3 cu	24,600	Skilled	3 days	825	
							Labors	23 days	4,025	4,025
				Reinforced bar	425 kg	25,470				
				Earth works	30 cu		Labors	67 days	11,725	11,725
				Slide gate dia. 600	1 no	41,000				
				HP dia. 600mm	60 ft	42,000				
				Metal	2 cu	5,200	Labors	4 days	700	700
3	Spill	The existing spill is in a very run-down stage. There is a continuous leak. Since the spill is in a low elevation can not stock much water in the tank. If should be raised by about 1 foot. It is better to construct a new spill	1. Length - 100 ft 2. Width - 1 foot 3. Height - 4 feet	Concrete	9 cu	73,800	Skilled	9 days	2,475	
							Labors	70 days	12,250	12,250
				Reinforced bar	1,274 kg	76,410				
				Earth works	60 cu		Labors	133 days	23,275	23,275
				Metal	6 cu	15,600	Labors	13 days	2,275	2,275
4	Bathing steps	The existing two bathing steps are dilapidated Should construct 3 new bathing steps 1. Length of a Bathing step - 25 feet 2. Width of a Bathing step -10 feet	Bathing step - 3 nos	Concrete	9 cu	73,800	Skilled	9 days	2,475	
							Labors	70 days	12,250	12,250
				Reinforced bar	1,274 kg	76,410				
				Earth works	45 cu		Labors	100 days	17,500	17,500
				Metal	3 cu	7,800	Labors	7 days	1,225	1,225
5	Canal System	Repair the existing irrigation canal system which provides water to paddy fields. Two pipe lines should be repaired since they are leaking from joints.	1. Length of canal 800 m 2. Width of canal 1m	HP dia. 600mm	100 ft	70,000				
				Earth Works	271 cu	67,750	Labors	602 days	105,350	105,350
	Sub-total					1,395,340			340,025	334,250
	Grand-total					1,735,000				
	(US$/ha)					940				