APPENDIX-IV

PROJECT EVALUATION

APPENDIX IV: PROJECT EVALUATION

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CHAPTER 1 PROJECT EVALUATION

Financial and economic analyses aim at comparing project cost-benefits and evaluating development projects in a tangible way. Generally, evaluation by financial analysis gives relevance of the proposed project from the viewpoint of project agency and it is calculated by market prices. On the other hand, economic evaluation is made with economic prices to estimate the effect of the benefits at national and regional levels derived from the project.

Economic analysis of this project was made in accordance with the contents designed in this study. This contains a common economic evaluation which consists of financial analysis with market prices and economic one through the calculation of such indicators as IRR (Internal Rate of Return), B/C (Benefit/Cost Ratio) and NPV (Net Present Value). In this context, the criteria for selecting project in World Bank or ADB proposed that those sites that have EIRR at the level of 12% or higher should be selected and this can be considered as the opportunity cost of the capital input into this project. The economic analysis was performed under the conditions given below.

1.1 Condition, Methodology and Evaluation Cases

1.1.1 Purpose of Evaluation

The purpose of financial evaluation is to assess the benefit of a particular project from an individual economy standpoint, while economic evaluation assesses the project in terms of its contribution to the national economy as a whole.

1.1.2 Methodology of Evaluation

On the basis of project benefit and cost comparison for the two cases of (i) Current Situation without project FW/O) and (ii) rehabilitation means future with project FW), the economic viabilities of the projects are examined in terms of the three criteria of net present value (NPV), benefit-cost ratio (B/C ratio) and internal rate of return (IRR).

1) Evaluation Criteria

a) Interpretation of Future Without Project Case

It is assumed that the present conditions will keep status without project.

b) Project Life

Project life for rehabilitation of irrigation network and road works is set at 30 years considering the utility life of the proposed facilities and the O&M capacity of the line agency, including construction period works.

c) Project Benefit and Cost

Under financial evaluation, project benefit and cost are expressed in terms of market prices (financial prices). Economic evaluation, on the other hand, eliminates transfer payment, export duty, port and handling charges, wholesale margin and application of respective conversion factors. Moreover, project benefit and cost are based on August 2013year prices.

d) Inputs and Outputs

With regard to traded and non-traded goods expressed in financial prices, these are based on August 2013year prices. On the other hand, in the case of economic prices, the composition of non-traded goods is broken down into traded component, non-traded component, labor and transfer payment. In the case of the traded, non-traded labor components, border price, standard conversion factor (SCF), and shadow wage rate are applied, respectively.

e) Opportunity Cost of Capital

Referring to past agriculture-related reports, a discount rate of 12% is applied as the opportunity cost of capital for Myanmar.

f) Foreign Exchange Rate

In the evaluation, the foreign exchange rate of US1 = 975 Kyats as of August 2013year is applied.

g) Labor

Nominal wages are used for financial evaluation. Under economic evaluation, on the other hand, (i) skilled labor is 1.0 and (ii) unskilled labor is also multiplied by 7/12(7month employ in a year) but with adjustment of a coefficient of labor productivity, i.e. 0.6.

1.2 Conversion Factors

1.2.1 Standard Conversion Factor (SCF)

Estimation of a precise SCF is constrained due to unavailability of recent customs data (the latest published data covers only the period 2010/11 - 2012/2013) and lack of reliable figures in the breakdown of annual customs duties into export and import categories. Under these circumstances, the following estimation method has been adopted to calculate annual export and import customs duty values in recent years. Annual customs duties in the recent years have been computed based on (i) official average customs duty value for the period 2010/11 - 2012/13 year and (ii) estimated import-export ratio to breakdown estimated custom duty values in recent years into import and export portions. Under this method, the same average tariff rate is applied for both imported and exported commodities.

As a result, the SCF is computed at 0.99 based on the official trade and customs data and the recent trade data as shown in Table 1.2.1

Table 1.2.1 Standard Conversion Factor (SCF)

Unit: Million Kyats

Year	Value of Imports (CIF)	Value of Exports (FOB)	Import duties	Export duties	⑤= ①+②	6= 1)+2+ 3-4	SCF ⑤/⑥
2010/11	6,421.00	8,861.00	63.73	8.90	15,282.00	15,336.83	0.996
2011/12	9,035.00	9,135.00	153.26	9.10	18,170.00	18,314.16	0.990
2012/13	9,068.00	8,977.00	432.85	9.00	18,045.00	18,468.85	0.980
Total Average	8,174.67	8,991.00	216.61	9.00	17,165.67	17,373.28	0.990

Source: Customs Department Office

Standard Conversion Factor 0.99000

1.2.2 Conversion Factor for Paddy

Net farm income has been estimated at 196,879 Kyats/acre in financial terms and 197,542 Kyats in economic terms under rain fed paddy cultivation. As a result, the Conversion Factor for Paddy is computed at 0.695 based on the financial price at 196,879 Kyats/acre and economic price at 197,542Kyats/acre as shown in Table 1.2.2.

Table 1.2.2 Conversion Factor for Paddy

Item	Unit	Rice (financial terms)	CF	Rice (economic terms)
FOB price (Yangon)*	US\$/mt	450	9.	450
Foreign exchange rate	Kyats/mt	438,750	-	438,750
(US\$ 1 =975 Kyats)				
Export duty (0%)	Kyats/mt	0	0	0
Port and handling charges	Kyats/mt	5,000	0.99	4,950
Wholesale margin (5%)	Kyats/mt	21,938	0.99	21,718
Wholesale price in Yangon	Kyats/mt	411,813	•	412,082
Transport (Yangon – Pyay)	Kyats/mt	75,000	0.99	74,250
Ex-mill price	Kyats/mt	336,813		337,832
Miller's margin	Kyats/mt	33,681	0.99	33,344
Milling cost	Kyats/mt	20,000	0.99	19,800
By-product value	Kyats/mt	45,000	0.99	44,550
Farmgate price in milled rice	Kyats/mt	328,131	_	329,237
Farmgate price in paddy				
(milling recovery at 60%)	Kyats/mt	196,879	20	197,542
Farmgate price in paddy (Pyay)				284,160

Source: JICA Study Team Conversion Factor 0.695

As a result of calculation based on the Yearly Price Description of Normal Quality Rice in Pyay Market crop Price is shown in Table: 1.2.3.

Table 1.2.3 Yearly Price Description of Normal Quality Rice in Pyay Market (Kyat/30 viss)

Innma Yebaw	Manaw Thukha
2179	2087
4406	4434
6341	6260
4295	4219
6013	5952
9544	9570
14231	14094
13689	13706
12792	12567
14605	14791
14260	13921
	2179 4406 6341 4295 6013 9544 14231 13689 12792 14605

Source: DAP office

Conversion factors for Black-Gram have been estimated at 1.07 based on the financial price at 16,776 Kyats/basket and economic price at 15,846Kyats/basket, as shown in Table 1.2.4.

Table 1.2.4 Conversion Factor for Black Gram

Item	Unit	Black-Gram (financial terms)	CF	Black Gram (economic terms)
FOB price (Yangon)*	US\$/mt	630	12	300
Foreign exchange rate	Kyats/mt	614,250	-	614,250
(US\$ 1 =975 Kyats)				
Export duty (0%)	Kyats/mt	0	0	0
Port and handling charges	Kyats/mt	5,000	0.990	4,950
Wholesale margin	Kyats/mt	12,285	0.990	12,162
Wholesale price in Yangon	Kyats/mt	596,965		597,138
Transport (Yangon – Pyay)	Kyats/mt	75,000	0,990	74,250
Farmgate price	Kyats/mt	521,965	- 3	522,888
	Kyats/Basket	16,776	25	16,806
Farmgate price (Pyay)				15,648

Source: JICA Study Team Conversion Factor: 1.07

Conversion factors for Chemical Fertilizers have been estimated at 0.77 based on financial price and economic price as shown in Table 1.2.5

Table 1.2.5 Conversion Factor for Chemical Fertilizers

		Urea	TSP	МОР		Urea	TSP	МОР
ltem	Unit	(N46%)	(P46%)	(K60%)	CF	(N46%)	(P46%)	(K60%)
		fi	nancial term	s		ed	conomic term	ıs
CIF price (Muse/Tamu)	US\$/mt	355	360	355	-	355	360	355
Foreign exchange rate (US\$ 1 = 975 Kyats)	Kyats/mt	346,125	351,000	346,125	-	346,125	351,000	346,125
Import duty (0%)	Kyats/mt	0	0	0	0	0	0	0
Handling charge	Kyats/mt	3,000	3,000	3,000	0.990	2,970	2,970	2,970
Transport (Chaina – Yangon)	Kyats/mt	55,000	55,000	55,000	0.990	54,450	54,450	54,450
Wholesale margin	Kyats/mt	17,306	17,550	17,306	0.990	17,133	17,375	17,133
Wholesale price in Yangon	Kyats/mt	421,431	426,550	421,431	-	420,678	425,795	420,678
Transport(Yangon – Pyea)	Kyats/mt	70,000	70,000	70,000	0.990	69,300	69,300	69,300
Retail margin	Kyats/mt	49,143	49,655	49,143	0.990	48,652	49,158	48,652
Farmgate price	Kyats/mt	540,574	546,205	540,574	-	538,630	544,253	538,630
Farmgate price(Pyay)	Kyats/mt					700,000	700,000	700,000
				Conversion	Factor	0.77	0.78	0.77

Source: JICA Study Team

1.2.3 Cases for Project Evaluation

Table 1.2.6 shows the cases to examine the project economic variability; namely, there are 5 cases in total. Base 0 takes into account only the area expansion of black gram as the project benefit, not considering other benefits such as the benefit from road improvement and yield increase. Base 1 considered, on top of Base 0, the benefit accrued from road improvement as reduction of fuels for transporting agricultural products. Base 2 further considers, on top of Base 1, the remaining value of procured machineries after having completed the use in the project. For these 3 basic cases, no yield increase is counted but area expansion of black gram only for a direct agriculture related benefit.

Aside from the basic 3 cases, there are 2 more cases; Case Ext. Service takes into account yield increase both for rice and black gram given an appropriate extension services supported by a team of experts, e.g. a team of technical cooperation project. The level of the yield increase for paddy refers to the outcomes from a pilot project implemented udder a JICA development study. The level of the increase applied is 15% and 13% for monsoon paddy and summer paddy respectively. As for the black gram, yield is assumed to increase to the midstream one, which is the highest one amongst the 3 locations of upstream, midstream and downstream.

Last case, Case Road Only, undertakes the project cost of road improvement only and the benefit to be accrued from the road improvement only. The benefit is estimated how much transportation cost will be reduced with the improvement of the road mainly by the reduction of the fuel cost for Trollergyi, a common transportation mean mounted with tractor diesel engine. Note that though road improvement will facilitate rural transportation whereby enhancing rural economy as a whole, this benefit is not counted since it is difficult to estimate such benefit. Annual operation and maintenance cost have been computed based on project cost is multiplied by 0.3% for the period 2014 – 2043year.

Table 1.2.6 Cases for Project Evaluation by Area and Yield Change (Conditions)

Cooo	Monsoo	n Paddy	Summe	r Paddy	Black	Gram	Remarks
Case	Yield	Area	Yield	Area	Yield	Area	
Base 0	Not changed	Not changed	Not changed	Not changed	Not changed	Expand by	O&M Cost: 0.3%
						117,243ac	
						(47,446ha)	
Base 1	Not changed	Not changed	Not changed	Not changed	Not changed	Expand by	Benefit from road improvement is not
						117,243ac	considered
						(47,447ha)	O&M Cost: 0.3%
Base 2	Not changed	Not changed	Not changed	Not changed	Not changed	Expand by	Road benefit and machineries' remaining
						117,243ac	valueare considered.
						(47,448ha)	O&M Cost: 0.3%
Ext. Service	Increase	Not changed	Increase	Not changed	All yields to		Benefit from road improvement is not
	by 15% ^{*1}		by 13% ^{*1}		the Middle		considered.
					portion		O&M Cost: 0.3%
					(highest) one		
Road Only	This case cons	siders cost for ro	ad improvement	and the benefit	from the road in	nprovement only	
1	Other costs an	id benefits are n	ot taken into con	sideration			

Note;

^{*1} Yield increases were recorded by the pilot project under Development Study on Sustainable Agricultural and Rural Development for Poverty Reduction Programme in the CDZ, July 2010, JICA

1.2.4 Project Cost

As components of the project cost, those of the civil & structure construction, machineries procurement, engineering service, on-farm irrigation facilities and operation / maintenance are to be estimated. The project cost is subdivided into two portions, i.e., foreign currency (F/C) and local currency (L/C), where L/C portion is concerted into economic price by applying SCF. The composition of the project cost is shown in Table 1.2.7.

Total Project cost including contingencies, project management, miscellaneous and O& M (3% of the direct cost) is now estimated at 165,429 million Kyats at financial price, composed of foreign portion (FC) of 85,810 million Kyats and local portion (LC) of 79,619 million Kyats. As per the economic price, the total comes to 159,027 million Kyats composed of FC 85,810 million Kyats and LC 73,216 million Kyats. Concerning civil and structure construction cost, so-called direct cost, by irrigation system, Wegyi system shows the largest cost as 46,337 million Kyats for FC and 43,688 million Kyats for LC, followed by Taung Nyo, and South Nawin and lastly North Nawin.

Table 1.2.7 Financial and Economic Project Costs, '000Kyats

	F	NANCIAL PRIC	E	ECONOMIC PRICE			
Particulars	FC	LC	Total	FC	LC	Total	
	('000Kyat)	('000Kyat)	('000Kyat)	('000Kyat)	('000Kyat)	('000Kyat)	
North Nawin	8,853,517	9,131,937	17,985,454	8,853,517	7,502,789	16,356,306	
South Nawin	10,471,300	8,871,117	19,342,417	10,471,300	7,635,235	18,106,535	
Wegyi	25,984,725	20,352,398	46,337,123	25,984,725	17,703,744	43,688,469	
Taung Nyo	14,464,884	10,841,082	25,305,966	14,464,884	9,972,119	24,437,003	
Total of Above	59,774,426	49,196,534	108,970,960	59,774,426	42,813,887	102,588,313	
Machineries Procurement	14,785,510	147,855.1	14,933,365.1	14,785,510	146,376	170,713,785	
Engineering Service (DD)	2,838,040	729,824	3,567,864	2,838,040	722,526	3,560,566	
Engineering Service (SV)	4,326,290	1,112,540	5,438,830	4,326,290	1,101,415	5,427,705	
Physical Contingency (5%)	4,086,213.3	2,559,337.7	6,645,551.0	4,086,213.3	2,559,337.7	6,645,551	
Project Management (10%)		10,897,096	10,897,096.0		10,897,096.0	10,897,096	
Others (Miscellaneous) (5%)		5,744,258	5,744,258		5,744,258	5,744,258	
O&M (0.3%)		9,231,226	9,231,226		9,231,226	9,231,226	
Total	85,810,479	79,618,671	165,429,150	85,810,479	73,216,122	159,026,601	

Source: JICA Survey Team

Project Benefit

Table 1.2.8 summarizes the project benefit by irrigation system accrued in a year after completion of the rehabilitation works. The benefits are summarized by such cases of; benefit accrued by area expansion of black gram (no yield increase) corresponding to Base 0, benefit associated with road improvement corresponding to Base Road Only, combination of these 2 benefits (Base 1), benefit or counted as minus cost for the remaining value of the procured construction machineries which accrues one time in the following year of the construction completion (part of Base 2 benefit), and benefits which are expected with technical assistances targeting yield increase corresponding to the case of Ext. Service.

Table 1.2.8 Financial and Economic Project Benefits, '000Kyats

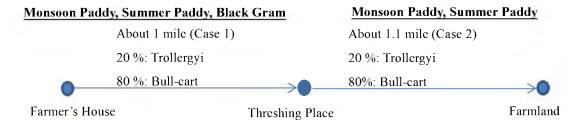
Table 1.2.0 Thianelal and Economic Floject Benefits, Countyats							
Particulars	North Nawin	South Nawin	Wegyi	Taung Nyo	Total		
FINANCIAL PRICE ('000 Kyats)							
1. Agriculture Production *1	5,692,712	8,696,585	369,657	3,739,194	18,498,149		
2. Road mprovement *2	192,632	215,183	1,284,633	1,441,516	3,133,963		
3. Black Gram + Road Improvement	5,885,344	8,911,767	1,654,291	5,180,710	21,632,112		
4. Remaining Machineries Value		7,320	0,111		7,320,111		
5. Ext. Service	7,664,040	11,881,902	10,466,036	6,226,693	36,238,671		
M-Paddy	4,944,875	7,315,882	4,121,669	1,695,319	18,077,744		
S-Paddy	699,707	1,462,419	1,109,387	275,747	3,547,260		
Black Gram	2,019,458	3,103,602	5,234,980	4,255,627	14,613,666		
ECONOMIC PRICE ('000 Kyats)							
1. Agriculture Production *1	7,166,753	11,706,649	503,737	4,833,729	24,210,868		
2. Road Improvement *2	148,029	213,166	1,271,787	1,427,100	3,060,082		
3. Black Gram + Road mprovement	7,314,782	11,919,814	1,775,524	6,260,830	27,270,950		
4. Remaining Machineries Value		7,246,910					
5. Ext. Service	6,648,095	10,591,617	10,508,589	9,279,506	37,027,807		
M-Paddy	3,859,592	5,873,535	3,419,459	3,940,552	17,093,138		
S-Paddy	421,371	896,780	702,199	174,835	2,195,186		
Black Gram	2,367,132	3,821,302	6,386,930	5,164,119	17,739,483		

Remarks: *1 family labor cost is considered (subtracted from the gross benefit). *2 benefit accrued from fuel reduction for transportation machineries. Source: JICA Survey Team

1.2.5 Benefit Calculation for Road Upgrade

1) Condition

Based on some field surveys by the Survey Team, the distance between villages ranges from 1 mile to 5 miles. Average distance between villages is therefore estimated at about 2-3 miles. Farmlands are located between villages, whereby total distance from a village to a farmland is estimated at 2.1 miles; 1 mile from a village to the intermediate point of the villages, 1.1 mile from the intermediate point to the farm land. The latter will be explained in case 2. About 20 % of farmers use engine transportation equipment, so called 'trollergyi', for their farm activities; their benefit is calculated in case 1. The remaining 80 % of the farmers still use traditional method of bull-cart transportation; their way of transportation can also receive benefit from the project explained in case 2 together with trollergyi transportation.



2) Calculation

a) Case 1: Transportation from Farmer's House to Threshing Place/Farmland

About 20% of the farmers use trollergyi for materials and harvest transportation in the project area according to information from the staff of ID and DOA. In case 1, the 20 % of farmers will be able to obtain profit by road upgrade in the project area, for those farmers who use trollergyi for paddy and material transportation instead of bull-cart. Before road upgrade, fuel consumption is high because high-output of engine is necessary for driving on bumpy road with low speed while decrease of fuel consumption can be expected with the road upgrade that trollergyi can run smoothly. Unit fuel consumption is calculated as follows.

Table 1.2.9 Basic Fuel Consumption before and after Road Upgrade

Нр	kW	Fuel consumption (kg/kW*hr)	Speed Diesel specific gravity (g/cc)		Consumption (lit/km)	(gallon /lit)	(km / mile)	Consumption (gallon/mile)
22	16	0.280	10	0.86	0.521	0.220	0.621	0.184548553
22	16	0.255	25	0.86	0.190	0.220	0.621	0.067228401

Source: the Survey Team (2013)

Cost of diesel is now about 4,000 Kyats per gallon, ad then, fuel cost before and after road upgrade is estimated as follows.

Table 1.2.10 Fuel Cost Estimation for Trollergyi before and after Road Upgrade

Consumption	Unit price of diesel	Cost	Co-efficient for Chinese
(gallon / mile)	(Kyats / gallon)	(Kyats / mile)	engine (X 1.2)
0.184548553	4,000	738	886
0.067228401	4,000	269	323

Source: the Survey Team (2013)

Transportation benefit in case 1 for monsoon paddy cultivation is calculated as follows.

Table 1.2.11 Trollergyi Transportation Benefit for Monsoon Paddy before and after Road Upgrade

Items	N. Nawin	S. Nawin	Wegyi	T. Nyo
No, of transportation for M. Paddy (times/ac)	2	2	2	2
No, of transportation for input of M. Paddy (times/ac)	0.5	0.5	0.5	0.5
Total transportation times for M. Paddy (times/ac)	2.5	2.5	2.5	2.5
Average distance from home in case 1 (mile/time/ac)	1	1	1	1
Transportation distance (x 2, mile)	5	5	5	5
Fuel cost before upgrade (kyat/ac: 10km/hr, x 886)	4,430	4,430	4,430	4,430
Fuel cost after upgrade (kyat/ac: 25km/hr, x 323)	1,615	1,615	1,615	1,615
Benefit for transportation (kyat/ac)	2,815	2,815	2,815	2,815
Sown Area for 1st year (ac)	27,679.15	26,886.33	19,455.36	16,611.77
Sown Area for 2nd year (ac)	25,489.39	23,949.60	10,096.25	18,988.74
Sown Area for 3rd year (ac)	0.00	21,872.73	10,876.81	14,380.80
Transportation benefit for 1st year (ac, 20%)	15,583,361	15,137,004	10,953,368	9,352,427
Transportation benefit for 2nd year (ac, 20%)	14,350,527	13,483,625	5,684,189	10,690,661
Transportation benefit for 3rd year (ac, 20%)	0	61,571,735	30,618,220	40,481,952
Sub-total	29,933,888	90,192,364	47,255,777	60,525,040
Total				227,907,069

Source: the Survey Team (2013)

Transportation benefit in case 1 for summer paddy cultivation is calculated as follows.

Table 1.2.12 Trollergyi Transportation Benefit for Summer Paddy before and after Road Upgrade

Items	N. Nawin	S. Nawin	Wegyi	T. Nyo
No, of transportation for S. Paddy (times/ac)	2	2	2	2
No, of transportation for input of S. Paddy (times/ac)	0.5	0.5	0.5	0.5
Total transportation times for S. Paddy (times/ac)	2.5	2.5	2.5	2.5
Average distance from home in case 1 (mile/time/ac)	1	1	1	1

Items	N. Nawin	S. Nawin	Wegyi	T. Nyo
Transportation distance (x 2, mile)	5	5	5	5
Fuel cost before upgrade (kyat/ac: 10km/hr, x 886)	4,430	4,430	4,430	4,430
Fuel cost after upgrade (kyat/ac: 25km/hr, x 323)	1,615	1,615	1,615	1,615
Benefit for transportation (kyat/ac)	2,815	2,815	2,815	2,815
Sown Area for 1st year (ac)	6,804.39	5,718.37	772.64	1,324.97
Sown Area for 2nd year (ac)	2,592.95	1,096.21	5,420.55	2,589.96
Sown Area for 3rd year (ac)	0.00	0.00	10,441.55	724.98
Transportation benefit for 1st year (ac, 20%)	3,830,872	3,219,442	434,996	745,958
Transportation benefit for 2nd year (ac, 20%)	1,459,831	617,166	3,051,770	1,458,147
Transportation benefit for 3rd year (ac, 20%)	0	0	5,878,593	408,164
Sub-total	5,290,703	3,836,608	9,365,359	2,612,269
Total				21,104,939

Source: the Survey Team (2013)

Trollergyi can come into the nearest place because it is cultivated in dry season. Transportation benefit in case 1 for black gram cultivation is calculated as follows.

Table 1.2.13 Trollergyi Transportation Benefit for Black Gram before and after Road Upgrade

Items	N. Nawin	S. Nawin	Wegyi	T. Nyo
No, of transportation for B. Gram (times/ac)	2	2	2	2
No, of transportation for input of B. Gram (times/ac)	0.5	0.5	0.5	0.5
Total transportation times for B. Gram (times/ac)	2.5	2.5	2.5	2.5
Average distance from home to farmland (mile/time/ac)	2.1	2.1	2.1	2.1
Transportation distance (x 2, mile)	10.5	10.5	10.5	10.5
Fuel cost before upgrade (kyat/ac: 10km/hr, x 886)	9,303	9,303	9,303	9,303
Fuel cost after upgrade (kyat/ac: 25km/hr, x 323)	3,392	3,392	3,392	3,392
Benefit for transportation (kyat/ac)	5,912	5,912	5,912	5,912
Sown Area for 1st year (ac)	13,779.39	26,886.33	18,233.47	16,611.77
Sown Area for 2nd year (ac)	20,520.61	23,949.60	5,221.16	18,988.74
Sown Area for 3rd year (ac)	0.00	21,872.73	2,925.63	14,380.80
Transportation benefit for 1st year (ac, 20%)	16,291,373	31,787,708	21,557,432	19,640,096
Transportation benefit for 2nd year (ac, 20%)	24,261,517	28,315,612	6,172,977	22,450,387
Transportation benefit for 3rd year (ac, 20%)	0	25,860,129	3,458,976	17,002,420
Sub-total	40,552,890	85,963,449	31,189,385	59,092,903
Total				216,798,627

Source: the Survey Team (2013)

b) Case 2: Paddy Transportation from Farmland to Threshing Place

During rainy season before the road upgrade, farmers out-source transportation works of harvested paddy with straw from farmland to all-weather road where threshing machine can be placed. After upgrade; transportation charge will decrease because trollergyi and/or threshing machine on a small truck can come to the nearest place to the paddy farmland but diesel cost of the trollergyi or the small truck shall be considered from the previous threshing place to the nearest place to farmland.

Minimum transportation charge for this work is about 20,000 Kyats/ac and maximum is about 100,000 Kyats/ac according to interviews to famers. All works are usually done by farm labors. For summer paddy cultivation, transportation of this type is required because of poor road condition during harvesting time. Two irrigation systems located at southern part of the project area, i.e. Wegyi and Taung Nyo, require such transportation work because annual rain fall amount is heavier than that of other 2 irrigation systems.

Table 1.2.14 Average Transportation Cost for Paddy with Straw from Farmland to Threshing Place

Minimum Cost (acre)	Maximum Cost (acre)	Average Cost (acre)
20,000 kyats	100,000 kyats	60,000 kyat

Source: the Survey Team (2013)

Table 1.2.15 Diesel consumption of Trollergyi / Small-medium truck for 1 mile

Нр	Unit Consumption	Speed	Consumption	Conversion	(km / mile)	Consumption
	(lit/hr)	(km/hr)	(lt/km)	(gal/lit)		(gal/mile)
22	0.047	25.0	2.030	0.220	0.621	0.719

Source: the Survey Team (2013)

Present diesel price is about 4,000 Kyats/gallon. Transportation distance ranges from 0.2 mile to 2 miles or more, then average transportation distance of 1 way is calculated at 1.1 mile. At least 2 times of round trips are necessary for 1 acre harvest of paddy, and therefore total 4 ways of transportation are required. For threshing machine transportation by a small truck, it requires only 2 ways of transportation while trollergyi transportation requires 4 ways. In order to keep benefit safety side, reduction of transportation cost is omitted for threshing machine transportation.

Table 1.2.16 Transportation Cost for Trollergyi from Track Loading Point to the nearest Place to Farmland

Transportation distance	Number of Trips for	Diesel Consumption	Diesel Price	Transportation
(mile)	transportation (times/acre)	(gal/mile)	(kyat/gal)	cost (kyat/acre)
1.1	4	0.067228401	4,000	1,183

Source: the Survey Team (2013)

Minimum cost for transportation is 20,000 Kyats per time, and transportation cost after upgrade is calculated as follows;

20,000 Kyats/ac + 1,183 Kyats/ac = 21,183 Kyats/ac

In addition to harvesting, input transportation will also be benefited. According to interview to farmers, input materials such as chemical fertilizer, compost, and gypsum are used. Total weight of these materials is estimated at about 1.1 ton. Harvest of paddy is not more than 2 tons/ac (yield of 50 - 70 per acre is obtained by survey, the maximum yield 70 basket x 20.9 kg/basket = 1,463 ton/ac). With straw, it could be 4 tons/ac, and then about 25% (1.1ton/4ton) of benefit of paddy transportation can be estimated as material input transportation benefit for monsoon paddy. In case of summer paddy, road condition is not so bad for material transportation, thus there would be no benefit for this works.

Table 1.2.17 Benefit of Road Upgrade for Summer Paddy (4 Irrigation Systems)

Items	Amount (Kyats)
Labor cost for paddy transportation before upgrade	60,000
Labor and trollergyi cost for paddy transportation after upgrade	21,183
Expected benefit	38,817

Source: the Survey Team (2013)

Table 1.2.18 Benefit of Road Upgrade for Monsoon Paddy (Wegyi and Taung Nyo irrigation systems)

Items	Amount (Kyats)
Labor cost for paddy transportation before upgrade	60,000
Labor and trollergyi cost for paddy transportation after upgrade	21,183
Expected benefit for paddy transportation after upgrade	38,817
Estimated cost reduction for input material transportation (38,817x0.25)	9,704
Total benefit after road upgrade	48,521

Source: the Survey Team (2013)

Based on benefits examined above, following table summarizes the benefit for paddy and material transportation;

Table 1.2.19 Summary of Benefit for Paddy Transportation from Farmland to Threshing Place

Table	T.E. 10 Cummuny	by mansportation noin Familianu to Threshing Flace			
Crops	Irrigation System	Items	1st Year	2nd Year	3rd Year
Monsoon	Wegyi	Sown Area (ac)	19,455.36	10,096.25	10,876.81
Paddy		Unit Benefit (kt/ac)	48,521	48,521	48,521
		Benefit (kt)	943,993,522	489,880,146	527,753,698
	Taung Nyo	Sown Area (ac)	16,611.77	18,988.74	14,380.80
		Unit Benefit (kt/ac)	48,521	48,521	48,521
		Benefit (kt)	806,019,692	921,352,654	697,770,797
	Sub-total		1,750,013,215	1,411,232,800	1,225,524,495
Summer	North Nawin	Sown Area (ac)	6,804.39	2,592.95	0.00
Paddy		Unit Benefit (kt/ac)	38,817	38,817	38,817
		Benefit (kt)	264,126,007	100,650,540	0
	South Nawin	Sown Area (ac)	5,718.37	1,096.21	0.00
		Unit Benefit (kt/ac)	38,817	38,817	38,817
		Benefit (kt)	221,969,968	42,551,584	0
	Wegyi	Sown Area (ac)	772.64	5,420.55	10,441.55
		Unit Benefit (kt/ac)	38,817	38,817	38,817
		Benefit (kt)	29,991,567	210,409,489	405,309,646
	Taung Nyo	Sown Area (ac)	1,324.97	2,589.96	724.98
		Unit Benefit (kt/ac)	38,817	38,817	38,817
		Benefit (kt)	51,431,360	100,534,477	28,141,549
	Sub-total		567,518,902	454,146,090	433,451,195
Total (kyat)			2,317,532,116	1,865,378,890	1,658,975,690
Grand Total (kyat)					5,841,886,696

Source: the Survey Team (2013)

c) Total Benefit

Based on the calculation aforementioned, benefit by road upgrade is summarized as follows. As is shown in the table, total benefit for road upgrade will arrive at 6.3 billion Kyats.

Table 1.2.20 Summary of Benefit by Road Upgrade for all Irrigation Systems

Work Types	Crops	rrigation	1st Year benefit	2nd Year	3rd Year	Total (kyat)
vvoik Types	Clops	System	(kyat)	benefit (kyat)	benefit (kyat)	Total (Kyat)
Village to	Monsoon	North Nawin	15,583,361	14,350,527	0	29,933,888
mid-point	Paddy	South Nawin	15,137,004	13,483,625	61,571,735	90,192,364
		Wegyi	10,953,368	5,684,189	30,618,220	47,255,777
		Taung Nyo	9,352,427	10,690,661	40,481,952	60,525,040
		Sub-total	51,026,160	44,209,002	132,671,907	227,907,069
	Summer	North Nawin	3,830,872	1,459,831	0	5,290,703
	Paddy	South Nawin	3,219,442	617,166	0	3,836,608
		Wegyi	434,996	3,051,770	5,878,593	9,365,359
		Taung Nyo	745,958	1,458,147	408,164	2,612,269
		Sub-total	8,231,268	6,586,914	6,286,757	21,104,939
	Black Gram	North Nawin	16,291,373	24,261,517	0	40,552,890
		South Nawin	31,787,708	28,315,612	25,860,129	85,963,449
		Wegyi	21,557,432	6,172,977	3,458,976	31,189,385
		Taung Nyo	19,640,096	22,450,387	17,002,420	59,092,903
		Sub-total	89,276,609	81,200,493	46,321,525	216,798,627
	Total		148,534,037	131,996,409	185,280,189	465,810,635
Harvest and	Monsoon	Wegyi	943,993,522	489,880,146	527,753,698	1,961,627,366
material	Paddy	Taung Nyo	806,019,692	921,352,654	697,770,797	2,425,143,143
transportation		Sub-total	1,750,013,214	1,411,232,800	1,225,524,495	4,386,770,509
	Summer	North Nawin	264,126,007	100,650,540	0	364,776,547
	Paddy	South Nawin	221,969,968	42,551,584	0	264,521,552
		Wegyi	29,991,567	210,409,489	405,309,646	645,710,702
		Taung Nyo	51,431,360	100,534,477	28,141,549	180,107,386
		Sub-total	567,518,902	454,146,090	433,451,195	1,455,116,187
	Total		2,317,532,116	1,865,378,890	1,658,975,690	5,841,886,696
Grand Total			2,466,066,153	1,997,375,299	1,844,255,879	6,307,697,331

Source: the Survey Team (2013)

1.3 Cases for Sensitivity Analysis

Aside from above basic cases, there should be a sensitivity analysis to know to what extent the project variability is affected by such factors as hike of construction cost, reduction of benefit, delay of construction schedule whereby delaying the benefit to take place, etc. Table 5.2.2 shows the cases of sensitivity analysis where total 5 cases are to be examined against a base case, which is Base 1 where the benefits from area expansion of black gram and road improvement are taken into account. The 5 cases are; cost increase by 10%, benefit reduction by -10%, cost increase together with benefit reduction of each 10%, construction delayed by 2 years, and increase of O & M cost to 3% from the base 0.3% of the initial investment cost:

1.4 Result of the Project Evaluation

Table 2.2.3 shows the results of the economic analysis; EIRR shows up over 15% in all the cases including the Base 0 where only area expansion of black gram is counted as the project benefit. By case, the minimum EIRR shows up in Base 0 as 19.4%, and then Base 1 shows 22.2% up by 2.8% from the Base 0 by undertaking the benefit from road improvement. By considering the remaining value of procured machineries, not much hike in EIRR takes place as indicated in Case Base 2, only 0.7% top up on the Base 1.

Table 1.4.1 Case for Sensitivity Analysis (Conditions)

Case	Cost	Benefit	Base Cost and Benefit	Remarks
SA 1 (C+10%)	+10% of Base 1	No change from Base 1	Base 1	O&M Cost: 0.3%
SA 2 (B-10%)	No Change from Base 1	-10% of Base 1	Base 1	O&M Cost: 0.3%
SA 3 (C+10B-10)	+10% of Base 1	-10% of Base 1	Base 1	O&M Cost: 0.3%
SA 4 (+2years)	Construction completion delay	ed by 2 years	Base 1	O&M Cost: 0.3%
SA 5 (O&M Cost up)	Increase of O&M Cost: 3% of o	direct construction cost	Base 1	

Table 1.4.2 Summary of Case Study (Project Evaluation)

			any or oute claury in						
Conn		Economic analysis		Financial Analysis					
Case	EIRR	NPV (Million Kyat)	B/C	EIRR	NPV (Million Kyat)	B/C			
Base0	19.4%	48,894	1.48	12.7%	4,948	1.04			
Base1	22.2%	67,176	1.66	15.3%	24,089	1.22			
Base2	22.9%	71,016	1.72	15.9%	27,797	1.26			
Base3 (Ext.Service)	22.8%	78,645	1.73	17.0%	38,299	1.34			
Base4 (Road Only)	32.6%	11,100	2.42	32.9%	11,290	2.45			

CHAPTER 2 FARM BUDGET ANALYSIS: INCOME INCREASE PER FARMER HOUSEHOLD WITH PROJECT

Above discussion centered on the project economic justification from the view point of what extent the project contributes to in the national economy. As concluded, the Project was justified by showing high return of investment, higher than the opportunity cost of 12-15% applied in most of developing countries. Here in this section, the extent of how the project benefits in the beneficiary's income is explored by comparing the net income between the present (without-project) and the after the project has been completed (with-project).

To explore the change with project at the level of farmer household, we should establish a model farmer's farm budget. To know the model farm budget, a typical average farmer's agricultural income should be estimated. In the project economic analysis as discussed before, current net agricultural benefit and the benefit with project (both in financial term) have been estimated at the level of irrigation system, and the present and with-project benefits can further be calculated by the location where the farmers do farming such as upstream, midstream and downstream.

The upper part of Table 2.1.1 summarizes the net benefits without- and with-projects, which are shown by irrigation system and further by location. As for the number of farmer households, there is no data available. However, a sample household survey conducted by JICA team, which had covered 225 households, has made out the area of farmlands of the sampled farm households. Dividing the irrigation scheme's irrigable area by the farmland area, already averaged by scheme and by location, we can estimate the number of famers (see the mid part of Table 2.1.1).

With the estimated number of famers by system and by location, a typical average famer's benefit can now be calculated by dividing the net benefits for with- and without-projects with the number of farmers. The results are summarized in the bottom part of Table 2.1.1. As shown, a typical average farmer at present, namely without project, fetches net income ranging from 1.2 million Kyats (downstream of South Nawin) to 3 million Kyats (midstream of North Nawin) with an overall average net income of 1.88 million Kyats.

The net income of 'with-project' would increase to a range of 1.7 million Kyats (upstream of Wegyi) to as much as 5.8 million Kyats (midstream of North Nawin) with an overall average net income of 2.81 million Kyats. It is by percentage concluded that the net income per farmer household would increase by 104% (Wegyi) to as much as 184% (South Nawin) by irrigation system with an overall increase of 150%. With the project, overall farmer's income would therefore increase by 1.5 times, presenting a great impact on the beneficiary farmers' income

Table 2.1.1 Farm Budget Analysis (Farm Net Benefit Increase per Farmer)

Table 2.1.1 Farm Budget Analysis (Farm Net Benefit Increase per Farmer)												
Particular	N. Nawin	S. Nawin	Wegyi	T. Nyo	Total							
Net Benefit without Project (Kyats)	9,382,466,365	12,602,248,547	11,294,887,739	10,611,688,279	43,891,290,930							
Upstream Benefit (Kyats)	5,086,780,059	5,858,977,188	5,497,082,916	3,693,616,741	20,136,456,904							
Midstream Benefit (Kyats)	4,295,686,306	3,139,858,430	2,773,005,601	4,331,450,892	14,540,001,229							
Downstream Benefit (Kyats)	0	3,603,412,929	3,024,799,222	2,586,620,646	9,214,832,797							
Net Benefit with Project (Kyats)	14,982,533,756	23,136,984,480	11,735,472,055	15,992,839,829	65,847,830,120							
Upstream Benefit (Kyats)	6,869,877,048	8,939,575,277	5,893,990,715	5,286,424,648	26,989,867,688							
Midstream Benefit (Kyats)	8,112,656,708	8,707,962,035	2,773,005,601	7,018,052,940	26,611,677,284							
Downstream Benefit (Kyats)	0	5,489,447,168	3,068,475,739	3,688,362,241	12,246,285,148							
Net Irrigable Area (acre) 1/	53,168.54	72,708.66	40,428.42	49,981.31	216,286.93							
Upstream Area (acre)	27,679.15	26,886.33	19,455.36	16,611.77	90,632.61							
Midstream Area (acre)	25,489.39	23,949.60	10,096.25	18,988.74	78,523.98							
Downstream Area (acre)	0	21,872.73	10,876.81	14,380.80	47,130.34							
Average Farmland (acre/FHH 2/	12.72	8.28	8.01	9.28	9.91							
Upstream Area (acre/FHH)	9.90	8.22	5.50	11.48	8.89							
Midstream Area (acre/FHH)	18.23	9.30	9.37	8.15	12.06							
Downstream Area (acre/FHH)	10.03	7.31	9.17	8.22	8.77							
No. of FHHs	4,180	8,781	5,047	5,386	23,394							
No. of FHHs (upstream)	2,796	3,271	3,537	1,447	11,051							
No. of FHHs (midstream)	1,398	2,575	1,078	2,330	7,381							
No. of FHHs (downstream)	0	2,992	1,186	1,749	5,928							
Per Farmer Household	N. Nawin	S. Nawin	Wegyi	T. Nyo	Total							
Net Benefit without Project (Kyats/FHH)	2,244,654	1,435,133	2,237,833	1,970,266	1,876,152							
Upstream Benefit (Kyats/FHH)	1,819,388	1,791,274	1,554,017	2,552,571	1,822,127							
Midstream Benefit (Kyats/FHH)	3,072,273	1,219,256	2,573,536	1,859,066	1,969,963							
Downstream Benefit (Kyats/FHH)	NA	1,204,283	2,550,142	1,478,501	1,554,516							
Net Benefit with Project (Kyats/FHH)	3,584,410	2,634,820	2,325,125	2,969,381	2,814,694							
Upstream Benefit (Kyats/FHH)	2,457,149	2,733,110	1,666,222	3,653,323	2,442,285							
Midstream Benefit (Kyats/FHH)	5,802,168	3,381,436	2,573,536	3,012,160	3,605,502							
Downstream Benefit (Kyats/FHH)	NA	1,834,607	2,586,965	2,108,251	2,065,913							
Ratio b/t with & without Project (%)	160	184	104	151	150							
Upstream Area (%)	135	153	107	143	134							
Midstream Area (%)	189	277	100	162	183							
Downstream Area (%)	NA	152	101	143	133							

Note: the downstream area of North Nawin is supplied with irrigation water by South Nawin irrigation system, and therefore the downstream area of North Nawin is counted at Nil producing no benefit therein but counted in the benefits of South Nawin. Source; 1/Irrigation Department, 2/ Sample Survey (225 households), JICA

TABLES OF PROJECT EVALUATION

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Table 3.1.1 Project COST Estimation (Financial / Economic)-Base 0

			52014	笙			2015	年			20162	4			2)(7 °		2016#			
		Fina	reign	Conveyion		Finan	cial	Conversion		Finen	rial	Conversion		Finan	ce	Consumsion		Anan	182	Converteels	
		FC	ic	Factor	France	FO	LC	Factor	Economic	FC	LC	Pactor	Economic	ic.	VE	Factor	Economic	FC	1C	Factor	Ecomone
Highth (4	nwe	5,670,592		100	* 670 *92	7.157.825	(4)	100	1 259.825	915,100		1.00	923 100								
	Total	1.5	654617		× 10=801	-	1,937,549	-	16 99 906		167.11		44.481	- 3	1	-					
LC	Materia		1297 000	149	1 279 080		T(-98)	0.99	763 633		TEAR.	7 59	364.731			-		-			
-	Skilled Labor		0.19,576	9:00	1 19 876		461 P.S	190	46 8 8		190,500	3.00	Jan 339				9			- 3	
	Unskilled Labor		3014.70	1000	1 808 845		698,205	0.66	418 99 5		199,011	0.40	179 408								
South N	lawin	1,490,000	4	100	1 192 202	4,508,857	7	190	4,319,837	4,569,261		11 (29)	4 169 261								
	Total-	-	1,546,420		1 199 850	-	5,111,566		2986 175		3,880,141	_	3,355.230		- 4		-				
LC	Material		1) - 229	199	108.113	-	14(1)	0.99	1.281 506		F76-242	//90	1944,600			-)		7	
20	Skilled Lakes		414,491	1/00	411.48		14) (47	196	31.00		240,000	11.00	849.49.					- 9			
	Unskilled Labor	=	615,643	956	370,986		1,106,941	0.69	663 624		1261.197	1/60	760 918				-	3			
Weg	y								- 4	4.525,734		100	9,941 184	6.559.569		100	8 489 769	7,449,172		1.00	1,49,11
	Total			4			9	-	3	3	8,576,719		-11,691		0,387,654		+684 899	-	5387325		4773,85
	Material										15934	299	3 119 728		4(0)(6)	299	3,567,428		394 (106	0.99	2915.06
LC	Stalled Links										_170489	140	116 689		11/1963	150	1.11 7.091		usa 5k	(8)	988.25
	Unskilled Lober										7,210,750	7/80	1,949,174		166,300	0.60	1 100,581	- 9	1,465,661	(rad)	3 - 23
Taung	Nyo								1	1.455,590		700	4.855,500	3.886,708		100	£886,108	3,712,676		100	3,222,67
	Total				1						1,827.82)		3 164,679		1,531,506		4 469 84		2721,766		2 (3 7 59)
	Mittinal										(1000,(2))	T 90	_018.31°		965,010	1.99	1000		1) %)(984	130	1820 - **
LC	Skilled Labou				1			-			411,092	100	5/3 099		148 1651	100	278.465		101	1,003	3 8 16
	Unskilled Lab										855,572	A-60	513.23		401.125	1.60	138,615		*(2)	9.60	338 65
Sub Tetak	FC LC	383,794	7,873,634		13,661,122	6,567.663	4,382.015		11,204,948	20,295,645	1617-117		34.8(* ***	(4.456,47*	(0)919349		(44)),124	1),17(,848.	3,149,580		(8 48 - 19
Machine	ernes	5,914,004		3.00	15,914/200	4471306		198	5,371,306								1				
Procure			- 0	5,99	- 4	-	147,885	0.99	(16.372												
Engineering	Sonero	-																		•	
Engineering			- 3			2.858,040		1:00	2858.040					_							
Lightering		-	1	1		- SIRVEY	129-824	0.99	212.526				-		-			-	-		
Seamering 5	Principal (Maragina)					11610	(97.061)	1.00	1142.140	1,141,446		100	1100.00	indse.		900	1,92149	1.142,140		1.00	(1Gas
and the same of	- Arati		1			33440	293,710	0.99	290,773	1,000	293,510	199	280,775	1010000	293,710	199	290 773	149/08	293,745	11.99	290,17
. 2.0		100000	10755		Tarene I	Dografies.	11000			10000				Some I	- 1			1,000			
Total	31	13,176,998	7,873,037		19.478.639	(9,419,538	6,553,594		21.654.939	41,337,785	15 [46 13]		36 38 640	15.0(8.5)	1123226		1=864.13+	12.3 (3,988	8 #63,19		(4.055.50
Physical Contingency	N	653,850	193.652		918.931	976;957.400	327,675,300		1.012,746.950	1.071,189126	857,307,600		1 811,93,2000	186,930.856	561654		1 193 10 ^T	615,699 480	973(164.59)		99577540
ProjectManagement (FC+LC)	10%	26.779	187,340		1,566,443	656,765,200	538,2(1.50)		1.120(174.38)	2,029,564,500	1 685 144 100		3 480,572 700	t-447.647.700	1 091,934		1443 177	1.117,184 8197	886.958.000		1,848359.50
Sub-Total		14,562.12)	97353,993		21,924,003	21.648371.863	1,119,398,300		15 858 120	14.539.139	19 688 (70)		41 531 145	17.847 105 556	12365.666		29 000 485	14.046.872.240	4,163,712,560	Ī	20159.54
Grand-Titlal(FC=LC)			27/19/129				38.466(362				44,227,943				3 11 18 14				10,250,285		
O8M	93%					39.551	73.00		287/5.887	≠ 784.434	43 119 673	1	123,100 104	H-2 (0) 193	94 18 659		252.416.621	200.951.644	128357189		310 009 03
ОбМ	100					39,353	23,615		(26/12/66)	3 /08/138	45.119.013		142,000,004	115 mm (85	94 18 65	-	con amper	100,95 641	12002 - 139		510,02935

Table 3.1.2 Project Cost and Benefit Estimation -Base 0

Particulars		FC/LC	Total	Ratio %	2014	2015	2016	2017	2018	2019	2020	Remarks
mp em entation				11-30 290				20	2.7-47.1	0.7575	.00000.	- District States
1 Civil & Structure Construction							1					
1 1 North Nawin		FC	8 853 517 000	49	5 670 592 000	2 257 825 000	925 100 000					
		LC	9 131 937 000	51	6 326 617 000	1 937 549 000	867 771 000					
		(unskilled labors)	4 012 079 000	44	3 0 14 74 1 0 0 0	698 325 000	299,013,000					
		Sub Total (FC+LC)	17,985,454,000	100	11,997,209,000	4 195 374 000	1,792,871,000	0				
1.2 South Nawin		FC	10,471,300,000	54	1.592.202.000	4 309 837 000	4.569.261 000					
		LC	8 871 117 000	46	1,546,420,000	3 444 566 000	3.880,131 000					
		unskilled labors)	2 992 881 000	34	618,643,000	1,106,041,000	1.268 197 000					
		Sub Total (FC+LC)	19,342,417,000	100	3,138,622,000	7 754 403 000	8,449,392 000	0				
1 3 Weg yi		FC	25 984 725 000	56		20. 15.	9 945 784 000	8 589 769 000	7 449 172 000			
		LC	20 352 398 000	44			8 576 7 19 000	6 387 854 000	5 387.825 000			
		runskilled labors)	6 379 155 000	31			3.248 790 000	1 667 300 000	1 463 065 000			
		Sub Total (FC+LC)	46 337 123 000	100			18 522 503 000		12 836 997 000			
1.4 Taung Nyo		FC	14 464 884 000	57			4.855 500 000	5 886 708 000	3 722 676 000			
• ,		LC	10,841 082 000	43			3 527.82 1 000	4 531 506 000	2 781 755 000			
		runskilled labors)	2 348 591 000	22			855,372 000	928 794 000	564 425 000			
		Sub Total (FC+LC)	25 305 966 000	100			8 383 321 000	10 418,214 000	6 504 431 000			
Total of Civil & Structure Construction		FC	59 774 426 000	55	7,262,794,000	6 567 662 000	20,295,645,000		11 171 848 000			
		LC	49,196,534,000	45	7,873,037,000	5 382 115 000	16,852,442,000		8 169 580 000			
		(unskilled labors)	15,732,706,000	32	3,633,384,000	1 804 366 000	5,671,372 000	2,596 094 000	2 027 490 000			
		Total (FC+LC)	108 970 960 000	100	15,135,831,000	11,949,777,000		25.395 837 000				
2 Machineries Procurement		FC	14,785,510,000	99	5,914,204,000	8 871 306 000	37,1110,001.000	20.000 00. 000	10 041 420 000			
		LC	147 855 100	-1	0,011,201,300	147 855 100						
		Total (FC+LC)	14,933,365,100	100	5 9 14 204 000	9 0 19 161 100	0	o o				
5 Engineering Service		Joan II G. LGY	0	100	3314204000	3 0 13 10 1100	9	,				
5.1 Engineering Service (DD)		FC	2 838 040 000	80		2 838 040 000						
C. Engineering control (E.S.)		+C	729 824 000	20		729 824 000						
		Total (FC+LC)	3 567 864 000	100		3 567 864 000	0	0				
5.2 Engineering Service (SV)		FC	4 326 290 000	80		1 142 140 000	1 142 140 000	1 142 140 000	899.870.000			
3.2 Engineering derivee (3.4)		LC	1 112 540 000	20		293 710 000	293,710 000	293 710 000	231,410,000			
							0: -					
		Total (FC+LC)	5 438 830 000	100		1,435,850,000	1 435 850 000	1 435 850 000	1 131,280 000			
1.1 Total of 1, 2, 5 (FC)		FC	04 704 000 000	61	*2 *70 000 000	10 410 140 000	01 407 705 000	15,618,617,000	12 071 718 000			
00 MW3 F4			81,724,266,000		13,176,998 000	19 419 148 000	21,437,785,000		Par 111 - VI			
1.2 Total of 1, 2, 5 (LC)		LC	51,186,753,100	39	7,873,037,000	6,553,504,100	17,146,152,000	11,213 070 000	8,400,990,000			
1.3 Total of 1.2.5 (Unskilled Labors)		(unskilled labors)	15,732,706,000	31	3,633,384 000	1,804,366,000	5,671,372,000	2,596 094 000	2,027,490,000			
1.4 Total of 1.2.5 (Gland Total)		Total (FC+LC)	132,911,019,100	100	21,050,035,000	25,972,652,100	38,583,937,000	26,831,687,000	20,472,708,000			
TC 124 124 134	9.1											
2 1 Physical Contingency (5% of 1.1)	5%	FC	4 086 213 300	61	658,849 900	970,957,400	1,071,889.250	780 930 850	603,585,900			
2.2 Physical Contingency (5% of 1.2)	5%	LC	2,559,337,655	39	393,651,850	327,675,205	857,307 600	560 653 500	420,049,500			
2.3 Physical Contingency (5% of 1.3)	5%		786,635,300	31	181,669,200	90,218,300	283,568 600	129 804 700	101,374,500			
2.4 Physical Contingency (5% of 1.4)	5%	Total (FC+LC)	6 645 550 955	100	1.052.501750	1 298 632 605	1.929.196 850	1 341 584 350	1 023 635 400			
3 1 Total of 1 1 & 2 1		FC	85,810,479,300	61	13,835,847,900	20 390 105 400	22,509,674.250	16,399,547,850	12,675,303,900			
3.2 Total of 1 1 & 2 2		LC	53,746,090,755	39	8,266,688 850	6 881 179 305		11,773 723 500	8 821 039 500			
33 Total of 1 1 & 2 3		(unskilled labors)	16 519 341 300	31	3,815,053,200	1 894 584 300	5 954 940 600	2,725 898 700	2 128 864 500			
3 4 Total of 1 1 & 2 4		Total (FC+LC)	139 556 570 055	100	22 102 536 750	27 271,284,705		28,173.271,350				
3 T (U(a) U() 1 0 2 T		TOTAL (FOTEG)	159 550 5 (0 025	- 100	22 402 336 (50	21 211,204 105	40 D 13 133 650	20/09/02/04/050	21 450 343 400			
4 Project Management (10% of 1)	10%	LC	10,897,096,000	100	1,513,583,100	1,194,977,700	3,714,808,700	2,539 583 700	1 934 142 800			
5 Others (Miscellaneous 5% of 1-2)	5%	LC	5 744 258,200	100	1.052.501.750	597 488 850	1857,404 350	1 269 791 850	967 071 400			
o one o management of a contract of the contra	J-10		5 / 11 255,250	100	1,002,00 1,100	551, 100,050	331,101,330	. 200 / 0 / 000	55. 5. 1,400			
6 T Grand Total Cost for Project Evaluation		FC	85,810,479,300	55	13,835,847,900	20 390 105 400	22,509,674,250	16.399 547 850	12,675,303,900			
6.2 Gland Total Cost for Project Evaluation		LC	70,387,444,955	45	10,832,773,700	8 673 645 855	23,575,672,650	15,583 099 050	11,722,253,700			
63 Grand Total Cost for Project Evaluation		Total (FC+LC)	156,197,924,255	100	24,668,62 1,600	29 063,751,255	46,085,346,900	31,982,646,900				
27			. 47-14-74-00	,	- //// //							
	4.4					* * * * * * * * * * * * * * * * * * * *						

articulars enest	FC/LC	Total	Ratio %	2014	2015	2016	2017	2018	2019	2020	Remarks
riculture Production			_		-						
North Mawin	1		_		1						
1.1 Black Gram											
1.1 T Black Gram (a) Increase of Sawn Area (ac) (b) Gross Profit (K(Jac)					10,192.16	15,178.42	328,000	328,000			
(c) input Cost (kt/ac)					328,000	37.086	328,000	328,000			
(d) Family Labor (krac)					37 086 28 258	28.258	37,086 28,258	37,086 28,258 37,188			
(e) Hired Labor (kt/ac) (f) Unit Net Profit (kt/ac)					36 535	39.441	350 44.1	37.188			
(f) Unit Net Profit (kVac)					226 121	223 215 3,388,051,020 5,692,712,431	223,215	225,468			
(0) Net Profit (kt) (n) Accumulated Met Profit (kt) (2) youth Nawin					2,304,661,411 2,304,661,411	3,388,051,020	0	0			
(h) Accumulated 11st Profit (RL)					2,304,661,411	5,692,712,431	5,692,712,431	5,692,712,431	5,692,712,431	5,692,712,431	
2 Youth Nawin 1 2 1 Black Gram								91111			
(a) Increase of Sawn Area (ac)					17.608.66	22 141 91	18,705 22	0.00	0.00		
/b) Cross Profit (40/2c)	-		-		250,167	22,141,91	250 167	250.163	0.00		
(b) Gross Profit (t(Vac) (c) Input Cost (kVac)					38 584	30 602	250,167 38,684	38.684			
(d) Family Labor (kilac)					38,684 26,176 36,535	26.176	26,176 36,535	26.176			
(e) Hired Labor (kt/ac)					36,535	250 167 38,684 26 176 36,535	36,535	250,167 38,684 26,176 36,535			
(f) Unit Net Profit (kt/ac)					148,772	148 772	1.48 777	148,772			
(g) Net Profit (Kt)					2,619,675,566	3,294,096,235	2,782,812,990 8,696,584,791	0			
(h) Accumulated Net Profit (kt) 3 Wegyi					2,619,675 566	5,913,771,801	8,696,584,791	8,696,584,791	8 696 584 791	8,696 584 791	
1 3 1 Black Gram					_						
(a) Increase of Sawn Area (ac)							2 269 72	0.00	433 17		
(b) Gross Profit (Klac) (c) Input Cost (Klac)	1		1		-		2,268 72 250,167 38,684 26,176 36,535	328 000 37 086	153,494 15,476		
(c) Input Cost (KVac)							38,684	37 086	15,476		
(d) Family Labor (kl/ac)							26,176	28.258 39.441	26,644 37,188	3.1	
(e) Hired Labor (kt/ac) (f) Unit Net Pront (kt/ac)							36,535		37,188		
(f) Unit Net Front (RI/ac)					2		148,772	223.215	74 186		
(g) Net Profit (kt) (h) Accumulated Net Profit (kt)			-		+		337,522,012 337,522,012	337,522,012	32,135,150 369,657,162	369.657.162	
	+		_		+		337,522,012	337,522,012	309,057,162	308,007,102	
1 4 1 Black Gram											
(a) Increase of Sawn Area (ac)	1						9,104.47	10 683 44	10,926 80 153,494		
(a) Increase of Sawn Area (ac) (b) Grass Pront (N/ac) (c) Input Cost (K/ac)							9,104,47 250,167	328,000	153,494		
(c) Input Cost (kl/ac)							38.684	37.086	15.476		
(d) Family Labor (kVac)							26,176	28,258	26.644		
(e) Hired Labor (kt/ac) (f) Unit Net Profit (kt/ac)							36,535	39,441	37,188		
(f) Unit Design of the Color (Ruse) (g) Net Profit (Ru) (h) Accumulated Net Profit (Rt) SUB-rotal of Cirop Benefit (Rt) Road Improvement 1 North Nawn					-		148 772	223 215	74,186		
(h) Accumulated Net Profit (kt)			1		_		1,354 490,211	2 384 704 060 3 739 194 271	810.615.585 4,549,809,856	4.549.809.856	
Sub Total of Crop Benefit (kt)			1		4.924.336.977	11,606,484,232	16,081,309,445	18,466,013,505	19,308,764,240	19.308.764.243	
Road Improvement					1,000,000,000			10,300,000,000	10,000,000		
1 North Nawin											
1.1.1 Monsoon Paddy for threshing											
(a) Area Improved (ac)					0	0	0		0		
(b) Cost before Rehabilitation (kt) (c) Cost after Rehabilitation (kt) (d) Net Profit (kt)					0	0	0		0		
(d) Nat Profit (Profit (A))					0	0	0	0	0		
		-				0		-	0		
(a) Area Improved (ac) (b) Cost before Rehabilitation (kt) (c) Cost after Rehabilitation (kt)	-				2,998.44	7 110 53	0.00	0.00	0.00	0.00	
(b) Cost before Rehabilitation (kt)					2,998 44 179,906,400	66,631,800	0	0	0	0	
(c) Cost after Rehabilitation (kt)					63,515,955	23,524,357	0	0	0	0	
					63,515,955 116,390,445	23,524,357 159,497,888	159,497,888	159 497 888	159,497,888	159 497 888	
1.3 Improvement of Trollergy Driving Condition (a) Monsoon Pacity Cultivation (kyat)					9.551.109						
(a) Monsoon Paddy Cultivation (kyat) (b) Summer Paddy Cultivation (kyat)					9,551,109	3,537,447 625,228	0				
(c) Strank Gram Gullivation (kyat)	-				1,688,122	625,228	U				
(c) Black Gram Cultivation (kyat) (d) Accumulation above (kyat)	+				12,939,351 24,178,582	4,792,358 33,133,615	33,133,815	33,133,615	33,133,615	33,133,615	
2 South Nawin					24 176 562	33,133,019	39,133,010	34,133,019	33,133,015	33,133,013	
1.2.1 Monsoon Paddy					-						
(a) Area Improved (ac)					0	0	0	0	0		
(b) Cost before Renabilitation (kt) (c) Cost after Renabilitation (kt)					0	0	0	0	0	i in	
(c) Cost after Rehabilitation (KI)					0	0	0	0	0		
(d) Net Profit (41) 1.2.2 Summer Paddy					0	0	. 0	0	0		
122 summer Paddy					0.019.10	1,464,45	0.00	0.00	0.00	0.00	
(a) Area Improved (ac) (b) Cost before Rehabilitation (kt)					2,245.49 134.729,400 47,566,215	97 867 000	0.00	0.00	0.00	0.00	
(c) Cost after Rehabilitation (kt)					47 566 215	31 021 444	0	0	0	0	
td) Net Profit (Rf)					87,163,185	87,867,000 31,021,444 144,008,741	144,008,741	144,008,741	144,008,741	144,008,741	
122 Imara amont of Trollogay Drugge Condition									The state of the s		
(a) Mons oon Paddy Cultivation (kyat) (b) Summer Paddy Cultivation (kyat) (c) Black Gram Cultivation (kyat)					13,488,602	8,796,914	D				
(b) Summer Paddy Cultivation (kyat)					1,264,211	824,485	0				
(c) Black Gram Cultivation (kyat) (d) Accumulation above (kyat)					1,264,211 28,326,064 43,078,877	824,485 18,473,520 71,173,796	71,173,796	71,173,798	71,173,796	71.173.796	
L Warry	1		1		43,078,877	71,173,796	71,173,796	71,173,796	71,173,796	71,173,796	
1.1 Mansoon Paddy					_						
(a) Are a Improved (ac)					7		13 413 39	5,412,42	0.00	0.00	
(a) Are a Improved (ac) (b) Cost before Rehabilitation (kt)							074 088 037	5,412.42 377.267.324	0	0	
(c) Cost after Rehabilitation (Kt) (d) Net Profit (Kt)							284,135,840 650,831,097	913 447 128	0	0	
(d) Net Profit (KI)							650.831.097	913,447,128	913.447.128	913,447,128	
13.2 Summer Paddy											
(a) Area Improved (ac) (b) Cost before Rehabilitation (kt)							772.64 46.358.400	5,420 55 325,233,000	1,602,91 96,174,600	0.00	
(c) Cost after Rehabilitation (kt)	t -		-				16,366,833	114 823 511	33.954.443	0	
(c) Cost after Renabilitation (K()) (d) Net Profit (Kt)	-		-				29,991,567	240.401.056	302,621,213	302 621 213	
3.3 Improvement of Trolleroy Driving Condition			1		1						
(a) Nonsoon Paddy Cultivation (kyal) (b) Summer Paddy Cultivation (kyal) (c) Black Gram Cultivation (kyal)							7,551,739	3 047 192 3 051 770 4 175 529 28,609 271	30,618,220		
(b) Summer Paddy Cultivation (kyal)							434,996	3 051 770	5,878,593		
(c) Black Gram Cultivation (kyat)							10 348 045 18 334 780	4 175 529	5,878,593 3,458,976 68,565,060		
(d) Accumulation above (kyat) Taung Nyo					To the second		18,334,780	28,609,271	68,565,060	68,565,060	
Taung Nyo 4.1 Monsoon Fladdy											
4.1 Monsoon Fladdy (a) Area Improved (ac)							16,499.76	10,233.56		0 00	
(a) rea improved (ac)			+		-		1, 150,099,271	/ 13 320 066	0.00	0 00	
(b) Cost before Rehabilitation (kt) (c) Cost after Rehabilitation (Rt)	+		-		+		1,150,099,271	7 13 320 066	Q.	- 2	
	+		-				800,584,855	216 /// 501 1 297 127 420	1,297,127,420	1,297,127,420	
4.2 Summer Paddy	-		-						1,287,127,420	1.297,127,420	
(4) 2 Summer Paddy (a) Nes Improved (a): (b) Cost Defore Rehabilitation (Rt) (c) Cost after Rehabilitation (Rt)	-		-				1.324.97	1,156.76	0.00	0.00	
(b) Cost before Rehabilitation (kt)					-		79,498,200	69,405,600	3.00	0.00	
(c) Cost after Rehabilitation (KI)			1				28 066 840	24,503,647	0	0	
(d) Net Profit (KI)			1		1		51,431,360	96,333,313	96,333,313	96,333,313	
1.3 Improvement of Trollergy: Driving Condition			-		-1-						
(a) Minsoon Paddy Cultivation (kyat)							9,289,365	5,761,494 651,256	0		
(a) Net Prost (4.) 1.3 Improvement of Trollergy Driving Condition (a) Mensoon Paddy Cultivation (4yat) (b) Summer Paddy Cultivation (4yat) (c) Black Gram Cultivation (4yat)							745,958	651,256	O.		
(c) Black Gram Cultivation (kyat)							19,507,666	12 099 138	0		
(d) Accumulation above (kvat)						met meet in finish out of	1,988,530,688	48 054 877 3.031 787 105	48,054,877 3,133,963,051	48,054,877	
Sub-total of Road Improve Benefi (kt)											

Table 3.1.3 Project Benefit Estimation -Base 0

х		2015			2016			2017			2018			2019	
Agriculture Production	Financial	Conversion	Conners	Financial	Conversion	Conners	Financial	Conversion	Conners	Financial	Conversion	Conner	Figure	Conversion	Conomia
1.1 North Nawin	Fillalicial	Factor	Economic	Financial	Factor	Economic	Filialicial	Factor	Economic	Financial	Factor	Economic	Financial	Factor	Economic
1.1.1 Black Gram															
(a) Increase of Sawn Area (ac)	10,192.16	7	10,192	15,178.42		15,178.42	0	0.00	0	0	0.00	0	0	0.00	
(b) Gross Profit (Ktac)	328,000	1.07	350,960	328,000	1.07	350,960									
(c) Input Cost (kt ac)	37,086	0.77	28,556	37,086	0.77	28,556									
(d) Family Labor (kt ac)	28,258	0.60	16,955	28,258	0.60	16,955									
(e) Hired Labor (ktac)	36,535	0.60	21,921	39,441	0.60	23,665	-								
(f) Unit Net Profit (kt ac)	226,121		283,528	223,215		281,784									
(g) Net Profit (Kt)	2.304.661.411		2,889,717,376	3,388,051,020		4,277,035,901									
(h) Accumulated Net Profit (Kt)	2.304.661.411		2,889,717,376	5,692,712,431		7,166,753,277	5,692,712,431		7,166,753,277	5,692,712,431		7,166,753,277	5,692,712,431		7,166,753,27
1.2 South Nawin															
1.2.1 Black Gram															
(a) Increase of Sawn Area (ac)	17,608.66		17,608.66	22,141.91		22,141.91	18,705.22		18,705,22	0	0.00	0	0	0.00	(
(b) Gross Profit (Ktac)	250,167	1.07	267,679	250,167	1.07	267,679	250,167	1.07	267,679						
(c) Input Cost (ktac)	38,684	0.77	29,787	38,684	0.77	29,787	38,684	0.77	29,787						
(d) Family Labor (kt ac)	26,176	0.60	15,706	26,176	0.60	15,706	26,176	0.60	15,706						
(e) Hired Labor (ktac)	36,535	0.60	21,921	36,535	0.60	21,921	36,535	0.60	21,921						
(f) Unit Net Profit (kt ac)	148,772		200,265	148,772		200,265	148,772		200,265			3			
(g) Net Profit (Kt)	2,619,675,566		3,526,398,295	3,294,096,235		4,434,249,606	2,782,812,990		3,746,000,883		-				
(h) Accumulated Net Profit (Kt)	2,619,675,566		3,526,398,295	5,913,771,801		7,960,647,901	8,696,584,791		11,706,648,784	8,696,584,791	-	11,706,648,784	8,696,584,791		11,706,648,784
1.3 Wegyi															
1.3.1 Black Gram															
(a) Increase of Sawn Area (ac)							2,268.72		2,268.72	0.00		0.00	433.17		433.17
(b) Gross Profit (Ktac)							250,167	1.07	267,679	328,000	1.07	350,960	153,494	1.07	164,239
(c) Input Cost (kt ac)							38,684.00	0.77	29,787	37,086	0,77	28,556	15,476	0.77	11,917
(d) Family Labor (kt ac)							26,176	0.60	15,706	28,258	0.60	16,955	26,644	0.60	15,986
(e) Hired Labor (ktac)							36,535.00	0.60	21,921	39,441	0.60	23,665	37,188	0.60	22,313
(f) Unit Net Profit (kt ac)			_				148,772		200,265	223,215		281,784	74,186		114,023
(g) Net Profit (Kt)							337,522,012		454,345,211	0		0	32,135,150		49.391.343
(h) Accumulated Net Profit (Kt)							337,522,012		454,345,211	337,522,012		454,345,211	369,657,162		5 03 ,736 ,554
1.4 Taung Nyo		1								10	1				
1.4.1 Black Gram															
(a) Increase of Sawn Area (ac)							9,104.47		9,104.47	10,683 44		10,683,44	0.00		0.00
(b) Gross Profit (Kt/ac)							250,167	1.07	267,679	328,000	1.07	350,960	0	1.07	(
(c) Input Cost (kt/ac)							38,684	0,77	29,787	37,086	0.77	28,556	0	0.77	(
(d) Family Labor (ktac)							26,176	0 60	15,706	28,258	0.60	16,955	0	0.60	1
(e) Hired Labor (kt ac)							36,535	0.60	21,921	39,441	0.60	23,665	0	0.60	(
(f) Unit Net Profit (kt ac)							148,772		200,265	223,215		281,784	0		(
(g) Net Profit (Kt)		-					1,354,490,211		1,823,306,685	2,384,704,060	- 1	3,010,422,457	0		
(h) Accumulated Net Profit (Kt)							1,354,490,211		1,823,306,685	3,739,194,271	1	4,833,729,142	3,739,194,271		4,833,729,142
Sub-Total (Base Case, Financial)	4,924,336,977		6,416,115,671	11,606,484,232		15,127,401,178	16,081,309,445		21,151,053,957	18,466,013,505		24,161,476,414	18,498,148,655		24,210,867,75
						7.1									
G-Tota	4,924,336,977		6,416,115,671	11,606,484,232		15,127,401,178	16,081,309,445		21,151,053,957	18,466,013,505		24,161,476,414	18,498,148,655		24,210,867,75

Benefit		2016			2017			2018		2019		
Road Improvement	Financial cost	Conversion	Economic cost	Financial cost	Conversion	Economic cost	Financial cost	Conversion	V ======	Einanaial aast	Financial cost Conversion	
1.1 North Nawin	Financial cost	Factor	Economic cost	Financial cost	Factor	Economic cost	Financial Cost	Factor	Economic cost	Financial cost	Factor	Economic cost
1.1.1 Monsoon Paddy			1									
(a) Area Improved (ac) (b) Cost before Rehabilitation (kt)												
(c) Cost after Rehabilitation (Kt)												
(d) Net Profit (Kt)						-					-	
1.1.2 Summer Paddy												
(a) Area Improved (ac)	2,998		2,998	0		0	0		0	0		
(b) Cost before Rehabilitation (kt)	179,906,400	0.99	178,107,336	O	0.99	0	0	0.99	0	0	0.99	
(c) Cost after Rehabilitation (Kt)	63,515,955	0.99	62,880,795	0	0.99	0	0	0.99	0	0	0.99	
(d) Net Profit (Kt)	116,390,445		115,226,541	159,497,888		115,226,541	159,497,888		115,226,541	159,497,888		115,226,54
1.1.3 Improvement of Trollergyi Driving												
(a) Monsoon Paddy Cultivation (kyat)	9,551,109	0.99	9,455,598	3,537,447	0.99	3,502,073						
(b) Summer Paddy Cultivation (kyat)	1,688,122	0.99	1,671,241	625,228	0.99	618,976						
(c) Black Gram Cultivation (kyat) (d) Sub-total of Trollergyi Driving (kyat)	12,939,351 24,178,582	0.99	12,809,957 23,936,796	4,792,358 8,955,033	0.99	4,744,434 8,865,483			0			
(e) Accumulation of Trollergyi (kyat)	24,178,582		23,936,796	33,133,615		32,802,279	33,133,615		32,802,279	33,133,615		32,802,27
1.2 South Nawin	24,170,302		23,930,790	33, 133,013		32,602,279	33, 133,013		32,002,219	33, 133,013		32,002,27
1.2.1 Monsoon Paddy									-4			
(a) Area Improved (ac)												
(b) Cost before Rehabilitation (kt)												
(c) Cost after Rehabilitation (Kt)												
(d) Net Profit (Kt)												
1.2.2 Summer Paddy												
(a) Area Improved (ac)	2,245		2,245	1,464		1,464	0		0	0		
(b) Cost before Rehabilitation (kt)	134,729,400	0.99	133,382,106	87,867,000	0.99	86,988,330	0	0.99	0	0		
(c) Cost after Rehabilitation (Kt)	47,566,215	0.99	47,090,553	31,021,444	0.99	30,711,230	0	0.99	0	0	0.99	
(d) Net Profit (Kt)	87,163,185		86,291,553	144,008,741		142,568,653	144,008,741		86,291,553	144,008,741		86,291,55
1.2.3 Improvement of Trollergyl Driving	40-400-000		40-400-000	0.700.04.4	0.99	0.700.045		0.99				
(a) Monsoon Paddy Cultivation (kyat)	13,488,602	0.99	13,488,602	8,796,914		8,708,945	0		0			
(b) Summer Paddy Cultivation (kyat)	1,264,211	0.99	1,251,569 28,042,803	824,485	0.99	816,240	0	0.99	0			
(c) Black Gram Cultivation (kyat)	28,326,064 43,078,877	0.99	42,782,974	18,473,520 28,094,919	0.99	18,288,785 27,813,970	0	0.99	0			
(d) Sub-total of Trollergyi Driving (kyat) (e) Accumulation of Trollergyi (kyat)	43,078,877		42,782,974	71,173,796		70,596,944	71,173,796		70,596,944	71,173,796	l——	70,596,94
1.3 Wegy	43,0,0,0,0		42,702,374	71,173,730		70,000,0-4-4	71,173,730		70,000,044	T. A.S. A.F. M.Y. C. MAN		70,000,04
1.3.1 Monsoon Paddy											1	
(a) Area Improved (ac)				13,413		13,413	5,412		5,412	5,412		5,41
(b) Cost before Rehabilitation (kt)				934,966,937	0.99	925,617,268	377,267,324	0.99	373,494,651	377,267,324	0.99	373,494,65
(c) Cost after Rehabilitation (Kt)				284,135,840	0.99	281,294,482	114,651,293	0.99	113,504,780	114,651,293	0.99	113,504,78
(d) Net Profit (Kt)				650,831,097		644,322,786	913,447,128		904,312,657	913,447,128		904,312,65
1.3.2 Summer Paddy												
(a) Area Improved (ac)				773		773	5,421		5,421	1,603		1,60
(b) Cost before Rehabilitation (kt)				46,358,400	0.99	45,894,816	325,233,000	0.99	321,980,670	96,174,600	0.99	95,212,85
(c) Cost after Rehabilitation (Kt)				16,366,833	0.99	16,203,165	114,823,511	0.99	113,675,276	33,954,443	0.99	33,614,89
(d) Net Profit (Kt)				29,991,567		29,691,651	240,401,056		237,997,045	302,621,213		299,595,00
1 1 3 Improvement of Trollergyi Driving				7,551,739	0.99	7,476,222	3,047,192	0.99	3,016,720	30,618,220	0.99	30,312,03
(a) Monsoon Paddy Cultivation (kyat) (b) Summer Paddy Cultivation (kyat)				434,996	0.99	430,646	3,051,770	0.99	3,021,252	5,878,593	0.99	5,819,80
(c) Black Gram Cultivation (kyat)			-	10,348,045	0.99	10,244,565	4,175,529	0.99	4,133,774	3,458,976	0.99	3,424,38
(d) Sub-total of Trollergyi Driving (kyat)				18,334,780	0.99	18,151,433	10,274,491	0.99	10,171,746	39,955,789	0.99	39,556,23
(e) Accumulation of Trollergyi (kyat)				18,334,780		18,151,433	28,609,271		28,323,179	68,565,060		67,879,41
1.4 Taung Nyo				,00 -,,00		, 10 1, 100	,000,271		,020,170	,000,000		27,070,41
1.4.1 Monsoon Paddy			7								1	
(a) Area Improved (ac)				16,500		16,500	10,234		10,234	0		
(b) Cost before Rehabilitation (kt)				1,150,099,271	0.99	1,138,598,278	713,320,066	0.99	706,186,865	0		
(c) Cost after Rehabilitation (Kt)				349,514,416	0.99	346,019,272	216,777,501	0.99	214,609,726	0		
(d) Net Profit (Kt)				800,584,855		792,579,006	1,297,127,420		1,284,156,145	1,297,127,420		1,284,156,14
1.4.2 Summer Paddy												
(a) Area Improved (ac)				1,325		1,325	1,157		1,157	0		
(b) Cost before Rehabilitation (kt)				79,498,200	0.99	78,703,218	69,405,600	0.99	68,711,544	0		
(c) Cost after Rehabilitation (Kt)				28,066,840	0.99	27,786,172	24,503,647	0.99	24,258,611	00 222 242		05,360,07
(d) Net Profit (Kt)				51,431,360		50,917,046	96,333,313		95,369,979	96,333,313		95,369,97
1.3.3 Improvement of Trollergyi Driving				9,289,365	0.99	0.406.474	5,761,494	0.99	5,703,879			
(a) Monsoon Paddy Cultivation (kyat)				745,958	0.99	9,196,471 738,498	651,256	0.99		0		
(b) Summer Paddy Cultivation (kyat) (c) Black Gram Cultivation (kyat)				19,507,666	0.99	19,312,589	12,099,138	0.99	644,743 11,978,147	0		
(d) Sub-total of Trollergyi Driving (kyat)				29,542,989	0.99	29,247,558	18,511,888	0.99	18,326,769	0		
(e) Accumulation of Trollergyi (kyat)			-	29,542,989		29,247,558	48,054,877		47,574,327	48,054,877	I	47,574,32
Sub-total of Road Improve Beneft (kt)	270 911 000		268.237.864			1.926.103.897	3,031,787,105		2.902.650.649			
Sub-total of Road Improve Denett (Kt)	270,811,089 5 195 148 066		6.684.353.535	1,988,530,688 13.595,014,920		17.053.505.075	19.113.096.550		24.053.704.606	3,133,963,051 21,599,976,556		3,003,804,83 27,165,281,24

Table 3.1.4 Financial Cost and Benefit Analyses (Base0)

						FIRR =	12.7%		B/C =	1.04	
Year		Cost (kyat)		Benefit	Benefit -Cost	Present	Presen	t Value	Present	Present	Value
ı eai		Cost (kyat)		(kyat)	(kyat)	Value Factor	Discout Rate	12.7%	Value	Discout Rate	12.0%
	Investment	O&M	Total	Total			Cost	Benefit		Cost	Benefit
1	23,616,120,000		23,616,120,000	0	-23,616,120,000	0.88731	20,954,819,437	0	0.89286	21,085,888,903	
2	28,466,262,000	63,150,000	28,529,412,000	4,924,336,977	-23,605,075,023	0.78732	22,461,776,656	3,877,028,989	0.79719	22,743,361,952	3,925,632,19
3	44,227,943,000	141,068,061	44,369,011,061	11,606,484,232	-32,762,526,829	0.69860	30,996,191,127	8,108,289,884	0.71178	31,580,974,693	8,261,263,34
4	30,712,856,000	256,819,872	30,969,675,872	16,081,309,445	-14,888,366,427	0.61988	19,197,482,680	9,968,482,099	0.63552	19,681,848,410	10,219,993,77
5	23,750,285,000	337,314,933	24,087,599,933	18,466,013,505	-5,621,586,428	0.55002	13,248,661,715	10,156,676,748	0.56743	13,668,026,830	10,478,170,04
6		337,314,933	337,314,933	18,498,148,655	18,160,833,722	0.48804	164,623,180	9,027,836,470	0.50663	170,893,865	9,371,717,05
7		337,314,933	337,314,933	18,498,148,655	18,160,833,722	0.43304	146,070,859	8,010,438,294	0.45235	152,584,410	8,367,637,54
8		337,314,933	337,314,933	18,498,148,655	18,160,833,722	0.38425	129,613,263	7,107,913,621	0.40388	136,234,755	7,471,032,27
9		337,314,933	337,314,933	18,498,148,655	18,160,833,722	0.34095	115,007,526	6,306,943,784	0.36061	121,639,138	6,670,617,38
10		337,314,933	337,314,933	18,498,148,655	18,160,833,722	0.30252	102,044,514	5,596,059,931	0.32197	108,605,289	5,955,848,92
11		337,314,933	337,314,933	18,498,148,655	18,160,833,722	0.26843	90,545,447	4,965,458,043	0.28748	96,971,297	5,317,847,77
12		337,314,933	337,314,933	18,498,148,655	18,160,833,722	0.23818	80,341,671	4,405,889,047	0.25668	86,581,997	4,748,104,79
13		337,314,933	337,314,933	18,498,148,655	18,160,833,722	0.21134	71,288,138	3,909,398,737	0.22917	77,302,463	4,239,220,72
14		337,314,933	337,314,933	18,498,148,655	18,160,833,722	0.18753	63,256,669	3,468,957,817	0.20462	69,021,382	3,785,091,17
15		337,314,933	337,314,933	18,498,148,655	18,160,833,722	0.16640	56,129,205	3,078,091,936	0.18270	61,627,438	3,379,611,75
16		337,314,933	337,314,933	18,498,148,655	18,160,833,722	0.14764	49,801,177	2,731,066,667	0.16312	55,022,812	3,017,418,00
17		337,314,933	337,314,933	18,498,148,655	18,160,833,722	0.13101	44,191,629	2,423,442,455	0.14564	49,126,547	2,694,070,37
18		337,314,933	337,314,933	18,498,148,655	18,160,833,722	0.11624	39,209,488	2,150,224,800	0.13004	43,864,434	2,405,499,25
19		337,314,933	337,314,933	18,498,148,655	18,160,833,722	0.10314	34,790,662	1,907,899,052	0.11611	39,165,637	2,147,820,04
20		337,314,933	337,314,933	18,498,148,655	18,160,833,722	0.09152	30,871,063	1,692,950,565	0.10367	34,969,439	1,917,703,07
21		337,314,933	337,314,933	18,498,148,655	18,160,833,722	0.08121	27,393,346	1,502,234,652	0.09256	31,221,870	1,712,188,64
22		337,314,933	337,314,933	18,498,148,655	18,160,833,722	0.07206	24,306,914	1,332,976,592	0.08264	27,875,706	1,528,687,00
23		337,314,933	337,314,933	18,498,148,655	18,160,833,722	0.06394	21,567,917	1,182,771,625	0.07379	24,890,469	1,364,978,38
24		337,314,933	337,314,933	18,498,148,655	18,160,833,722	0.05673	19,135,876	1,049,399,973	0.06588	22,222,308	1,218,658,03
25		337,314,933	337,314,933	18,498,148,655	18,160,833,722	0.05034	16,980,434	931,196,803	0.05882	19,840,864	1,088,061,10
26		337,314,933	337,314,933	18,498,148,655	18,160,833,722	0.04467	15,067,858	826,312,300	0.05252	17,715,780	971,522,76
27		337,314,933	337,314,933	18,498,148,655	18,160,833,722	0.03963	13,367,791	733,081,631	0.04689	15,816,697	867,378,19
28		337,314,933	337,314,933	18,498,148,655	18,160,833,722	0.03517	11,863,366	650,579,888	0.04187	14,123,376	774,517,48
29		337,314,933	337,314,933	18,498,148,655	18,160,833,722	0.03120	10,524,226	577,142,238	0.03738	12,608,832	691,460,79
30		337,314,933	337,314,933	18,498,148,655	18,160,833,722	0.02769	9,340,250	512,213,736	0.03338	11,259,572	617,468,20
Total	150,773,466,000	9,231,226,191	160,004,692,191		353,527,168,343		108,246,264,084	108,190,958,377		110,261,287,165	115,209,220,13
							NPV =	-55,305,707		NPV =	4,947,932,9

Table 3.1.5 Economic Cost and Benefit Analyses -Base0

						EIRR =	19.4%		B/C =	1.48	
Year		Cost (kust)		Benefit	Benefit -Cost	Present Value	Presen	t Value	Present	Prese	nt Value
rear		Cost (kyat)		(kyat)	(kyat)	Factor	Discout Rate	19.4%	Value Factor	Discout Rate	12.0%
	Investment	O & M	Total	Total			Cost	Benefit		Cost	Benefit
1	21,924,003,000		21,924,003,000	0	-21,924,003,000	0.837520938	18,361,811,557	-	0.892857143	19,575,002,679	
2	23,858,119,000	63,150,000	23,921,269,000	6,416,115,671	-17,505,153,329	0.701441322	16,779,366,542	4,500,528,656	0.797193878	19,069,889,190	5,114,888,13
3	41,531,145,000	141,068,061	41,672,213,061	15,127,401,178	-26,544,811,883	0.587471794	24,481,249,753	8,886,921,503	0.711780248	29,661,458,139	10,767,385,35
4	29,600,465,000	256,819,872	29,857,284,872	21,151,053,957	-8,706,230,915	0.492019928	14,690,379,144	10,406,740,038	0.635518078	18,974,844,308	13,441,877,16
5	22,759,543,000	337,314,933	23,096,857,933	24,161,476,414	1,064,618,481	0.412076991	9,517,683,727	9,956,388,508	0.567426856	13,105,777,474	13,709,870,59
6		337,314,933	337,314,933	24,210,867,757	23,873,552,824	0.345123108	116,415,178	8,355,729,936	0.506631121	170,894,243	12,265,979,07
7		337,314,933	337,314,933	24,210,867,757	23,873,552,824	0.289047829	97,500,149	6,998,098,774	0.452349215	152,584,145	10,951,767,03
8		337,314,933	337,314,933	24,210,867,757	23,873,552,824	0.242083609	81,658,416	5,861,054,249	0.403883228	136,235,844	9,778,363,42
9		337,314,933	337,314,933	24,210,867,757	23,873,552,824	0.202750091	68,390,634	4,908,755,653	0.360610025	121,639,146	8,730,681,62
10		337,314,933	337,314,933	24,210,867,757	23,873,552,824	0.169807447	57,278,588	4,111,185,639	0.321973237	108,606,381	7,795,251,45
11		337,314,933	337,314,933	24,210,867,757	23,873,552,824	0.142217292	47,972,016	3,443,204,053	0.287476104	96,969,983	6,960,045,94
12		337,314,933	337,314,933	24,210,867,757	23,873,552,824	0.11910996	40,177,568	2,883,755,488	0.256675093	86,580,342	6,214,326,7
13		337,314,933	337,314,933	24,210,867,757	23,873,552,824	0.099757085	33,649,555	2,415,205,601	0.22917419	77,303,877	5,548,506,0
14		337,314,933	337,314,933	24,210,867,757	23,873,552,824	0.083548648	28,182,207	2,022,785,261	0.204619813	69,021,318	4,954,023,22
15		337,314,933	337,314,933	24,210,867,757	23,873,552,824	0.069973742	23,603,188	1,694,125,009	0.182696261	61,626,177	4,423,235,02
16		337,314,933	337,314,933	24,210,867,757	23,873,552,824	0.058604474	19,768,164	1,418,865,167	0.163121662	55,023,372	3,949,316,98
17		337,314,933	337,314,933	24,210,867,757	23,873,552,824	0.049082474	16,556,251	1,188,329,285	0.145644341	49,128,011	3,526,175,8
18		337,314,933	337,314,933	24,210,867,757	23,873,552,824	0.0411076	13,866,207	995,250,658	0.13003959	43,864,296	3,148,371,3
19		337,314,933	337,314,933	24,210,867,757	23,873,552,824	0.034428475	11,613,239		0.116106777	39,164,550	2,811,045,82
20		337,314,933	337,314,933	24,210,867,757	23,873,552,824	0.028834569	9,726,331	698,109,937	0.10366677	34,968,350	2,509,862,4
21		337,314,933	337,314,933	24,210,867,757	23,873,552,824	0.024149555	8,146,006	584,681,689	0.09255961	31,221,739	2,240,948,4
22		337,314,933	337,314,933	24,210,867,757	23,873,552,824	0.020225758	6,822,450	489,683,157	0.08264251	27,876,553	2,000,846,88
23		337,314,933	337,314,933	24,210,867,757	23,873,552,824	0.016939496	5,713,945	410,119,897	0.07378796	24,889,781	1,786,470,54
24		337,314,933	337,314,933	24,210,867,757	23,873,552,824	0.014187183	4,785,549	343,484,001	0.06588210	22,223,016	1,595,062,8
25		337,314,933	337,314,933	24,210,867,757	23,873,552,824	0.011882062	4,007,997	287,675,042	0.05882331	19,841,981	1,424,163,3
26		337,314,933	337,314,933	24,210,867,757	23,873,552,824	0.009951476	3,356,781	240,933,871	0.05252081	17,716,054	1,271,574,3
27		337,314,933	337,314,933	24,210,867,757	23,873,552,824	0.00833457	2,811,375	201,787,162	0.04689358	15,817,905	1,135,334,2
28		337,314,933	337,314,933	24,210,867,757	23,873,552,824	0.006980377	2,354,585	169,000,973	0.04186927	14,123,130	1,013,691,3
29		337,314,933	337,314,933	24,210,867,757	23,873,552,824	0.005846212	1,972,014	141,541,854	0.03738327	12,609,935	905,081,40
30		337,314,933	337,314,933	24,210,867,757	23,873,552,824	0.004896325	1,651,603	118,544,266	0.03337792	11,258,871	808,108,40
Total	139,673,275,000	9,231,226,191	148,904,501,191	665,711,625,474	523,223,239,954	5	84,538,470,719	84,566,028,591		101,888,160,790	150,782,255,1
							NPV =	27,557,872		NPV =	48,894,094,3

Table 3.1.6 Project Cost Estimation (Financial / Economic)-Base1

			2014	ir .			2015年				501	6F			2017	#			20	U#	
		Financ	jąl ją	Con e son		Emancia		Conversion	-24 2 day	Finan	D/B/	Conversion		Financial		Conversion	Tax 100	Finan	cial	Conversion	and a
		RO:	LC	Factor	Economic	FC	ÚĈ.	Factor	Economic	50	un.	Pactor	Economic	PC:	ic	Factor	Economic	PO	IZ.	Factor	Economic
North No	CATE	3,620,592		3.00	=6°0.59°	2.547.935		1.00	1257225	975.100		1,00	9:3, 100								
	Tom		6,326.61		= 10 80 1		1,937,549		1,650,506		867.771		14,182				1				1
10	Material		1.000	(34)	1 2 9,080		77 2	0.99	765,633		-00 (11)	1 99	364, 35	- 3							
-	Salad Lahor		000	110	20 9,8:6		455	1.00	467,578		200,000	1.00	200,339								
	Cankilled Labor		3,014,741		808 84 4	-	108.725	080	418,995		299,013	11.60	179,408	1		- 1	34				
South No	awar:	1,992,502		100	1,502,202	+22,000,5	- 1),60	4,369.631	1,569 26)		1.00	4 >69,261								
	Total		1,596,920		1.293,830		3,141,566	1.0	1986175		3,890,131		3,355.330								
145	Material		117,538	1.99	508 153		15-25	0.99	(38) 30		176:342	0.00	1.744,620	-							
-	Sailed Labor		314 (9)	4,00	4(4,89)		711,017	CH00	741,047		849,6-2	100	849 692								
	Unstalled Labor	-	6[8,643	(1.60)	÷71,196		1,106,641	0.60	667.625		1,268,197	11-60	760,918	-							
Wegy	0 1	1								9,945,784		1:00	9,945,784	B,589,769		190	8,539,769	7,499,112		100	7,449,5
	foral										8,576,719		7,245 691	-	6,387,854		9 684 899		5387925		4,773,0
200	Materal										.,151_16	1,99	3,119,7281		18/236	1199	1,56 ,418		294156	1199	29150
75	Spilled Labor										1176610	100	2176.689		1415/00	100	[31749]		100000	100	960.2
	L'ns alle d'Labor										3,345,790	060	1,989,211		1.667,300	0.60	1,000,380		1,463,065	1169	8==1
Taing	lym					Ĭ				1,555,500		100	1.655,500	5,396,708		100	£ 886 T08	3722676		790	3 72
	Total				-						3527821		3,164,679		4,511,500		4,369,847		2781,755		2,97,
	Material										2099344	0.99	2.018/337		3,500,716	0'99	7.5902		1 009 465	0.99	(820
1.C	Skilled Labor										475000	1,00	273,099		75.162	1,00	378.165		375.165	100	378
	Uns tille #Labor								y		855,372	0.60	517.503		VOLUM	0.60	338,655		dell'e	0.60	338±
Sub-Total(F	C-LO	7,362,794	-6-107	1 3	1766,225	11,567,662	9,382115		11 364 343	.30,295,649	16,852,443		34 (806,737	24,47647	16,919,389		54,431,527	11.17.11.848	8.169,580		8,482,1
Machine	rips	3,914,300		1.00	3,914,204	8,871,306		100	3,871,306												
Procurer			· U	D.50	0		147,855	0.09	146.577	=				-	-	i i	i				
Engineering	Service	-													_						
Engin eering Se	rwc= (DD					2 838 046		1.00	2.838.000		-										
						2.000	29824	(1.90	******				- 2								
Engmerrup Se	rote (SV)					1,142,540		190	1,142,146	1,142,140		4.00	1.137(146)	1,142,140		100	1,342,140	1.542540		100	1,142,3
35000							393.70	1/99	290 -		293,710	1:99	290,773		293 70	11.992	39077		291710	1199	
Tona		12.176.998	7,613,037		19,578,639	19,419,148	6,553,594		II 654,919	01:437.785	57,146,133		36,133,640	15,618,617	13,213,070	1	25,364,126	12313988	5.463,790		19.915
1144		1.64 (W.8/9)	1.0.000		10/2/4904	47(750,190	10,000,000		-14 W-1,7 M	21,702 ,102	37,479,452		29,130,991	11/040/01/1	- ANIMAGO IO			194114,790	3,102,1270		
ysical Contingent y	5%	658,650	393 662		973,931	900.957 400	327,675 300		1087,766950	1.071 (889 250	857,307,600		1:811,952,000	180,930.850	560,654		1293.507	6)5,699 400	123 64 500		995 715
(FG+1C)	.10%	T36,219	78.7,304		1.366,443	695, 766 300	(\$53,21 500)		1,120,434,300	2 029 564 500	1,685,244,200		1,230,572,700	1,347,647,700	1.09 1,9 %		2,447,102	1,511;84800	816,958 000		1,848,249
Sub-Total		-14,565.127	9 (63 99)		21.924.003	E1.046.871.600	7,419,396,700		23 858 (100	21.539,229	19,668,764		41.531.145	17.647.193.550	13.865.660		29.600.465	14.6468 "2.700	9.703.4) 2.500		12,799
rand-faral(FC+LC)			27,616,100				28,466,262				44 227 948				30 712 886				25 750 28 5		
CKIM	0.3%	- 4				39.431	22619		98,735,881	90758.418	49279623	- 1	127 700 764	162 101 799	99,718/09		252416634	208,947,644	128357289		Stoog a

Table 3.1.7 Project Cost and Benefit Estimation -Base1

Particulars	FC/LC	Total	Ratio %	2014	2015	2016	2017	2018	2019	2020	Remarks
mplementation		10	.1.97.4					Carro SCOV	50-127	0.0000	NACOWAEY 90%
1 Civil & Structure Construction											
1 1 North Nawin	FC	8 853 5 17,000	49	5 670 592 000	2.257 825 000	925 100 000					
	LC	9 131 937 000	51	6 326 617 000	1,937 549 000	867 771 000					
	(unskilled labors)	4 0 12 0 79 0 0 0	44	3 014 741 000	698 325 000	299 013 000				-	
	Sub Total (FC+LC)	17,985,454,000	100	11 997 209 000	4,195,374,000	1 792 871 000	0				
1.2 South Nawin	FC	10 471 300 000	54	1.592 202 000	4,309 837 000	4 569.261 000					
	LC	8 8 7 1 1 1 7 0 0 0	46	1 546 420 000	3,444,566,000	3 880 131 000					
	(unskilled labors)	2 992 881 000	34	618 643 000	1,106 041 000	1.268 197 000					
	Sub Total (FC+LC)	19,342,417,000	100	3 138 622 000	7,754,403,000	8 449 392 000	0				
1.3 Wegyi	FC	25 984 725 000	56	200 00 11		9 945 784 000	8 589 769 000	7 449 172 000		·	
	LC	20 352 398 000	44			8 576 719 000	6 387 854 000	5 387 825 000			
	(unskilled labors)	6 379 155 000	31			3.248 790 000		1 463 065 000			
	Sub Total (FC+LC)	46,337,123,000	100			18 522 503 000					
1.4 Taung Nyo	FC	14 464 884 000	57			4 855 500 000		3 722 676 000			
	LC	10 841 082 000	43			3 527 821 000		2 781 755 000			
	(unskilled labors)	2 348 591 000	22			855 372 000	928 794 000	564 425 000		<u> </u>	
	Sub Total (FC+LC)	25 305 966 000	100			8 383 321 000					
otal of Civil & Structure Construction	FC	59,774 426 000	55	7 262 794 000	6 567 662 000	11 11 11					
	LC	49 196 534 000	45	7.873 037.000	5 382 115 000	16 852 442 000		8 169 580 000			
	(unskilled labois)	15 732 706 000	32	3 633 384 000	1,804 366 000	5 671 372 000		2 027 490 000			
	Total (FC+LC)	108 970 960 000	100	15 135,831 000	11,949 777 000		25 395 837 000	19 341 428 000			
2 Machineries Procurement	FC	14,785,510,000	99	5.914 204 000	8.871 306 000	01_110_001_000	20 000 007 000	10.041.420.000		-	
	LC	147.855.100	- 0	0,017,201,000	147 855_100						
	Total (FC+LC)	14 933 365 100	100	5 914 204 000	9 019 161 100	ä	0				
Engineering Service	TOTAL TO TECK	0	100	3 3 14 204 000	3 0 13 10 1 100						
5.1 Engineering Service (DD)	FC	2 838 040 000	80		2.838 040 000						
5.7 Engineering define toby	LC	729,824,000	20		729 824 000						
	Total (FC+LC)	3 567 864 000	100		3 567 864 000	0	0				
5.2 Engineering Service (SV)	FC	4 326.290 000	80	-	1 142 140 000	1 142 140 000		899 870 000		-	
3.2 Eligiteening Service (SV)	LC	1 112 540 000	20	-	293.710.000	293 710 000	293 710 000	231,410,000		-	
		5 438 830 000	100	-	1,435 850 000	1 435 850 000				-	
	Total (FC+LC)	5 438 830 000	100		1,435,850,000	1 435 850 000	1 435 850 000	1 131,280 000			
1 1 Total of 1, 2, 5 (FC)	FC	81,724,266,000	61	13 176 998 000	19 419 148 000	21 437 785 000	15 618 617 000	12 071 718 000			
1.2 Total of 1, 2, 5 (LC)	LC	51,186,753,100	39	7,873,037,000	6,553,504,100	17,146,152,000	11.213 070 000	8,400,990,000			
1 3 Total of 1, 2, 5 (Unskilled Labors)	(unskilled labols)	15,732,706,000	31	3,633,384,000	1,804,366,000	5 671 372 000	2,596,094,000	2,027,490,000			
1,4 Total of 1, 2, 5 (Gland Total)	Total (FC+LC)	132 911 019 100	100	21.050.035.000	25,972,652,100		70 10	70 17 17			
							N IS O	N W 0			
2 1 Physical Contingency (5% of 1.1)	5% FC	4 086.213 300	61	658 849 900	970 957 400	1 071 889 250	780 930 850	603 585 900			
2.2 Physical Contingency (5% of 1.2)	5% LC	2 559 337 655	39	393 651 850	327 675 205	857 307 600		420 049 500			
2 3 Physical Contingency 5% of 13	5% (unskilled labors)	786,635,300	31	181 669,200	90,218.300	283 568 600	129 804 700	101 374 500		 	
2.4 Physical Contingency (5% of 1.4).	5% Total (FC+LC)	6 645 550 955	100	1 052 501 750	1,298 632 605	1 929 196 850		1 023 635,400		 	
	J. Total II O'LOY	2 0 10 000 000	100	1 552 551 7 56	1,200 002 000	. 525 155 656	, 5 , , 55 , 550	, 525 555,400		 	
3 1 Total of 1 1 & 2 1	FC	85,810,479,300	61	13 835 847 900	20,390,105,400	22 509 674,250	16 399 547 850	12 675 303 900			
3.2 Total of 1.1 & 2.2	LC	53,746,090,755	39	8 266 688 850	6,881 179 305	18 003 459 600		8 821 039 500		-	
3 3 Total of 1 1 & 2 3	(unskilled labors)	16 519 341 300	. 31	3 8 15 053,200	1.894 584 300	5 954 940 600		2 128 864 500		-	
3 4 Total of 1 1 & 2 4	Total (FC+LC)	139 556 570 055	100	22 102 536 750	27,271 284 705					-	
7 T T T T T T T T T T T T T T T T T T T	TOTAL (FC+LC)	138 330 370 033	5100	22 102 330 / 30	21,211204103	-0 0 10 100 800	20,143.214,330	21450543400		-	
Project Management (10% of 1)	10% LC	10,897,096,000	100	1,513 583 100	1,194,977,700	3 7 14 808 700	2 539 583 700	1 934 142 800			
5 Others (Miscellaneous 5% of 1-2)	5% LC	5 744.258.200	100	1.052 50 1.750	597 488 850	1857404350		967 071 400		-	
Outers divisce laneous 5% of 1-21	3 % LC	3 / 44,256,200	100	052 50 # 250	597 488 85U	4 657 404 350	1.209 19 1850	90/0/1400		-	
2.1 Crond Tata Cost for Disject Explication		05 040 470 202	r.r	12 025 047 222	00 200 105 122	00 500 014 050	10 200 547 252	10.075.202.222		-	
5 1 Grand Total Cost to Project Evaluation	FC	85,810,479,300	55	13 835 847 900	20,390,105,400					<u> </u>	
5.2 Grand Total Cost for Project Evaluation	LC	70,387,444,955	45	10.832,773,700	8 673 645 855						
3 Grand Total Cost for Project Evaluation	Total (FC+LC)	156,197,924,255	100	24 668 62 600	29,063,751,255	46,085,346,900	3 982 646 900	24 397 557 600			
											7.47.19.44.197.1 C.
7 Operation and Maintenance 0	30% LC				63 150 105	126 056 9 19	237,501 180	313 688 691	371,712,975		371,712,975

Particulars	FC/LC	Total	Ratio %	2614	2015	2016	2017	2018	2019	2020	Remarks
Benefit T. Agriculture Production											2.77.77
1 1 North Nawin											
1 1.1 Black Gram (a) increase of Sawn Area (ac)					10.192.16	15 17E 42	0.00				
(b) Gross Profit (KVac)			-				328.000	328.000			
(c) In put Cost (kt/ac) (d) Family Labor (kt/ac)					328,000 37,086	328,000 37,086	328.000 37.086 28,258	37.088			
(d) Family Labor (kVac) (e) Fired Labor (kVac)					28,258	28,258	28,258	28 258			
(E.Unit Net Proft (LVac)			-		36.535 226.121	30 441 223 215 3,188,051 020 5,692,712,431	39,441 223,215	37,188 225 468			
(a) Net Pront (R0)			1		2.304.661.411 2.304.661.411	3,388,051,020	0	0	The state of the first	and the state of the state of	
(h.) Accumulated Nat Profit (kt)					2,304,661,411	5,692,712.431	5,692,712,431	5,692,712,431	5,692,712,431	5,692,712,431	
1.2 f Black Gram			-					-			
(a) Increase of Sawn Area (ac) (b) Gross Profit (Intrac)			1		17 608 66 250 167 38 684 26 176	22 141 91	18 705 22	0.00	0.00		
(b) Gross Profit (RVac) (c) Input Cost (kVac)					250,167	250 167 38 684 26 176 36 53 5	250.167 38 684 26 176	250,167 38,684 26,176			
(d) Family Labor (Wac)			4		38 684	38 684	38,684	38,684			
(d) Family Labor (kt/ac) (e) Fired Labor (kt/ac)						36,535	20 525				
(f) Unit Net Profit (kVac) (g) Net Profit (kt)					148 //2	148.772	148,772	148,772			
(p) Net Profit (Kt) (h) Accumulated Net Profit (Kt)			-		148 //2 2.619.675,566 2,619.675,566	148,772 3,294,006,235 5,913,771,801	148,772 2,782,812,990 8,696,584,791	8.696.584.791	8,696,584,791	8.696.584,791	
1 3 1 Black Gram			+		2,619,675,566	5,913,771,801	8,000,584,791	8,090,584,791	8,000,584,791	8,090,384,797	
1 3 1 Black Gram									The state of the s		
(a) Increase of Sawn Area (ac)			-		-		2,268 72 250,167	328 000	43117	-	
(a) Increase of savings age! (b) Gross Front (k/Jac) (c) Input Cost (k/Jac) (d) Family Labor (k/Jac) (e) Hired Labor (k/Jac)			-				38 684 26 176	37,086 28,258	153,494 15,476 26,644		
(d) Family Labor (i(Vac)						-	26,176	28,258	26,644		
(f) Unit Net Profit (kVac)			1				36.535 148,772	39,441 223,215	37,188 74,186		
(g) Net Profit (kt)			+				337 522 012	D	32 135 150		
(g) Net Profit (kt) (h) A cumulated Net Profit (kt)							337,522,012 337,522,012	337.522.012	32 135 150 369.657 162	369,657,162	
1.4 Taung Nyo							and the same of th				
1.4.1 Black Gram (a) Increase of Sawn Area (ac)	-		-			-	9.104 47	10,683,44	10,926 80		
(b) Gross Front (t.Vac) (c) input Gost (kVac)	1		+				250.167 38.684	328,000	153,494 15,476	-	
(c) input Cost (kVac)							38.684	328,000 37,086	15,476		
(d) Family Labor (kVac)	-						26 176	28,258 39,441	25,644		
(h Unit Net Profit (kVac)			-				36,535 148,772	223 215	26,644 37,188 74,186		
(a) Net Profit (kt)							1,354,490,211	223,215 2,384,704,060 3,739,194,271 18,466,013,505	810,615 585		
(h) Accumulated Net Profit (kt)			-		4,924,336,977	44.000.404.000	1,354,490,211	3,739,194,271	4,549,809,856	4,549,809,856	
(h) Accumulated Net Problikul Sub Total of Crop Beneal (kt) 1. Road improvement 1.1 North Nawin	-		1		4,924,336,977	11,606,484,232	10.081,309:445	18,466,013,505	19.308.764.240	19.308.764.240	
1.1 North Nawin											
1 1 1 Monsoon Paddy for threshing						- 6					
(a) Area improved (ac) (b) Cost before Rehabilitation (kt)	+		+		0	0	0	0	0		
(c) Cost after Rehabilitation (RI)			+			0	0	0			
(d) Net Fro lit (Kt) 1.1.2 Summer Paddy for threshing					0	0	0	0	0		
1.1.2 Summer Paddy for threshing			1		2	1,110.53	0.00	0.00	0 0 0	0 00	
(a) Area Improved (ac) (b) Cost before Rehabilitation (kt)			1		2.998.44	55 5 21 800	0.00	0.00	0 00	0 00	
			1		179,906,400 63,515,955	66.631.800 23.524.357 150.497,888		0	0	0	
(d) Net Profit (Kt)					116, 190,445	150 497,888	159 497 888	159 497,888	159 497 888	159,497888	
(a) Net Profit (kt) 1 3 Improvement of trollegy Driving Condition (a) Min soon Paddy Cultivation (kyat) (b) Summer Paddy Cultivation (kyat) (c) Black Gram Cultivation (kyat)	-		-1		9,551,109	3,537,447	0	-			
(b) Summer Paddy Cultivation (kyat)	1		1		1,688,122	625 228 4 792 358	0			-	
(c) Black Gram Cultivation (kyat)					12,939,351	4,792,358	0	The same of the same of	700000000000000000000000000000000000000		
(d) Accumulation above (kyat)			-	-	24 178 582	33,133,615	33,133,615	33,133,615	33,133,615	33,133,615	
1 7 1 Emission Baddy		-	+		-						
(a) Area improved (ac) (b) Cost before Rehabilitation (kt)					0	0	0	0	0		
(b) Cost before Renabilitation (kt) (c) Cost after Rehabilitation (kt)	-		1		0	0	0	0	0	-	
(d) Net Provided	+		1		0	0	0	0	0		
1 2 2 Summer Paddy					1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		100			100	
(a) Area improved (ac)					2 245 49	1,464,45 87,867,000	0.00	0.00	000	0.00	
(b) Costbefore Rehabilitation (kt) (c) Costafer Rehabilitation (kt)			-		134,729,400	87,867,000	0	0	0.0	0	
			1		2,245,49 134,729,400 47,566,215 87,163,185	31 021 444 144 008 741	144 008.741	T44 008 741	144.008.741	144.008.741	
1 2.3 Improvement of Trollergy Driving Condition										201744	
(b) Summer Paddy Cullivation (kyal)	-				13.488.602 1,264,211	8,796,914	0				
(d) Net Front (ki) 1.2.3 Improvement of Trollergy Driving Condition (a) Monsoon Paddy Cullivation (kyat) (b) Summer Paddy Cullivation (kyat) (c) Black Gram Cultivation (kyat)	1		+	1	28.426.064 43.078.877	824 485 18.473 520 71.173,796	0		4500	1000000	
(d) Accumulation above (kyal)					43.078.877	71,173,796	71.173,706	71,173,796	71,173,796	71,173,796	
1.3 1 Monsoon Haddy	-		-								
(a) Area Improved (ac) (b) Cost before Rehabilitation (kt)	1		1				13.413.59 9.34.966.937	5.412.42 377.267.324	0 0 0	0.00	
(b) Costbefore Rehabilitation (kt)							934,966,937	377,267,324	0	0	
(c) Cost after Rehabilitation (Rt)	-		-		-		284,135,840 650,811,097	913,447,128	913,447,128	913,447,128	
(d) Net Profit (kt) 132 Summer Paddy	1								700		
						-	772 64 46,358,400	5,420.55	1,602.91	0 00	
(b) Costbefore Rehabilitation (kt) (c) Cost after Rehabilitation (RI)							46,358,400	125,233,000 114,823,511 240,401,056	96,174,600	0	
			-				16,366,833 29,991,567	240,401046	33,954,443	302,621,213	
1 3 3 Improvement of Trollergy: Driving Condition (a) Monsoon Paddy Cultivation (kyal)											
(a) Monsoon Paddy Cultivation (kyat)							7,551,730	3.047.192	30,618,220 5,878,593 3,458,976		
(b) Summer Paddy Cultivation (kyat) (c) Black Gram Cultivation (kyat) (d) Accumulation above (kyat)	-		-				434,996 10,348,045	3,051,770 4,175,529	3.450.076		
(d) Accumulation above (kyati							18,334,780	28,609,271	68.565.060	68,565,060	
1.4 Taung Nyo 1.4 I Monsoon Paddy	1										
1.4.1 monsoon Paddy							16,499.76	10,233.56	0.00	0 00	
(a) Area Improved (ac) (b) Cost before Rehabilitation (kt)			-				1 1 50 099 271	713.320.066	0.00	0 00	
(c) Costaller Renabilitation (KI) (d) Net Profit (KI) 1.4.2 Summer Paddy							1 1 50 000 271 349,514,416	713.320.066 216,777,501	0	ō	
(d) Net Frofit (Rt)							800 584 855	1,297,127,420	1,297,127.420	1,297,127.420	
(a) Area Improved (ac)	-		-				1 20 4 07	1 150 70	000	0 00	
(a) Area Improved (ac) (b) Cost before Rehabilitation (kt)			-				1,324,97 79,498,200	1.156 76 69.405,600	3 00	0 00	
(c) Cost after Rehabilitation (Kt)							28.066.840	24,503,647	0	0	
(d) Net Profit (kil)							51 431 360	96,333,313	96,333,313	96333313	
(a) Monsoon Paddy Cultivation (kyat)	+		1		-		9 289 365	5.761.494	0		
(b) Summer Paddy Cultivation (kyal)							745,958	651,256	0		
(c) Wask Fram Culturation (high)						-	9,289,365 745,958 19,507,666 29,542,989	651,256 12,009,138 48,054,877	48.054.877	7000000	
(c) mack chain control (nyat)											
(d) Net Profit Christiany Entiting Condition 1.3 improvement of inciting time to make the condition 1.3 improvement of inciting time to make the condition of t					270 211 020	407 814 846	1.988.530.688	3.031,787,105	3 433 063 054	48,054,877 3,133,963,051	

Table 3.1.8 Project Benefit Estimation -Base1

Х		2015		2016			2017			2018			2019			2020		
Agriculture Production	Elever let	Conversion	F. control	Firestal	Conversion	F	Florestell	Conversion	Francis	Filesofa)	Conversion	Francisco	Paradicial	Conversion	Farecula	Financial	Conversion	F. Jane
1 1 North Nawn	Financial	Factor	Economic	Financial	Factor	Economic	Financial	Factor	Economic	Financial	Factor	Economic	Financial	Factor	Economic	Filalicial	Factor	Economic
1 1 1 Black Gram																		
(a) Increase of Sawn Area (ac)	10,192 16		10 192	15 178 42		15 178 42	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	2)
(b) Gross Profit (Kt ac)	328,000	1.07	350,960	328,000	1.07	350 960												
(c) Input Cost (kt-ac)	37 086	0.77	28,556	37,086	0.77	28 556												
(d) Fam y Labor (kt ac)	28,258	0.60	16,955	28,258	0.60	16 955												
(e) H red Labor (kt ac)	36 535	0.60	21,921	39,441	0.60	23 665												
(f) Unit Net Profit (kt-ac	226,121		283,528	223,215		281 784												
(g)Net Profit (Kt)	2 304 661 411		2.889,717,376	3,388,051,020		4 277 035 901												To be a first to be
(h) Accumulated Net Profit (K.t.	2 304 661 411		2 889 717 376	5 692 712 431		7 166 753 277	5,692,712,431		7,186,753,277	5.692.712.431		7.166.753.277	5 692 712 431		7.166.753.277	5.692.712.431		7 166 753.27
1 2 South Nawn															-			
1 2 1 Black Gram	1														-			
(a) Increase of Sawn Area (ac)	17,608 66		17,608.66	22 141 91		22 141 91	18,705 22		18,705 22	0	0.00	0	0	0.00	0	0	0.00	
(b) Gross Profit (Kt ac)	250,167	1.07	267,679	250,167	1.07	267 679	250 167	1 07	267,679									-
(c) Input Cost (kt-ac)	38,684	0.77	29,787	38,684	0.77	29 787	38.684	0.77	29,787									
(d) Family Labor (kt ac)	26,176	0.60	15,706	26,176	0.60	15 706	26,176	0 60	15,706									
(e) Hired Labor (kt/ac)	36,535	0.60	21,921	36,535	0.60	21 921	36,535	0 60	21,921									
(f) Unit Net Profit (kt ac)	148,772		200,265	148,772		200 265	148,772		200 265									
(g)Net Profit (Kt)	2 619 675 566		3,526,398,295	3,294,096,235		4 434 249 606	2 782 812 990		3,746,000,883									
(h) Accumulated Net Profit (Kt)	2 619 675 566		3,526,398,295	5.913.771.801		7 960 647 901	8 696 584 791		11 706 648 784	8,696,584,791		11 706 648 784	8 696 584 791		11 706 648 784	8 696 584 791		11 706 648 78
1 3 Wegy																		
1 3 1 Black Gram						2												
(a) Increase of Sawn Area (ac)	1						2 268 72		2.268 72	0.00		0.00	433 17		433 17	0.00		0.00
(b) Gross Profit (Kt ac)							250 167	1 07	267 679	328,000	1.07	350 960	153 494	1.07	164 239	0	1 07	1
(c) hput Cost (kt-ac)						-	38,684.00	0.77	29 787	37,086	0.77	28 556	15,476	0.77	11.927	0	0.77	- (
(d) Family Labor (kt ac)							26 176	0.60	15 706	28,258	0.60	16 955	26,644	0.60	15 986	0	0.60	-1
(e) H red Labor (kt/ac)							36,535 DD	0 60	21 921	39,441	0.60	23 665	37,188	0.60	22 313	0	0.60) (
(f) Unit Net Profit (kt-ac							148,772		200,265	223,215		281 784	74,186		114.023	0		3
(g)Net Profit (Kt)							337,522 012		454 345 211	0		0	32 135 150		49 391 343	0		
(h) Accumulated Net Profit (Kt)							337,522 012		454 345 211	337,522.012		454 345 211	369,657,162		503 736 554	369 657 162		503,736,554
1.4 Taung Nyo	1					1		- 19		10.50 TA (135.2 %)						N-		202.57550
1 4.1 Black Gram																		
(a) Increase of Sawn Area (ac)							9.104 47		9 104 47	10,683,44		10 683 44	0.00		0.00	0.00		0.00
(b) Gross Profit (Kt ac)							250 167	1 07	267 679	328,000	1.07	350 960	0		0	0	1 07	(
(c) hput Cost (kt-ac)							38 684	0.77	29 787	37,086	0.77	28 556	0	0.77	0	0	0.77	(
(d) Family Labor (kt aci							26 176	0 60	15 706	28,258	0.60	16 955	- 0	0.60	0	0	0.60	(
(e) Hired Labor (ktrac)							36 535	0 60	21 921	39,441	0.60	23 665	0	0.60	0	0	0.60	(
(f) Unit Net Profit (kt ac)						1	148,772		200.265	223,215		281 784	0		0	0		(
(g) Net Profit (Kt)							1,354,490,211		1 823 306 685	2,384,704,060		3 010 422 457	0		0	. 0		(
(h) Accumulated Net Profit (Kt)							1.354 490 211		1 823 306 685	3 739 194 271		4 833 729 142	3.739.194.271		4 833 729 142	3.739.194.271		4 833 729 142
Sub-Total (Base Case, Financial)	4 924 336 977		6 416 115 671	11 606 484 232		15 127 491 178	16 08 1 309 445		21 151,053 957	18 466 013 505		24 161 476 414	18 498 148 655		24 210 867 757			24 210 867 757
G-Tota	4,924 336,977	1	6 416 115 671	11 606 484 232		15 127 401 178	16,081,309,445		21,151,053,957	18 466 013 505		24 161 476 414	*0 400 *40 666		24 210 867 757	10 400 140 666		24 210 867 757

Benefit		2016			2017			2018			2019	
. Road Improvement	Financial cost	Conversion	Economic cost	Financial cost	Conversion	Economic cost	Financial cost	Conversion	Economic cost	Financial cost	Conversion	Economic cost
1.1 North Nawin	T III all out	Factor	20011011110 0001	7 11/01/01/01/01/01	Factor	Economic cost	7 11011010101001	Factor	20011011110 0001	, mandar cost	Factor	Economic cost
1.1.1 Monsoon Paddy (a) Area Improved (ac)												
(b) Cost before Rehabilitation (kt)												
(c) Cost after Rehabilitation (Kt)		-										
(d) Net Profit (Kt)			· · · · · · · · · · · · · · · · · · ·									
1.1.2 Summer Paddy												
(a) Area Improved (ac)	2,998		2,998	0		0	0		0	0		0
(b) Cost before Rehabilitation (kt)	179,906,400	0.99	178, 107, 336	0	0.99	0	0	0.99	0	0	0.99	0
(c) Cost after Rehabilitation (Kt)	63,515,955	0.99	62,880,795	0	0.99	0	0	0.99	0	. 0	0.99	0
(d) Net Profit (Kt)	116,390,445		115,226,541	159,497,888		115,226,541	159,497,888		115,226,541	159,497,888		115,226,541
1.1.3 Improvement of Trollergyi Driving	0.551.100	0.99	0.455.500	2 527 447	0.99	2 502 072						
(a) Monsoon Paddy Cultivation (kyat) (b) Summer Paddy Cultivation (kyat)	9,551,109 1,688,122	0.99	9,455,598 1,671,241	3,537,447 625,228	0.99	3,502,073 618,976						
(c) Black Gram Cultivation (kyat)	12,939,351	0.99	12,809,957	4,792,358	0.99	4,744,434						
(d) Sub-total of Trollergyi Driving (kyat)	24,178,582	0.55	23,936,796	8,955,033	- 0.00	8,865,483			0			
(e) Accumulation of Trollergyi (kyat)	24,178,582		23,936,796	33,133,615		32,802,279	33,133,615		32,802,279	33 133 615		32,802,279
1.2 South Nawin												
1.2.1 Monsoon Paddy												
(a) Area Improved (ac)												
(b) Cost before Rehabilitation (kt)												
(c) Cost after Rehabilitation (Kt)												
(d) Net Profit (Kt)												
1.2.2 Summer Paddy	0.015		0.016									
(a) Area Improved (ac)	2,245	0.00	2,245	1,464 87,867,000	0.00	1,464	0	0.75	0	0	0.00	0
(b) Cost before Rehabilitation (kt)	134,729,400	0.99	133,382,106		0.99	86,988,330	0	0.99	0	0	0.99	0
(c) Cost after Rehabilitation (Kt)	47,566,215	0.99	47,090,553 86,291,553	31,021,444 144,008,741	0.99	30,711,230 142,568,653	144,008,741	0.99	86,291,553	0	0.99	0
(d) Net Profit (Kt)	87, 163, 185		80,291,553	144,006,741		142,568,653	144,008,741		86,291,553	144,008,741		86,291,553
1 2.3 Improvement of Trollergyi Driving (a) Monsoon Paddy Cultivation (kyat)	13,488,602	0.99	13,488,602	8,796,914	0.99	8,708,945	0	0.99	0		-	
(b) Summer Paddy Cultivation (kyat)	1,264,211	0.99	1,251,569	824,485	0.99	816,240	0	0.99	0			
(c) Black Gram Cultivation (kyat)	28,326,064	0.99	28,042,803	18,473,520	0.99	18,288,785	0	0.99	0			
(d) Sub-total of Trollergyi Driving (kyat)	43,078,877	0.00	42,782,974	28,094,919	- 0.00	27,813,970	0	0.00	0			0
(e) Accumulation of Trollergyi (kyat)	43,078,877		42,782,974	71,173,796		70,596,944	71,173,796		70,596,944	71,173,796		70,596,944
1.3 Wegyl		,,			F 7			A	7			
1.3.1 Monsoon Paddy				A								119
(a) Area Improved (ac)				13,413		13,413	5,412		5,412	5,412		5,412
(b) Cost before Rehabilitation (kt)				934,966,937	0.99	925,617,268	377,267,324	0.99	373,494,651	377,267,324	0.99	373,494,651
(c) Cost after Rehabilitation (Kt)				284, 135, 840	0.99	281,294,482	114,651,293	0,99	113,504,780	114,651,293	0.99	113,504,780
(d) Net Profit (Kt)				650,831,097		644,322,786	9 13,447,128		904,312,657	913,447,128		904,312,657
1.3.2 Summer Paddy						7.70			5 404	4.000		1000
(a) Area Improved (ac)				773 46,358,400	0.99	773 45,894,816	5,421 325,233,000	0.99	5,421 321,980,670	1,603 96,174,600	0.99	1,603
(b) Cost before Rehabilitation (kt) (c) Cost after Rehabilitation (Kt)				16,366,833	0.99	16,203,165	114,823,511	0.99	113,675,276	33,954,443	0.99	95,212,854 33,614,899
(d) Net Profit (Kt)		,		29,991,567	0.00	29,691,651	240,401,056	0,00	237,997,045	302,621,213	50,000	299,595,000
1 1 3 Improvement of Trollergyi Driving				20,001,001		20,001,001	240,407,000		201,001,040	OUL, UL III		200,000,000
(a) Monsoon Paddy Cultivation (kyat)				7,551,739	0.99	7,476,222	3,047,192	0.99	3,016,720	30,618,220	0.99	30,312,038
(b) Summer Paddy Cultivation (kyat)				434,996	0.99	430,646	3,051,770	0.99	3,021,252	5,878,593	0.99	5,819,807
(c) Black Gram Cultivation (kyat)				10,348,045	0.99	10,244,565	4,175,529	0.99	4,133,774	3,458,976	0.99	3,424,386
(d) Sub-total of Trollergyi Driving (kyat)				18,334,780		18,151,433	10,274,491		10,171,746	39,955,789		39,556,231
(e) Accumulation of Trollergyi (kyat)				18,334,780		18,151,433	28,609,271		28,323,179	68,565,060		67,879,410
1.4 Taung Nyo		C .	K				14		(A		1	
1.4.1 Monsoon Paddy												
(a) Area Improved (ac)				16,500		16,500	10,234		10,234	0		0
(b) Cost before Rehabilitation (kt)				1,150,099,271	0.99	1,138,598,278	713,320,066	0.99	706,186,865	0		0
(c) Cost after Rehabilitation (Kt)				349,514,416 800,584,855	0.99	346,019,272 792,579,006	216,777,501 1,297,127,420	0.99	214,609,726 1,284,156,145	1,297,127,420		1,284,156,145
(d) Net Profit (Kt)				000,584,855		192,519,006	1,281,121,420		1,204,150,145	1,281,121,420	-	1,204, 150, 145
1.4.2 Summer Paddy (a) Area Improved (ac)				1,325		1,325	1,157		1,157	0		0
(b) Cost before Rehabilitation (kt)				79,498,200	0.99	78,703,218	69,405,600	0.99	68,711,544	0	0.99	0
(c) Cost after Rehabilitation (Kt)				28,066,840	0.99	27,786,172	24,503,647	0.99	24,258,611	- 0	0.99	
(d) Net Profit (Kt)				51,431,360	5.50	50,917,046	96,333,313	76.60	95,369,979	96,333,313		95,369,979
1.3.3 Improvement of Trollergyi Driving				, ,		1,- 10	,,-		,-7	/,		,,
(a) Monsoon Paddy Cultivation (kyat)				9,289,365	0.99	9,196,471	5,761,494	0.99	5,703,879	0		0
(b) Summer Paddy Cultivation (kyat)				745,958	0.99	738,498	651,256	0.99	644,743	0		0
(c) Black Gram Cultivation (kyat)				19,507,666	0.99	19,312,589	12,099,138	0.99	11,978,147	0		0
(d) Sub-total of Trollergyi Driving (kyat)				29,542,989		29,247,558	18,511,888		18,326,769	0		0
(e) Accumulation of Trollergyi (kyat)				29,542,989		29,247,558	48,054,877		47,574,327	48,054,877		47,574,327
Sub-total of Road Improve Beneft (kt)	270,811,089		268,237,864	1,988,530,688		1,926,103,897	3,031,787,105		2.902.650.649	3,133,963,051		3,003,804,835
Total (Base Case Financial)	5 195 148 066		6.684.353.535	13.595.014.920		17.053.505.075	19.113.096.550		24.053.704.606	21.599.976.556		27.165,281,249

Table 3.1.9 Financial Cost and Benefit Analyses (Base1)

						FIRR =	15.3%		B/C =	1.22	
Year		Cost (kyat)		Benefit	Benefit -Cost	Present	Presen	t Value	Present	Presen	t Value
real		Cost (Kyat)		(kyat)	(kyat)	Value Factor	Discout Rate	15.3%	Value Factor	Discout Rate	12.0%
	Investment	O & M	Total	Total			Cost	Benefit		Cost	Benefit
1	23,616,120,000		23,616,120,000	0	-23,616,120,000	0.86730	20,482,260,876	0	0.89286	21,085,888,903	0
2	28,466,262,000	63,150,000	28,529,412,000	5,195,148,066	-23,334,263,934	0.75221	21,460,109,001	3,907,842,327	0.79719	22,743,361,952	4, 141,520,087
3	44,227,943,000	141,068,061	44,369,011,061	13,595,014,920	-30,773,996,141	0.65240	28,946,342,816	8,869,387,734	0.71178	31,580,974,693	9,676,659,720
4	30,712,856,000	256,819,872	30,969,675,872	19,113,096,550	-11,856,579,322	0.56583	17,523,571,699	10,814,763,421	0.63552	19,681,848,410	12, 146, 755, 119
5	23,750,285,000	337,314,933	24,087,599,933	21,599,976,556	-2,487,623,377	0.49074	11,820,748,791	10,599,972,495	0.56743	13,668,026,830	12,256,474,697
6		337,314,933	337,314,933	21,599,976,556	21,262,661,623	0.42562	143,567,982	9,193,382,022	0.50663	170,893,865	10,943,196,123
7		337,314,933	337,314,933	21,599,976,556	21,262,661,623	0.36914	124,516,434	7,973,415,346	0.45235	152,584,410	9,770,749,395
8		337,314,933	337,314,933	21,599,976,556	21,262,661,623	0.32016	107,994,749	6,915,448,494	0.40388	136,234,755	8,723,798,531
9		337,314,933	337,314,933	21,599,976,556	21,262,661,623	0.27767	93,662,237	5,997,665,490	0.36061	121,639,138	7,789,167,546
10		337,314,933	337,314,933	21,599,976,556	21,262,661,623	0.24083	81,235,555	5,201,922,354	0.32197	108,605,289	6,954,544,452
11		337,314,933	337,314,933	21,599,976,556	21,262,661,623	0.20887	70,454,970	4,511,587,103	0.28748	96,971,297	6,209,561,260
12		337,314,933	337,314,933	21,599,976,556	21,262,661,623	0.18115	61,104,600	3,912,835,753	0.25668	86,581,997	5,544,281,982
13		337,314,933	337,314,933	21,599,976,556	21,262,661,623	0.15712	52,998,922	3,393,788,316	0.22917	77,302,463	4,950,066,627
14		337,314,933	337,314,933	21,599,976,556	21,262,661,623	0.13627	45,965,906	2,943,428,805	0.20462	69,021,382	4,419,787,203
15		337,314,933	337,314,933	21,599,976,556	21,262,661,623	0.11818	39,863,879	2,552,685,229	0.18270	61,627,438	3,946,315,717
16		337,314,933	337,314,933	21,599,976,556	21,262,661,623	0.10250	34,574,781	2,213,997,597	0.16312	55,022,812	3,523,388,176
17		337,314,933	337,314,933	21,599,976,556	21,262,661,623	0.08890	29,987,298	1,920,237,916	0.14564	49,126,547	3,145,820,586
18		337,314,933	337,314,933	21,599,976,556	21,262,661,623	0.07710	26,006,981	1,665,358,192	0.13004	43,864,434	2,808,860,951
19		337,314,933	337,314,933	21,599,976,556	21,262,661,623	0.06687	22,556,250	1,444,390,432	0.11611	39,165,637	2,507,973,278
20		337,314,933	337,314,933	21,599,976,556	21,262,661,623	0.05800	19,564,266	1,252,798,640	0.10367	34,969,439	2,239,269,570
21		337,314,933	337,314,933	21,599,976,556	21,262,661,623	0.05030	16,966,941	1,086,478,821	0.09256	31,221,870	1,999,293,830
22		337,314,933	337,314,933	21,599,976,556	21,262,661,623	0.04363	14,717,051	942,406,977	0.08264	27,875,706	1,785,022,063
23		337,314,933	337,314,933	21,599,976,556	21,262,661,623	0.03784	12,763,997	817,343,113	0.07379	24,890,469	1,593,862,270
24		337,314,933	337,314,933	21,599,976,556	21,262,661,623	0.03282	11,070,676	708,911,231	0.06588	22,222,308	1,423,006,456
25		337,314,933	337,314,933	21,599,976,556	21,262,661,623	0.02846	9,599,983	614,735,333	0.05882	19,840,864	1,270,510,621
26		337,314,933	337,314,933	21,599,976,556	21,262,661,623	0.02469	8,328,306	533,303,421	0.05252	17,715,780	1,134,430,769
27		337,314,933	337,314,933	21,599,976,556	21,262,661,623	0.02141	7,221,913	462,455,498	0.04689	15,816,697	1,012,822,901
28		337,314,933	337,314,933	21,599,976,556	21,262,661,623	0.01857	6,263,938	401,111,565	0.04187	14,123,376	904,391,018
29		337,314,933	337,314,933	21,599,976,556	21,262,661,623	0.01610	5,430,770	347,759,623	0.03738	12,608,832	807,407,124
30		337,314,933	337,314,933	21,599,976,556	21,262,661,623	0.01397	4,712,290	301,751,672	0.03338	11,259,572	721,007,217
Total	150,773,466,000	9,231,226,191	160,004,692,191		439,497,957,801		101,284,163,858	101,501,164,920		110,261,287,165	134,349,945,289
							NPV =	217,001,062		NPV =	24,088,658,124

Table 3.1.10 Economic Cost and Benefit Analyses (Base1)

					EIRR =	22.2%		B/C =	1.66	
	Cost (kyat)		Benefit	Benefit -Cost	Present Value	Preser	nt Value	Present Value	Preser	nt Value
	Cost (kyat)		(kyat)	(kyat)	Factor	Discout Rate	22.2%	Factor	Discout Rate	12.0%
Investment	O&M	Total	Total			Cost	Benefit		Cost	Benefit
21,924,003,000		21,924,003,000	0	-21,924,003,000	0.81833	17,941,069,375	0	0.89286	19,575,065,319	0
23,858,119,000	63,150,000	23,921,269,000	6,684,353,535	-17,236,915,465	0.66966	16,019,116,999	4,476,244,188	0.79719	19,069,796,434	5,328,699,795
41,531,145,000	141,068,061	41,672,213,061	17,053,505,075	-24,618,707,986	0.54801	22,836,789,480	9,345,491,316	0.71178	29,661,447,813	12,138,343,842
29,600,465,000	256,819,872	29,857,284,872	24,053,704,606	-5,803,580,266	0.44845	13,389,499,401	10,786,883,831	0.63552	18,974,901,682	15,286,610,351
22,759,543,000	337,314,933	23,096,857,933	27,165,281,249	4,068,423,316	0.36698	8,476,084,924	9,969,114,913	0.56743	13,105,850,097	15,414,395,539
	337,314,933	337,314,933	27,165,281,249	26,827,966,316	0.30031	101,299,048	8,158,005,612	0.50663	170,893,865	13,762,746,439
	337,314,933	337,314,933	27,165,281,249	26,827,966,316	0.24575	82,895,145	6,675,867,867	0.45235	152,584,410	12,288,214,973
	337,314,933	337,314,933	27,165,281,249	26,827,966,316	0.20111	67,837,406	5,463,209,712	0.40388	136,234,755	10,971,513,791
	337,314,933	337,314,933	27,165,281,249	26,827,966,316	0.16457	55,511,919	4,470,590,335	0.36061	121,639,138	9,796,072,071
	337,314,933	337,314,933	27,165,281,249	26,827,966,316	0.13468	45,429,575	3,658,620,079	0.32197	108,605,289	8,746,405,604
	337,314,933	337,314,933	27,165,281,249	26,827,966,316	0.11021	37,175,479	2,993,885,646	0.28748	96,971,297	7,809,475,053
	337,314,933	337,314,933	27,165,281,249	26,827,966,316	0.09019	30,422,434	2,450,036,716	0.25668	86,581,997	6,972,784,39
	337,314,933	337,314,933	27,165,281,249	26,827,966,316	0.07380	24,893,842	2,004,797,756	0.22917	77,302,463	6,225,467,504
	337,314,933	337,314,933	27,165,281,249	26,827,966,316	0.06040	20,373,822	1,640,782,987	0.20462	69,021,382	5,558,559,849
	337,314,933	337,314,933	27,165,281,249	26,827,966,316	0.04942	16,670,104	1,342,508,199	0.18270	61,627,438	4,963,096,884
	337,314,933	337,314,933	27,165,281,249	26,827,966,316	0.04044	13,641,016	1,098,563,974	0.16312	55,022,812	4,431,200,67
	337,314,933	337,314,933	27,165,281,249	26,827,966,316	0.03310	11,165,124	899,170,809	0.14564	49,126,547	3,956,351,56
	337,314,933	337,314,933	27,165,281,249	26,827,966,316	0.02708	9,134,488	735,635,816	0.13004	43,864,434	3,532,573,17
	337,314,933	337,314,933	27,165,281,249	26,827,966,316	0.02216	7,474,899	601,982,632	0.11611	39,165,637	3,154,160,80
	337,314,933	337,314,933	27,165,281,249	26,827,966,316	0.01814	6,118,893	492,778,202	0.10367	34,969,439	2,816,224,70
	337,314,933	337,314,933	27,165,281,249	26,827,966,316	0.01484	5,005,754	403,132,774	0.09256	31,221,870	2,514,418,43
	337,314,933	337,314,933	27,165,281,249	26,827,966,316	0.01215	4,098,376	330,058,167	0.08264	27,875,706	2,244,938,84
	337,314,933	337,314,933	27,165,281,249	26,827,966,316	0.00994	3,352,910	270,022,896	0.07379	24,890,469	2,004,526,10
	337,314,933	337,314,933	27,165,281,249	26,827,966,316	0.00813	2,742,370	220,853,737	0.06588	22,222,308	1,789,648,729
	337,314,933	337,314,933	27,165,281,249	26,827,966,316	0.00666	2,246,517	180,920,773	0.05882	19,840,864	1,597,861,84
	337,314,933	337,314,933	27,165,281,249	26,827,966,316	0.00545	1,838,366	148,050,783	0.05252	17,715,780	1,426,720,57
	337,314,933	337,314,933	27,165,281,249	26,827,966,316	0.00446	1,504,425	121,157,154	0.04689	15,816,697	1,273,780,038
	337,314,933	337,314,933	27,165,281,249	26,827,966,316	0.00365	1,231,200	99,153,277	0.04187	14,123,376	1,137,410,326
	337,314,933	337,314,933	27,165,281,249	26,827,966,316	0.00298	1,005,199	80,952,538	0.03738	12,608,832	1,015,438,213
	337,314,933	337,314,933	27,165,281,249	26,827,966,316	0.00244	823,048	66,283,286	0.03338	11,259,572	906,777,088
139,673,275,000	9,231,226,191	148,904,501,191	747,404,522,155	605,184,374,499	4	79,216,451,538	79,184,755,975		101,888,247,722	169,064,417,19
-						NPV =	-31,695,563	-	NPV =	67,176,169,47

Table 3.1.11 Project Cost Estimation (Financial / Economic)-Base2

LC S	Ental Material Skolled Labor	Figer FC Exto.593	ic c	Consersion Eactor	Schnomic	Fina	near			5400		- 1		Para	eist:			Financ	ial	and a	
LC SI	Ental Material Skolled Labor		ic		Semonic			Conversion		Final	Ola	Conversion		Fmar	cui.	Contention		111000		Convession	
LC SI	Ental Material Skolled Labor	Ex10,593				#C	(e	Factor	Freedme	60	(ic)	Factor	Etymorac	FO	10	Facion	Economic	FC	LÉ:	Factor	Economic
LC SI	Material Stalled Labor			LH.	4,670.192	1.257,815		1.06	1157425	425,100		.(2)	925,166								
LC SI	Skalled Labor		6,326,617		1107 801		1,05-449		17/10/106		867.771	- 3	744 48_	-	-	-	-	-			
u U	1		125/00	1776	1 219 080) (u)	0.09	763,635		00,259	11,95	364 734		-			-			
16			1,009,816	(30)	2,019.876		467.578	100	461,814		291779	199	24// 339	1				-		-	
South Nawii	Unskilled Labor		3,064,741	0.01	1 808 845		698,325	0.60	418.965		-99.013	0.60	179 408		- 1		- 1				
	n	1,590.200		1392	1,193,300	4,399,837		3.00	4,309,855	4,589,361		1.07	4,569.261						6	+	
	Total		1,96451		1 293.83/		3344.566	1	2986,129	-	3.860 (33)	-	3,3 % 230	-					-	-	
10	Material		41,29	0.99	108 153		1597 40	0.90	1.481.450	-	1,610	0.99	1,144 629					10			
42.	Skill ed Labor	-	-54,691	190	414,491	-	741,647	3.00	742,047		149-592	1.00	849 692			-	-		=	=	
	Unskilled Labor		A18 643	bote	3"1 186		Liken	0.60	867 625	-	1,268,197	0.66	*61,918				-	-		7	
Wegy		1	3	1 5						6.935.754		100	9 94 5 784	1 *\$6 240		100	8 189 769	23/6972		EUF	-119
	Total								-		8,576,710		7,145 691	-	0.347,854	-	> 684.899		5,587,825	-	4 3
- I	Material								1		0191.590	0.49	3,119,728	1	-69 (86)	0.09	3,567,418		2/01/1998	E 99	2,915
10	Skilled Liber										JIN 684	168	1116,689		Action .	161	1 11 091		100.554	4.00	-48
	Unskilled Labor		-						-		1048,191	0.60	1949-274	9	1,667,340	9.60	81 قر100 ا		1,463,000	3.61	8
Taung Nya	Q.									1,855,500	-	100	1,855,500	5,886,768		1700	5.886.708	3,727676		1.00	3,72
	Titil										3227 (2)		5364/679		2.91.90		4 249 84		2786,745		2.457
	Material			-						-	4,000-751	11.99	2772,357		353 P16	11.98	1.55(6))		130700	296	1 820
LC	Skilled Labor										211,390	1.00	573,099		18966	100	378(165)		18161	1,00	3 8.
	Unskilled Labor										844.315	0.65	515.223		561.425	0.60	338.655		801 J.	5.64	338.
Sub Total(FC-1	LC	7362,794	1,815,981		13,664,425	6,767,662	5,512,115		(1.204,34)	20,295,645	16852.442	-	84,805,727	14,476,417	10,919,340		14,491.23	11.174.141	4,369,350		18.482
Machineries	es .	1,914204		199	5944204	8.671.306		1.00	4.873,306		- 1							1			
Procuremen			- 4	0.99	9		117.385	699.	136,371												
Engineering Sei	ervice														-						
Engineering Servi				-		2 898 040		3.00	1,838,040			-						-1			
				1			729.824	0.99	122.128								1				
Engmetting Service	nerst)					110,10		100	1.14, 140	8.162100		1.00	1160.190	1.02196		1.00	F155130	Littie		1,09	LBU
4 1024							293,500	0.99	190,773	-	295,740	0.98	299,378		293,710	().99	29653		293 -10)	12.94	.90
T tal		(3,178,593	1813,017		10.418.636	(0.110)(8	6353344		1164 934	28,817,193	17146.145		36235.640	[56 86 T	U zekoro	1	15,864 156	12315,988	8.463 290		19,913
		17.1-01589	-0.39354		167.400%	Fe 21/48	-0.213,284		1024391	4.00	9 (140, 5°2)		39-258-640	12,010.011	11:21:00:19		ar,and 190	45.05,000	0.402 .90		19,91.
hyseral Contingency	5%	628.836	593,671		978.931	910,957,460	327,635/200		(381746.95)	1.011,889 250	897,387,600		6,814,952,000	80 930 850	560,653		1,293,307	61,5699 400	4,23 164 598		99.5
(FC+LC)	10%	726,279	787,364		1,366,443	656,766,000	558 211 560		1,130,134,300	1025(564 500	1 68 5 244 400		3,488,571 700	1447641380	1,091,936		2,445,022	111 / 184 800	811,918-500		1 848 419
Sub-Total		14,362,127	9,953,993		21 924 603	14.646.821.660	1419390 300		29348.120	14,539.239	19 688 TÖH		10531.145	17847 192850	12.865.660		29.860, 86.8°	N 946 8 1269	9 703 412 590	Ī	-01-759
rand-Total/FC+LC)			13.666 E33				18 466 262				44 227,943				307/2856				3,715.8		
O8M	03%					19 531	45 61 ⁹		50,755.881	91,788438	43 = 9 6.3		123,769.564	163 101 193	94 1/8 079		231 416 624	368551644	1 8.3 51 89		110209

Table 3.1.12 Project Cost and Benefit Estimation -Base2

		Table	S.I.IZ PIOJE	Ct Cost and B	enefit Estimatioi				
Particulars		FC/LC	Total	Ratio, %	2014	2015	2016	2017	2018
Implementation									
Civil & Structure Construction									
1.1 North Nawin		FC	8,853,517,000	49	5,670,592,000	2,257,825,000	925,100,000		
		LC	9,131,937,000	51	6,326,617,000	1,937,549,000	867,771,000		
		(unskilled labors)	4,012,079,000	44	3,014,741,000	698,325,000	299,013,000		
		Sub Total (FC+LC)	17,985,454,000	100	11,997,209,000	4,195,374,000	1,792,871,000	0	
1.2 South Nawin		FC	10,471,300,000	54	1,592,202,000	4,309,837,000	4,569,261,000		
		LC	8,871,117,000	46	1,546,420,000	3,444,566,000	3,880,131,000		
		(unskilled labors)	2,992,881,000	34	618,643,000	1,106,041,000	1,268,197,000		
		Sub Total (FC+LC)	19,342,417,000	100	3,138,622,000	7,754,403,000	8,449,392,000	0	
1.3 Wegyi		FC	25,984,725,000	56		.,,,,	9,945,784,000	8,589,769,000	7,449,172,000
		LC	20,352,398,000	44			8,576,719,000	6,387,854,000	5,387,825,000
		(unskilled labors)	6,379,155,000	31			3,248,790,000	1,667,300,000	1,463,065,000
		Sub Total (FC+LC)	46,337,123,000	100			18,522,503,000	14,977,623,000	12,836,997,000
1.4 Taung Nyo		FC FC	14,464,884,000	57			4,855,500,000	5,886,708,000	3,722,676,000
1:4 rading Nyo		LC	10,841,082,000	43			3,527,821,000	4,531,506,000	2,781,755,000
		(unskilled labors)	2,348,591,000	22			855,372,000	928,794,000	564,425,000
				100					
Total of Civil & Structure Construction		Sub Total (FC+LC)	25,305,966,000		7 000 704 000	0.507.000.000	8,383,321,000		6,504,431,000
Total of Civil & Structure Construction		FC	59,774,426,000	55	7,262,794,000	6,567,662,000	20,295,645,000	14,476,477,000	11,171,848,000
		LC	49,196,534,000	45	7,873,037,000	5,382,115,000	16,852,442,000	10,919,360,000	8,169,580,000
		(unskilled labors)	15,732,706,000	32	3,633,384,000	1,804,366,000	5,671,372,000	2,596,094,000	2,027,490,000
		Total (FC+LC)	108,970,960,000	100	15,135,831,000	11,949,777,000	37,148,087,000	25,395,837,000	19,341,428,000
2. Machineries Procurement		FC	14,785,510,000	99	5,914,204,000	8,871,306,000			
		LC	147,855,100	1		147,855,100			
		Total (FC+LC)	14,933,365,100	100	5,914,204,000	9,019,161,100	0	0	
5. Engineering Service			0						
5.1 Engineering Service (DD)		FC	2,838,040,000	80		2,838,040,000			
		LC	729,824,000	20		729,824,000			
		Total (FC+LC)	3,567,864,000	100		3,567,864,000	0	0	
5.2 Engineering Service (SV)		FC	4,326,290,000	80		1,142,140,000	1,142,140,000	1,142,140,000	899,870,000
		LC	1,112,540,000	20		293,710,000	293,710,000	293,710,000	231,410,000
		Total (FC+LC)	5,438,830,000	100		1,435,850,000	1,435,850,000	1,435,850,000	1,131,280,000
1.1 Total of 1, 2, 5 (FC)		FC	81,724,266,000	61	13,176,998,000	19,419,148,000	21,437,785,000	15,618,617,000	12,071,718,000
1.2 Total of 1, 2, 5 (LC)		LC	51,186,753,100	39	7,873,037,000	6,553,504,100	17,146,152,000	11,213,070,000	8,400,990,000
1.3 Total of 1, 2, 5 (Unskilled Labors)		(unskilled labors)	15,732,706,000	31	3,633,384,000	1,804,366,000	5,671,372,000	2,596,094,000	2,027,490,000
1.4 Total of 1, 2, 5 (Grand Total)		Total (FC+LC)	132,911,019,100	100	21,050,035,000	25,972,652,100	38,583,937,000	26,831,687,000	20,472,708,000
2.1 Physical Contingency (5% of 1.1)	5%	FC	4,086,213,300	61	658,849,900	970,957,400	1,071,889,250	780,930,850	603,585,900
2.2 Physical Contingency (5% of 1.2)	5%	LC	2,559,337,655	39	393,651,850	327,675,205	857,307,600	560,653,500	420,049,500
2.3 Physical Contingency (5% of 1.3)	5%	(unskilled labors)	786,635,300	31	181,669,200	90,218,300	283,568,600	129,804,700	101,374,500
2.4 Physical Contingency (5% of 1.4)	5%	Total (FC+LC)	6,645,550,955	100	1,052,501,750	1,298,632,605	1,929,196,850	1,341,584,350	1,023,635,400
						·			
3.1 Total of 1.1 & 2.1		FC	85,810,479,300	61	13,835,847,900	20,390,105,400	22,509,674,250	16,399,547,850	12,675,303,900
3.2 Total of 1.1 & 2.2		LC	53,746,090,755	39	8,266,688,850	6,881,179,305	18,003,459,600	11,773,723,500	8,821,039,500
3.3 Total of 1.1 & 2.3		(unskilled labors)	16,519,341,300	31	3,815,053,200	1,894,584,300	5,954,940,600	2,725,898,700	2,128,864,500
3.4 Total of 1.1 & 2.4		Total (FC+LC)	139,556,570,055	100	22,102,536,750	27,271,284,705	40,513,133,850	28,173,271,350	21,496,343,400
4. Project Management (10% of 1)	10%	LC	10,897,096,000	100	1,513,583,100	1,194,977,700	3,714,808,700	2,539,583,700	1,934,142,80
5. Others (Miscellaneous, 5% of 1-2)	5%	LC	5,744,258,200	100	1,052,501,750	597,488,850	1,857,404,350	1,269,791,850	967,071,400
6.1 Grand Total Cost for Project Evaluation		FC	85,810,479,300	55	13,835,847,900	20,390,105,400	22,509,674,250	16,399,547,850	12,675,303,900
6.2 Grand Total Cost for Project Evaluation		LC		45					
6.3 Grand Total Cost for Project Evaluation		1.75	70,387,444,955		10,832,773,700	8,673,645,855	23,575,672,650	15,583,099,050	11,722,253,70
o.s Grand Total Cost for Project Evaluation		Total (FC+LC)	156,197,924,255	100	24,668,621,600	29,063,751,255	46,085,346,900	31,982,646,900	24,397,557,600
7. Operation and Maintenance	0.30%	LC				63,150,105	126,056,919	237,501,180	313,688,691
						, ,	, ,	, , ,	, -,

articulars	FOILC	Total	Ratio. %	2014	2015	2016	2017	2018	2019	2020	Remarks
nefit griculture Production 1 North Nawin				100							
1 North Nawin											
1.1.1 Black Gram (a) Increase of Sawn Area (ac)					10.192 16	15.178 42	0.00				
(a) Increase of Sawn Area (ac) (b) Gross Profit (KVac)					328,000	328,000	328,000	328,000		1000000	
(c) input Cost (kVac) (d) Family Labor (kVac) (e) Hired Labor (kVac)	+		-	-	37,086 28,2 58	37,086 28,258	37,086 28.2	37,086 28,258			
(e) Hired Labor (kVac)					36 535	39 441	39 441	37,188			
(f) Unit Net Profit (kt/ac)		-			226,121 2,304,661,411	223,215 3,388,051 020	223,215	225,468		1	
(f) Unit Net Profit (kVac) (g) Net Profit (kt) (h) Accumulated Het Profit (kt) 2 South Nawin			-		2 304 661 411	5 692 7 12 431	5 692 712 431	5 692 712 431	5 692 712 431	5 692 712 4 31	
(a) Increase of Sawn Area (ac) (b) Gross Profit (kVac)	_		_		17 60 8 66	22 141 91	18 705 22 250 167	0.00	0.00		
(b) Gross Profit (KVac)					250,167	250 167	250 167	250,167			
(c) Input Cost (kVac)	_		-		38.6 84 26.176	38 684	38,684	38.684			
(d) Family Labor (kVac) (e) Hired Labor (kVac)			-		36535	26 176 36 535	26 176 36 535	26,176 36,535			
(f) Unit Net Profit (kVac) (g) Net Profit (kt) (h) Accumulated Net Profit (kt)					148 772 2 619 675 566 2 61 9 675 566	148 772	148 772	148 772			
(h) Accumulated Net Profit (kt)	+		-		2 619 675 566	3 294 096 235 5 913 771 801	2 782 812 990 8 696 584 791	8 6 9 6 5 8 4 7 9 1	8,696 584 791	8 6 9 6 5 8 4 7 9 1	
3 Wegyi 1 3 1 Black Gram										2000000	
13.1 Black Gram			_				2 269 72	0.00	422.17		
(a) Increase of Sawn Area (ac) (b) Gross Frofit (KVac) (c) Input Cost (kVac)							250 167	328,000 37,086 28,258	433 17 153 4 94 15 476 26,644 37 188 74 186 32 135 150		
(c) Input Cost (kVac)							38,684	37.086	15 476		
(d) Family Labor (kVac) (e) Hired Labor (kVac) (f) Unit Net Profit (kVac) (g) Net Profit (kVac)			-		1		36 535	39 441	37 188		
(f) Unit Net Profit (kVac)							148 772	39.441 223215	74 186		
							2 268 72 250 167 38,684 26 176 36 535 148 772 337 522,012 337 522,012	337 522 012	32 135 150 369,657 162	369,657,162	
4 Taung Nyo 1.4.1 Black Gram											
1.4.1 Black Gram							0.101	40.003	40.000		
(a) Increase of Sawn Area (ac) (b) Gross Frofit (kVac) (c) Input Cost (kVac)						-	9 104 47 250 167	328.000	10,926 80		
(c) Input Cost (kVac)							38.684	37 086	15,476		
(d) Family Labor (kVac) (e) Hired Labor (kVac) (f) Unit Net Profit (kVac)							26 176	28,258	26,644		
(f) Unit Net Profit (kVac)							148 772	223,215	74,186		
(g) Net Profit (kt) (h) Accumulated Net Profit (kt)							1,354,490 211	2,384,704,060	810,615,585	4 5 40 850 555	
					4.924.336.977	11.606.484.232	16 081 309 445	18 466 013 505	19 308 754 240	19.308.754.240	
Road Improvement											
1 North Pawin 1.1 1 Monsoon Paddy for threshing											
(a) Area Improved (ac) (b) Cost before Rehabilitation (kt)					0	0	0	0	0		
(b) Cost before Rehabilitation (kt)					0	0	0	0	0		
(c) Cost after Rehabilitation (Kt) (d) Net Profit (Kt)					0	0	0	0	0	-	
1 1 2 Summer Faddy for threshing (a) Area Improved (ac) (b) Cost before Rehabilitation (kt)											
(a) Area Improved (ac)					2 998 44	1,110 53	0 00	0.00	0 00	0.00	
					179 906,400 63 515 955 116 390,445	66,631,800 23,524,357 159,497,888	0	0	0	0	
(d) Het Profit (kt) 11.3 Improvement of Trollerg y Driwng Condition (a) Monsoon Paddy Cultivation (kyat) (b) Summer Padd y Cultivation (kyat) (c) Black Gram Cultivation (kyat)					116 390,445	159 497 888	159 497 888	159,497,888	159 497 888	159 497 888	
(a) Monsoon Paddy Cultivation (kvat)	-			-			0				
(b) Summer Padd y Cultivation (kyat)					9 551 109 1,688 122 12,939,351	3,537,447 625,228 4,792,358	0				
(c) Black Gram Cultivation (kyat)					12,939,351	4,792,358	33 133 615	33,133,615	33,133,615	33,133,615	
(d) Accumulation above (kyat) 2 South Nawin 1 2 1 Mensoon Paddy					24,170,582	15 مرددارده	22 122 615	33,133,615	33,133,615	33,133,615	
1 2 1 Monsoon Paddy					0		0	a			
(a) Area Improved (ac) (b) Cost before Rehabilitation (kt)	+		+	-	0	0	0		0		
(c) Cost after Rehabilitation (Kt) (d) Net Profit (Kt)					0	ŏ	ŏ	0	Ö		
(d) Net Profit (kt) 1.2.2 Summer Paddy					0	0	0	0	0		
(a) Area Improved (ac) (b) Cost before Rehabilitation (kt)				is a	2 245 49	1.464 45	0 00	0.00	0 00	0.00	
(b) Cost before Rehabilitation (kt)					134 729,400	1,464 45 87,867,000 31,021,444	0	0	0	0	
(c) Cost after Rehabilitation (Kt) (d) Net Profit (Kt)				-	2 245 49 134 729,400 47 566 215 87 163 185	31 021,444 144 008 741	144 008 741	144,008 741	144 008 741	144,008 741	
1.2.3 Improvement of Trollergy Driving Condition									500 /41		
(a) Monsoon Paddy Cultivation (kyal)					13,488,602	8,796,914	0				
(d) Net Profit (Kt) 12 3 Improvement of Trollergy Driving Condition (a) Monsoon Paddy Cullivation (kyat) (b) Summer Paddy Cullivation (kyat) (c) Black Gram Cultivation (kyat)					1 264 211 28.326.064 43.078.877	824,485 18,473,520 71,173,796	0				
					43,078,877	71,173,796	71 173 796	71 173 796	71 173 796	71 173 796	
SWegy 3 Thorseon Faddy (a) Area Improved (ac) (b) Cost before Rehabilitation (kt) (c) Cost after Rehabilitation (kt)			-								
(a) Area Improved (ac)							13 413 39	5,412.42	0 0 0	0.00	
(b) Cost before Rehabilitation (kt)							934 966 937 284 135 840	377 267 324 114 651 293	0	0	
(d) Net Profit (KI)	1						650 831 097	913,447 128	913 447 128	913 447 128	
1 3 2 Summer Paddy							772 64	5,420 55		0.00	
(c) Cost aner Kenabilitation (Kt) (d) Flet Profit (kt) 1 3 2 Summer Paddy (a) Area Improved (ac) (b) Cost before Rehabilitation (kt)			-	-			772 64 46 3 58 400	325 233 000	1 602 91 96 174 600	0.00	
(c) Cost after Rehabilitation (Kt) (d) Net Profit (Kt)							46 3 58 400 16 366 833 29 991 567	325 233,000 114 823 511	96 174 600 33 954 443	0	
(d) Net Profit (Kt)			_				29,991 567	240,401 056	302,621,213	302,621,213	
(d) Net Profit (kt) 13 3 Improvement of Trollergy Driving Condition (a) Monsoon Paddy Cultivation (kyat) (b) Summer Paddy Cultivation (kyat) (c) Black Gram Cultivation (kyat)							7 551 739	3 047 192	30,618,220		
(b) Summer Paddy Cultivation (kyar)							7 551 739 434 996 10,348,045	3 047 192 3 051 770 4 175 529	30,618,220 5,878,593 3,458,976		
(c) Black Gram Cullivation (kyal) (d) Accumulation above (kyal)					+		10,348,045 18,334,780	4,175,529 28,609,271	3 458,976 68,565,060	68.565.060	
4 Taung Nyo		Î		1	1		,0,334,730	20,309 271	55,565,080	.00,000,000	
							16,499 76	10 233 56	0 00	0.00	
(a) Area improved (ac) (b) Cost before Rehabilitation (kt) (c) Cost after Rehabilitation (kt) (d) Net Profit (kt)	+			-	1		1 150 099 271	713 320 066	0 00	0.00	
(c) Cost after Rehabilitation (Kt)	1	-					349 514 416	216 777 501	0	Ö	
(d) Net Profit (Rt) 1.4.2 Summer Paddy							800 584 855	1,297,127,420	1,297,127,420	1 297 127 420	
142 Summer Paddy							1 324 97	1,156 76	0 0 0	0.00	
(b) Cost before Rehabilitation (kt)							79,498 200 28,066 840	69,405,600 24,503,647	0	0	
(c) Cost after Rehabilitation (Kt) (d) Net Profit (Kt)				-			28,066 840 51,431 360	24,503,647 96,333,313	96 333 313	96 333 313	
(4)									30 333 313	30 333 313	
1.1.3 Improvement of Trollergy Driving Condition							9 289 365	5.761,494	0		
1.3 Improvement of Trollergy Driving Condition (a) Monsoon Paddy Cultivation (kyat)											
(a) Week improved whether (it) (b) Cost a first Rein abilitation (it) (c) Cost a first Rein abilitation (it) (d) Het Prolit (it) (1) Interpolit (it) (a) Mensoon Paddy Cultivation (it) (b) Summer Paddy Cultivation (it) (b) Summer Paddy Cultivation (it) (b) Summer Cost (it)							745 958	651 256	0		
1 3 Improvement of Trollergy Driving Condition (a) Mensoon Paddy Culivation (kyat) (c) Black Gram Culivation (kyat) (d) Accumulation above (s) Black Gram Culivation (kyat) (d) Accumulation above (kyat) Sub-total of Road improve Benefit (kt) Total (Base Crase Financial)					270,811,089		745 958 19 507 666 29 542 989 1 988 530 688	651 256 12,099 138 48,054,877	0 0 48 054 877	48 054 877 3 133 963 051	

Table 3.1.13 Project Benefit Estimation -Base 2

х		2015			2016			2017			2018			2019	
Agriculture Product on	Financial	Conversion	F		Conversion	-	Figure state	Conversion	_	Figure	Conversion	F	Fig. 100	Conversion	F
1.1 North Nawin	Financial	Factor	Economic	Financial	Factor	Economic	Financial	Factor	Economic	Financial	Factor	Economic	Financial	Factor	Economic
1 1 1 Black Gram									- 1						
(a) Increase of Sawn Area (ac)	10,192.16		10,192	15,178.42		15,178.42	0	0.00	0	0	0.00	0	0	0.00	0
(b) Gross Profit (Kt/ac)	328,000	1.07	350,960	328,000	1.07	350,960									
ic) Input Cost (kt/ac)	37,086	0.77	28,556	37,086	0.77	28 556									
(d) Family Labor (kt/ac)	28,258	0.60	16,955	28,258	0.60	16 955									
(e) H red Labor (kt/ac)	36,535	0.60	21,921	39,441	0.60	23,665						7			
(f) Unit Net Profit (kt/ac)	226,121		283,528	223,215		281,784									
(g) Net Profit (Kt)	2,304,661,411		2,889,717,376	3 388,051,020		4.277,035,901									
(h) Accumu ated Net Profit Kt)	2.304.661.411		2,889,717,376	5,692,712,431		7,166,753,277	5,692,712,431		7,166,753,277	5,692,712,431		7,166,753,277	5,692,712,431		7,166,753,277
1.2 South Nawin															
1.2.1 Black Gram	1														
(a) Increase of Sawn Area (ac)	17,608 66		17,608 66	22,141,91		22 141 91	18,705 22		18,705.22	D	0.00	Ď.	Ō	0.00	0
(b) Gross Profit (Kt/ac)	250,167	1.07	267,679	250 167	1.07	267,679	250,167	1.07	267,679						
(c) Input Cost (kt/ac)	38,684	0.77	29,787	38_684	0.77	29 787	38,684	0.77	29,787						
(d) Family Labor (kt/ac)	26,176	0.60	15,706	26,176	0.60	15,706	26,176	0.60	15,706						
(e) H red Labor (kt/ac)	36,535	0.60	21,921	36,535	0.60	21,921	36,535	0.60	21,921						
(f) Unit Net Profit (kt/ac)	148,772		200,265	148,772		200.265	148,772		200,265						
(g) Net Profit (Kt)	2,619,675,566		3,526,398,295	3,294,096,235		4,434,249,606	2,782,812,990		3,746,000,883						
(h) Accumu ated Net Profit (Kt)	2.619.675.566		3,526,398,295	5,913,771,801		7,960,647,901	8,696,584,791		11,706,648,784	8,696,584,791		11,706,648,784	8,696,584,791		11,706,648,784
1.3 Wegyi					-										
1.3.1 Black Gram															
(a) Increase of Sawn Area (ac)	1					1	2,268 72		2 268 72	0.00		0.00	433 17		433 17
(b) Gross Profit (Kt/ac)							250,167	1.07	267,679	328,000	1.07	350,960	153,494	1.07	164 239
(c) Input Cost (kt/ac)							38,684.00	0.77	29,787	37,086	0.77	28,556	15.476	0.77	11,917
(d) Family Labor (kt/ac)							26,176	0.60	15,706	28 258	0.60	16,955	26,644	0.60	15,986
(e) H red Labor (kt/ac)							36,535 00	0 60	21.921	39,441	0.60	23,665	37,188	0 60	22,313
(f) Unit Net Profit (kt/ac)							148,772		200,265	223,215		281,784	74,186		114,023
(g) Net Profit (Kt)							337,522,012		454,345,211	D		0	32,135,150		49,391,343
(h) Accumu ated Net Profit (Kt)							337,522,012		454,345,211	337,522,012		454,345,211	369,657,162		503,736,554
1 4 Taung Nyo											100				
1.4.1 Black Gram															
(a) Increase of Sawn Area (ac)							9,104.47		9,104.47	10,683.44		10,683.44	0.00		0.00
(b) Gross Profit (Kt/ac)					1		250,167	1.07	267,679	328,000	1.07	350,960	0	1.07	0
(c) Input Cost (kt/ac)							38,684	0.77	29,787	37,086	0.77	28,556	0	0.77	0
(d) Family Labor (kt/ac)					5 - 1		26,176	0.60	15,706	28,258	0.60	16,955	0	0.60	0
(e) H red Labor (kt/ac)							36,535	0.60	21,921	39,441	0.60	23,665	0	0.60	0
(f) Unit Net Profit (kt/ac)							148,772		200,265	223,215		281,784	0		C
(g) Net Profit (Kt)							1,354,490,211		1,823,306,685	2,384,704,060		3,010,422,457	0		0
(h) Accumulated Net Profit (Kt)					- 5		1,354,490,211		1,823,306,685	3,739,194,271		4,833,729,142	3,739,194,271		4,833,729,142
Sub-Total (Base Case, Financial)	4.924 336 977		6.416.115,671	11 606 484 232		15,127,401,178	16.081.309.445		21,151,053,957	18,466,013,505		24,161,476,414	18,498,148,655		24,210,867,757

Benefit		2016			2017			2018			2019	
. Road Improvement	Financial cost	Conversion	Economic cost	Financial cost	Conversion	Economic cost	Financial cost	Conversion	Economic cost	Financial cost	Conversion	Economic cos
1.1 North Nawin	Financial cost	Factor	Economic cost	Financial cost	Factor	Economic cost	Fillancial Cost	Factor	Economic cost	Financial cost	Factor	Economic cos
1.1.1 Monsoon Paddy												
(a) Area Improved (ac)												
(b) Cost before Rehabilitation (kt)												
(c) Cost after Rehabilitation (Kt)												
(d) Net Profit (Kt)												
1.1.2 Summer Paddy	2.998		2.998	0			0		0	0		
(a) Area Improved (ac) (b) Cost before Rehabilitation (kt)	179,906,400	0.99	178,107,336	0	0.99	0	0	0.99	0	0	0.99	
(c) Cost after Rehabilitation (Kt)	63,515,955	0.99	62,880,795	0	0.99	0	0		0	0		
(d) Net Profit (Kt)	116,390,445	0.55	115,226,541	159,497,888	0.55	115,226,541	159,497,888	0.55	115,226,541	159,497,888	0.55	115,226,5
1.1.3 Improvement of Trollergyi Driving	110,000,110		110,220,011	100, 101,000		110,220,011	100, 101,000		110,220,011	100, 107,000		710,220,0
(a) Monsoon Paddy Cultivation (kyat)	9,551,109	0.99	9,455,598	3,537,447	0.99	3,502,073						
(b) Summer Paddy Cultivation (kyat)	1,688,122	0.99	1,671,241	625,228	0.99	618,976						
(c) Black Gram Cultivation (kyat)	12,939,351	0.99	12,809,957	4,792,358	0.99	4,744,434						
(d) Sub-total of Trollergyi Driving (kyat)	24,178,582		23,936,796	8,955,033		8,865,483			0			
(e) Accumulation of Trollergyi (kyat)	24,178,582		23,936,796	33,133,615		32,802,279	33,133,615		32,802,279	33,133,615		32,802,2
1.2 South Nawin			7			1		1	i i			4
1.2.1 Monsoon Paddy)			
(a) Area Improved (ac)												1
(b) Cost before Rehabilitation (kt)												
(c) Cost after Rehabilitation (Kt)												
(d) Net Profit (Kt)												
1.2.2 Summer Paddy	2,245		2.245	1,464		1,464	-		0	0		
(a) Area Improved (ac)	134,729,400	0.99	2,245	87,867,000	0.99	86,988,330	0	0.99	0		0.99	
(b) Cost before Rehabilitation (kt) (c) Cost after Rehabilitation (Kt)	47,566,215	0.99	133,382,106 47,090,553	31,021,444	0.99	30,711,230	0		0	0		
	87,163,185	0.99	86,291,553	144,008,741	0.99	142,568,653	144,008,741	0.99	86,291,553	144,008,741	0.99	86,291,5
(d) Net Profit (Kt) 1.2.3 Improvement of Trollergyi Driving	67, 103, 163		00,291,333	144,000,741		142,300,033	144,000,741		00,291,333	144,000,741		00,291,3
(a) Monsoon Paddy Cultivation (kyat)	13,488,602	0.99	13,488,602	8,796,914	0.99	8,708,945	0	0.99	0			
(b) Summer Paddy Cultivation (kyat)	1,264,211	0.99	1,251,569	824,485	0.99	816,240	0		0			
(c) Black Gram Cultivation (kyat)	28,326,064	0.99	28,042,803	18,473,520	0.99	18,288,785	0		0			
(d) Sub-total of Trollergyi Driving (kyat)	43,078,877		42,782,974	28,094,919		27,813,970	0		0			
(e) Accumulation of Trollergyl (kyat)	43,078,877		42,782,974	71,173,796		70,596,944	71,173,796		70,596,944	71,173,796		70,596,9
1.3 Wegyi							7					
1.3.1 Monsoon Paddy			100									
(a) Area Improved (ac)				13,413		13,413	5,412		5,412	5,412		5,4
(b) Cost before Rehabilitation (kt)				934,966,937	0.99	925,617,268	377,267,324	0.99	373,494,651	377,267,324	0.99	373,494,6
(c) Cost after Rehabilitation (Kt)				284,135,840	0.99	281,294,482	114,651,293	0.99	113,504,780	114,651,293	0.99	113,504,7
(d) Net Profit (Kt)				650,831,097		644,322,786	913,447,128		904,312,657	913,447,128		904,312,6
1.3.2 Summer Paddy												
(a) Area Improved (ac)				773		773	5,421		5,421	1,603		1,6
(b) Cost before Rehabilitation (kt)				46,358,400	0.99	45,894,816	325,233,000	0.99	321,980,670	96,174,600	0.99	95,212,8
(c) Cost after Rehabilitation (Kt)				16,366,833	0.99	16,203,165	114,823,511	0.99	113,675,276	33,954,443	0.99	33,614,8
(d) Net Profit (Kt) 1.1.3 Improvement of Trollergyi Driving				29,991,567		29,691,651	240,401,056		237,997,045	302,621,213		299,595,0
(a) Monsoon Paddy Cultivation (kyat)				7,551,739	0.99	7,476,222	3,047,192	0.99	3,016,720	30,618,220	0.99	30,312,0
(b) Summer Paddy Cultivation (kyat)				434,996	0.99	430,646	3,051,770	0.99	3,021,252	5,878,593	0.99	5,819,8
(c) Black Gram Cultivation (kyat)				10,348,045	0.99	10,244,565	4,175,529	0.99	4,133,774	3,458,976	0.99	3,424,3
(d) Sub-total of Trollergyi Driving (kyat)				18,334,780	0.55	18,151,433	10,274,491	0.95	10,171,746	39.955.789	0.55	39.556.2
(e) Accumulation of Trollergyi (kyat)				18,334,780		18,151,433	28,609,271		28,323,179	68,565,060		67,879,4
1.4 Taung Nyo				10,004,700		10, 101,433	20,000,271	-	20,020,179	55,555,000		51,013,4
1.4.1 Monsoon Paddy	1		(1)	1	10			111	1		74	
(a) Area Improved (ac)				16,500		16,500	10,234		10,234	0		
(b) Cost before Rehabilitation (kt)				1,150,099,271	0.99	1,138,598,278	713,320,066	0.99	706,186,865	0		
(c) Cost after Rehabilitation (Kt)				349,514,416	0.99	346,019,272	216,777,501	0.99	214,609,726	0		
(d) Net Profit (Kt)				800,584,855		792,579,006	1,297,127,420		1,284,156,145	1,297,127,420		1,284,156,1
1.4.2 Summer Paddy												
(a) Area Improved (ac)				1,325		1,325	1,157		1,157	0		
(b) Cost before Rehabilitation (kt)				79,498,200	0.99	78,703,218	69,405,600	0.99	68,711,544	0		
(c) Cost after Rehabilitation (Kt)				28,066,840	0.99	27,786,172	24,503,647	0.99	24,258,611	0	0.99	
(d) Net Profit (Kt)				51,431,360		50,917,046	96,333,313		95,369,979	96,333,313		95,369,9
1.3.3 Improvement of Trollergyi Driving												
(a) Monsoon Paddy Cultivation (kyat)				9,289,365	0.99	9,196,471	5,761,494	0.99	5,703,879	0		
(b) Summer Paddy Cultivation (kyat)				745,958	0.99	738,498	651,256	0.99	644,743	0		
(c) Black Gram Cultivation (kyat)				19,507,666	0.99	19,312,589	12,099,138	0.99	11,978,147	0		
(d) Sub-total of Trollergyi Driving (kyat)			7	29,542,989		29,247,558	18,511,888		18,326,769	0		
(e) Accumulation of Trollergyi (kyat)				29,542,989		29,247,558	48,054,877		47,574,327	48,054,877		47,574,3
Sub-total of Road Improve Beneft (kt)	270,811,089		268,237,864	1,988,530,688		1,926,103,897	3,031,787,105		2,902,650,649	3,133,963,051		3,003,804,8
Total (Base Case Financial)	5 195 148 066		6,684,353,535	13 595 014 920		17,053,505,075	19 113 096 550		24,053,704,606	21 599 976 556		27,165,281,2

Benefit		2016			2017			2018			2019	
. Road Improvement	Financial cost	Conversion	Economic cost	Financial cost	Conversion	Economic cost	Financial cost	Conversion	Economic cost	Financial cost	Conversion	Economic cos
1.1 North Nawin	THE STATE OF	Factor	200monno coor	, and its account	Factor	Economic cost	, mandianos.	Factor	Economic cost	7 110110101000	Factor	Economic cos
1.1.1 Monsoon Paddy												
(a) Area Improved (ac)												
(b) Cost before Rehabilitation (kt)												
(c) Cost after Rehabilitation (Kt) (d) Net Profit (Kt)		├							+			-
1.1.2 Summer Paddy												
(a) Area Improved (ac)	2,998		2,998	0		0	0		0	0		
(b) Cost before Rehabilitation (kt)	179,906,400	0.99	178,107,336	0	0.99	0	0	0.99	0	0	0.99	
(c) Cost after Rehabilitation (Kt)	63,515,955	0.99	62,880,795	0	0.99	0	0	0.99	0	0		
(d) Net Profit (Kt)	116,390,445		115,226,541	159,497,888		115,226,541	159,497,888		115,226,541	159,497,888		115,226,54
1.1.3 Improvement of Trollergyi Driving	2.00											
(a) Monsoon Paddy Cultivation (kyat)	9,551,109	0.99	9,455,598	3,537,447	0.99	3,502,073						
(b) Summer Paddy Cultivation (kyat)	1,688,122	0,99	1,671,241	625,228	0.99	618,976						
(c) Black Gram Cultivation (kyat)	12,939,351	0.99	12,809,957	4,792,358	0.99	4,744,434						
(d) Sub-total of Trollergyl Driving (kyat)	24,178,582		23,936,796	8,955,033		8,865,483			0			
(e) Accumulation of Trollergyi (kyat)	24,178,582		23,936,796	33,133,615		32,802,279	33,133,615		32,802,279	33.133,615		32,802,27
1.2 South Nawin												
1.2.1 Monsoon Paddy												
(a) Area Improved (ac)												
(b) Cost before Rehabilitation (kt)												
(c) Cost after Rehabilitation (Kt)												
(d) Net Profit (Kt) 1.2.2 Summer Paddy												
(a) Area Improved (ac)	2,245		2,245	1,464		1,464	0		0	0		
(b) Cost before Rehabilitation (kt)	134,729,400	0.99	133,382,106	87,867,000	0.99	86,988,330	0	0.99	0	0	0.99	
(c) Cost after Rehabilitation (Kt)	47,566,215	0.99	47,090,553	31,021,444	0.99	30,711,230	0	0.99	0	0	0.99	
(d) Net Profit (Kt)	87,163,185		86,291,553	144,008,741		142,568,653	144,008,741	3838.82	86,291,553	144,008,741		86,291,55
1.2.3 Improvement of Trollergy Driving										1, 1, 1, 2 2 2		
(a) Monsoon Paddy Cultivation (kyat)	13,488,602	0.99	13,488,602	8,796,914	0.99	8,708,945	0	0.99	0			
(b) Summer Paddy Cultivation (kyat)	1,264,211	0.99	1,251,569	824,485	0.99	816,240	0	0.99	0			
(c) Black Gram Cultivation (kyat)	28,326,064	0.99	28,042,803	18,473,520	0.99	18,288,785	0	0.99	0			
(d) Sub-total of Trollergyi Driving (kyati	43,078,877		42,782,974	28,094,919		27,813,970	0		0			
(e) Accumulation of Trollergyi (kyat)	43,078,877		42,782,974	71,173,796		70,596,944	71,173,796		70,596,944	71 173,796		70,596,94
1.3 Wegy												\
1.3.1 Monsoon Paddy												
(a) Area Improved (ac)				13,413		13,413	5,412		5,412	5,412		5,412
(b) Cost before Rehabilitation (kt)				934,966,937 284,135,840	0.99	925,617,268 281,294,482	377,267,324 114,651,293	0.99	373,494,651 113,504,780	377,267,324 114,651,293	0,99	373,494,65 113,504,78
(c) Cost after Rehabilitation (Kt)				650,831,097	0.99	644,322,786	913,447,128	0.59	904,312,657	913,447,128	0.55	904,312,65
(d) Net Profit (Kt) 1.3.2 Summer Paddy				030,031,037		044,322,700	313,447,120		304,312,037	343,447,120		304,312,03
(a) Area Improved (ac)				773		773	5,421		5,421	1,603		1,60
(b) Cost before Rehabilitation (kt)				46,358,400	0.99	45,894,816	325,233,000	0.99	321,980,670	96, 174,600	0.99	95,212,85
(c) Cost after Rehabilitation (Kt)				16,366,833	0.99	16,203,165	114,823,511	0.99	113,675,276	33,954,443	0.99	33,614,899
(d) Net Profit (Kt)				29,991,567	3000	29,691,651	240,401,056		237,997,045	302,621,213		299,595,00
1 1 3 Improvement of Trollergyi Driving												
(a) Monsoon Paddy Cultivation (kyat)				7,551,739	0.99	7,476,222	3,047,192	0.99	3,016,720	30,618,220	0.99	30,312,03
(b) Summer Paddy Cultivation (kyat)				434,996	0.99	430,646	3,051,770	0.99	3,021,252	5,878,593	0.99	5,819,80
(c) Black Gram Cultivation (kyat)				10,348,045	0.99	10,244,565	4,175,529	0.99	4,133,774	3,458,976	0.99	3,424,38
(d) Sub-total of Trollergyi Driving (kyat)				18,334,780		18, 15 1, 433	10,274,491		10, 171,746	39,955,789		39,556,23
(e) Accumulation of Trollergyi (kyat)				18,334,780		18, 151,433	28,609,271		28,323,179	68,565,060		67,879,41
1.4 Taung Nyo												
1.4.1 Monsoon Paddy				40			4 87		***			Y.
(a) A rea Improved (ac)				16,500	1477001	16,500	10,234		10,234	0		
(b) Cost before Rehabilitation (kt)				1,150,099,271	0.99	1, 138,598,278	713,320,066 216,777,501	0.99	706, 186, 865	0		
(c) Cost after Rehabilitation (Kt)				349,514,416 800,584,855	0.99	346,019,272 792,579,006	1,297,127,420	0,99	214,609,726 1,284,156,145	1,297,127,420		1,284, 156, 14
(d) Net Profit (Kt)				600,564,655		(92,379,006	1,201,121,420		1,204, 100, 145	1,201,121,420		1,204, 100, 14
1.4.2 Summer Paddy (a) Area Improved (ac)				1,325		1,325	1,157		1,157	0		
(b) Cost before Rehabilitation (kt)				79,498,200	0.99	78,703,218	69,405,600	0.99	68,711,544	0	0,99	
(c) Cost after Rehabilitation (Kt)				28,066,840	0.99	27,786,172	24,503,647	0.99	24,258,611	0	0.99	
(d) Net Profit (Kt)				51,431,360		50,917,046	96,333,313		95,369,979	96,333,313		95,369,97
1.3.3 Improvement of Trollergyi Driving							,,0,10					
(a) Monsoon Paddy Cultivation (kyat)				9,289,365	0.99	9,196,471	5,761,494	0.99	5,703,879	0		
(b) Summer Paddy Cultivation (kyat)				745,958	0.99	738,498	651,256	0.99	644,743	0		
(c) Black Gram Cultivation (kyat)				19,507,666	0.99	19,312,589	12,099,138	0.99	11,978,147	0		
(d) Sub-total of Trollergyi Driving (kyat)				29,542,989		29,247,558	18,511,888		18,326,769	0		
(e) Accumulation of Trollergyi (kyat)				29,542,989		29,247,558	48,054,877		47,574,327	48,054,877		47,574,32
Sub-total of Road Improve Beneft (kt)	270,811,089		268,237,864	1,988,530,688		1,926,103,897	3,031,787,105		2,902,650,649	3,133,963,051		3,003,804,83
	5 195 148 066		6.684.353.535	13.595.014.920		17.053.505.075	19.113.096.550		24.053.704.606	21.599.976.556	_	27.165,281,24

Table 3.1.14 Financial Cost and Benefit Analyses (Base2)

					i illaliciai cost	FIRR =	15.9%		B/C =	1.26	
				Benefit	Benefit -Cost	Present	Presen	t Value	Present	Present	Value
Year		Cost (kyat)		(kyat)	(kyat)	Value Factor	Discout Rate	15.9%	Value	Discout Rate	12.0%
	Investment	O & M	Total	Total			Cost	Benefit		Cost	Benefit
1	23,616,120,000		23,616,120,000	0	-23,616,120,000	0.86281	20,376,224,497	0	0.89286	21,085,888,903	(
2	28,466,262,000	63,150,000	28,529,412,000	5,195,148,066	-23,334,263,934	0.74445	21,238,720,763	3,867,527,978	0.79719	22,743,361,952	4,141,520,087
3	44,227,943,000	141,068,061	44,369,011,061	13,595,014,920	-30,773,996,141	0.64232	28,499,103,185	8,732,349,983	0.71178	31,580,974,693	9,676,659,720
4	30,712,856,000	256,819,872	30,969,675,872	19,113,096,550	-11,856,579,322	0.55420	17,163,394,368	10,592,478,108	0.63552	19,681,848,410	12,146,755,119
5	23,750,285,000	337,314,933	24,087,599,933	21,599,976,556	-2,487,623,377	0.47817	11,517,967,660	10,328,460,790	0.56743	13,668,026,830	12,256,474,69
6	-7,320,111,000	337,314,933	-6,982,796,067	21,599,976,556	28,582,772,623	0.41257	-2,880,892,173	8,911,502,328	0.50663	-3,537,693,971	10,943,196,12
7		337,314,933	337,314,933	21,599,976,556	21,262,661,623	0.35597	120,073,997	7,688,943,655	0.45235	152,584,410	9,770,749,39
8		337,314,933	337,314,933	21,599,976,556	21,262,661,623	0.30714	103,602,909	6,634,216,799	0.40388	136,234,755	8,723,798,53
9		337,314,933	337,314,933	21,599,976,556	21,262,661,623	0.26500	89,388,457	5,723,993,787	0.36061	121,639,138	7,789,167,54
10		337,314,933	337,314,933	21,599,976,556	21,262,661,623	0.22865	77,127,059	4,938,834,640	0.32197	108,605,289	6,954,544,45
11		337,314,933	337,314,933	21,599,976,556	21,262,661,623	0.19728	66,545,490	4,261,243,375	0.28748	96,971,297	6,209,561,26
12		337,314,933	337,314,933	21,599,976,556	21,262,661,623	0.17022	57,417,748	3,676,748,009	0.25668	86,581,997	5,544,281,98
13		337,314,933	337,314,933	21,599,976,556	21,262,661,623	0.14686	49,538,071	3,172,172,557	0.22917	77,302,463	4,950,066,62
14		337,314,933	337,314,933	21,599,976,556	21,262,661,623	0.12672	42,744,548	2,737,149,029	0.20462	69,021,382	4,419,787,20
15		337,314,933	337,314,933	21,599,976,556	21,262,661,623	0.10933	36,878,642	2,361,525,437	0.18270	61,627,438	3,946,315,71
16		337,314,933	337,314,933	21,599,976,556	21,262,661,623	0.09433	31,818,918	2,037,525,789	0.16312	55,022,812	3,523,388,170
17		337,314,933	337,314,933	21,599,976,556	21,262,661,623	0.08139	27,454,062	1,758,022,092	0.14564	49,126,547	3,145,820,58
18		337,314,933	337,314,933	21,599,976,556	21,262,661,623	0.07023	23,689,628	1,516,966,354	0.13004	43,864,434	2,808,860,95
19		337,314,933	337,314,933	21,599,976,556	21,262,661,623	0.06059	20,437,912	1,308,742,580	0.11611	39,165,637	2,507,973,27
20		337,314,933	337,314,933	21,599,976,556	21,262,661,623	0.05228	17,634,825	1,129,246,774	0.10367	34,969,439	2,239,269,57
21		337,314,933	337,314,933	21,599,976,556	21,262,661,623	0.04511	15,216,277	974,374,942	0.09256	31,221,870	1,999,293,83
22		337,314,933	337,314,933	21,599,976,556	21,262,661,623	0.03892	13,128,297	840,671,088	0.08264	27,875,706	1,785,022,06
23		337,314,933	337,314,933	21,599,976,556	21,262,661,623	0.03358	11,327,035	725,327,213	0.07379	24,890,469	1,593,862,27
24		337,314,933	337,314,933	21,599,976,556	21,262,661,623	0.02897	9,772,014	625,751,321	0.06588	22,222,308	1,423,006,450
25		337,314,933	337,314,933	21,599,976,556	21,262,661,623	0.02500	8,432,873	539,999,414	0.05882	19,840,864	1,270,510,62
26		337,314,933	337,314,933	21,599,976,556	21,262,661,623	0.02157	7,275,883	465,911,494	0.05252	17,715,780	1,134,430,76
27		337,314,933	337,314,933	21,599,976,556	21,262,661,623	0.01861	6,277,431	401,975,564	0.04689	15,816,697	1,012,822,90
28		337,314,933	337,314,933	21,599,976,556	21,262,661,623	0.01606	5,417,278	346,895,623	0.04187	14,123,376	904,391,01
29		337,314,933	337,314,933	21,599,976,556	21,262,661,623	0.01385	4,671,812	299,159,675	0.03738	12,608,832	807,407,12
30		337,314,933	337,314,933	21,599,976,556	21,262,661,623	0.01195	4,030,913	258,119,720	0.03338	11,259,572	721,007,21
Total	143,453,355,000	9,231,226,191	152,684,581,191		446,818,068,801		96,764,420,379	96,855,836,118		106,552,699,329	134,349,945,28
							NPV =	91,415,739		NPV =	27,797,245,96

Table 3.1.15 Economic Cost and Benefit Analyses (Base2)

				Table Cities	Loononno oo	ot and Bonor	it / ii lui jood \D	40027			
						EIRR =	22.9%		B/C =	1.72	
Year		Cost (kyat)		Benefit	Benefit -Cost	Present Value	Presen	t Value	Present	Presen	t Value
i eai		Cost (Kyat)		(kyat)	(ky at)	Factor	Discout Rate	22.9%	Value Factor	Discout Rate	12.0%
	Investment	O & M	Total	Total			Cost	Benefit		Cost	Benefit
1	21,924,003,000		21,924,003,000	0	-21,924,003,000	0.813669650	17,838,895,848	-	0.892857143	19,575,002,679	0
2	23,858,119,000	58,735,887	23,916,854,887	6,684,353,535	-17,232,501,352	0.6620583	15,834,352,277	4,425,431,735	0.797193878	19,066,370,286	5,328,725,713
3	41,531,145,000	123,700,701	41,654,845,701	17,053,505,075	-24,601,340,626	0.538696745	22,439,329,790	9,186,667,674	0.711780248	29,649,096,396	12,138,348,068
4	29,600,465,000	232,416,621	29,832,881,621	24,053,704,606	-5,779,177,015	0.438321192	13,076,384,232	10,543,248,474	0.635518078	18,959,335,601	15,286,564,130
5	22,759,543,000	310,009,029	23,069,552,029	27,165,281,249	4,095,729,220	0.356648651	8,227,724,608	9,688,460,909	0.567426856	13,090,283,371	15,414,310,124
6	-7,246,910,000	310,009,029	-6,936,900,971	27,165,281,249	34,102,182,220	0.290194183	(2,013,048,310)	7,883,206,598	0.506631121	-3,514,449,916	13,762,776,896
7		310,009,029	310,009,029	27,165,281,249	26,855,272,220	0.236122199	73,200,014	6,414,325,955	0.452349215	140,232,341	12,288,193,657
8		310,009,029	310,009,029	27,165,281,249	26,855,272,220	0.192125467	59,560,630	5,219,142,355	0.403883228	125,207,447	10,971,601,480
9		310,009,029	310,009,029	27,165,281,249	26,855,272,220	0.156326662	48,462,677	4,246,657,734	0.360610025	111,792,364	9,796,072,750
10		310,009,029	310,009,029	27,165,281,249	26,855,272,220	0.12719826	39,432,609	3,455,376,513	0.321973237	99,814,610	8,746,493,527
11		310,009,029	310,009,029	27,165,281,249	26,855,272,220	0.103497364	32,085,117	2,811,534,998	0.287476104	89,120,188	7,809,369,220
12		310,009,029	310,009,029	27,165,281,249	26,855,272,220	0.084212664	26,106,686	2,287,660,698	0.256675093	79,571,596	6,972,651,089
13		310,009,029	310,009,029	27,165,281,249	26,855,272,220	0.068521289	21,242,218	1,861,400,080	0.22917419	71,046,068	6,225,581,330
14		310,009,029	310,009,029	27,165,281,249	26,855,272,220	0.055753693	17,284,148	1,514,564,752	0.204619813	63,433,989	5,558,554,759
15		310,009,029	310,009,029	27,165,281,249	26,855,272,220	0.045365088	14,063,587	1,232,355,372	0.182696261	56,637,491	4,962,995,320
16		310,009,029	310,009,029	27,165,281,249	26,855,272,220	0.036912195	11,443,114	1,002,730,164	0.163121662	50,569,188	4,431,245,822
17		310,009,029	310,009,029	27,165,281,249	26,855,272,220	0.030034333	9,310,914	815,891,102	0.145644341	45,151,061	3,956,469,484
18		310,009,029	310,009,029	27,165,281,249	26,855,272,220	0.024438025	7,576,008	663,865,827	0.13003959	40,313,447	3,532,562,039
19		310,009,029	310,009,029	27,165,281,249	26,855,272,220	0.019884479	6,164,368	540, 167, 475	0.116106777	35,994,149	3,154,073,249
20		310,009,029	310,009,029	27,165,281,249	26,855,272,220	0.016179397	5,015,759	439,517,881	0.10366677	32,137,635	2,816,136,963
21		310,009,029	310,009,029	27,165,281,249	26,855,272,220	0.013164685	4,081,171	357,622,360	0.09255961	28,694,315	2,514,407,838
22		310,009,029	310,009,029	27,165,281,249	26,855,272,220	0.010711704	3,320,725	290,986,461	0.08264251	25,619,924	2,245,007,027
23		310,009,029	310,009,029	27,165,281,249	26,855,272,220	0.008715789	2,701,973	236,766,852	0.07378796	22,874,934	2,004,470,686
24		310,009,029	310,009,029	27,165,281,249	26,855,272,220	0.007091773	2,198,514	192,650,001	0.06588210	20,424,046	1,789,705,776
25		310,009,029	310,009,029	27,165,281,249	26,855,272,220	0.00577036	1,788,864	156,753,459	0.05882331	18,235,757	1,597,951,760
26		310,009,029	310,009,029	27,165,281,249	26,855,272,220	0.004695167	1,455,544	127,545,532	0.05252081	16,281,925	1,426,742,575
27		310,009,029	310,009,029	27,165,281,249	26,855,272,220	0.003820315	1,184,332	103,779,929	0.04689358	14,537,433	1,273,877,289
28		310,009,029	310,009,029	27,165,281,249	26,855,272,220	0.003108474	963,655	84,442,578	0.04186927	12,979,852	1,137,390,495
29		310,009,029	310,009,029	27,165,281,249	26,855,272,220	0.002529271	784,097	68,708,363	0.03738327	11,589,151	1,015,527,044
30		310,009,029	310,009,029	27,165,281,249	26,855,272,220	0.002057991	637,996	55,905,910	0.03337792	10,347,457	906,720,584
Total	132,426,365,000	8,475,087,963	140,901,452,963	747,404,522,155	613,187,422,727	4	75,793,703,165	75,907,367,741		98,048,244,785	169,064,526,694
							NPV =	113,664,576		NPV =	71,016,281,909

Table 3.1.16 Estimated Cost on Equipment Procurement

					-	Unit Price								ference)	
lo,	Equipment Name	Functions	Specifications	Basic Price	Spare Parts	Packing & Transport	Installation - Management	CIF Unit Price	Q'ty		Amount	Standard Economic	Remaining Value	Remaining Economic	Remaining Value
				(000JPY)	('000JPY')	3=(*10% ('000JPY)	('000JPY)	\$=(1)~4) ('0003PY)	š		(000JPY)	Life (year)	as Scrap (%)	Value (000JPY)	as Scrap (pnce)
1	Hydraulic Excavator, Standard	general earth works for rehabitation of dikes and roads	crawler type, Tier-2, 0.8m3, 122kW, long boom hybrid type, w/ crane attachment, dozer	17,500	1,750	1,750	875	21,875	11	ınits	240,625	9.0	14	152,172	33,6
2	Hydraulic Excavator, Long Arm	earth works for dredge and rehabilitation of main canals	crawler type, super long arm, Tier-2, 0.4m3, 130kW, w/ slope bucket	17,200	1,720	1,720	860	21,500	24 (ınits	516,000	9.0	14	323,475	72,
3	Hydraulic Excavator, Mini Size	earth works for rehabilitation of distributary canals	rubber crawler type, Tier-2, 0.08m3, 18kW	3,450	345	345	173	4,313	26 1	ınits	112,138	9,0	14	70,250	15,
4	Hydraulic Breaker	concrete braking works for rehabilitation of existing roads	attachment to excavator, 1300kg class	5,330	-	533	267	6,130	2 1	ınits	12,260	7,0	7	7,987	
5	Track Dozer (Buldozer)	general earth works for rehabilitation of dikes and roads	11t class, 100kW output, Tier-2	12,400	1,240	1,240	620	15,500	10 1	ınıts	155,000	12,5	.9	105,276	13,
6	Whee Loader	general earth works for rehabilitation of dikes and roads	standard type, Tier-2, standard bucket capacity 0.9-1.0m3, 55kW	6,180	618	618	309	7,725	3 1	ınits	23,175	12,0	11	16,130	2,
7	Earth Work Vibration Roller	compacting works for roads on dikes	steering type, single drum roler, Tier-2, 11-12ton, 103kW	14,100	1,410	1,410	705	17,625	5	inits	88,125	13,0	10	61,064	8,8
8	Hand-guide Vibration Roller	compaction of sols for medium-scale works on canal dikes	120(front)-130(rear)kgf/cm in dynamic pressure, φ355x575, 55Hz, 4.6kW, diesel engine	1,840	184	184	92	2,300	5	ınits	11,500	6,0	9	6,299	1,0
9	Vibrating Plate Compactor	compaction of sols for small-scale works on canal dikes	15KN, 500mmx525mm, 3.5kW, desellengine	607	61	61	30	759	24 (ınıts	18,216	6,0	7	9,754	1,2
10	Titing Drum Concrete Mixer	concrete works of canal linng and road pavement	desel engine drive, 0.5m3 wet capacity, 7.5kW, pneumatic tres, w/ mixing materials charging device, water measuring tank, pump & pxpe	8,580	858	858	429	10,725	26 :	ets	2 78,850	9,5	9	1 76,888	25,0
11	Concrete Mixer Truck	construction of concrete canals and concrete roads	mixer capacity 1,6-1,7m3, 138kW	4,340	434	434	217	5,425	13	inits	70,525	10,5	9	46,064	6,
	Concrete Pump Truck	construction of concrete canals and concrete roads	Boom type (15m boom), 30m3/hr, 103kW, w/mxer hopper	10,800	1,080	1,080	540	13,500	5 (67,500	9,5	9	43,604	6,
	Sem⊩Trailer Truck Dump Truck	transport of heavy machineries transport of soils	maximum bading capacity 25t, 235kW	15,600	1,560	1,560	780	19,500	5 1		97,500	12.0	. 8	66,248	7,
	Truck with Crane	transport or sols transport and hoist of light machineries and concrete panels	maximum bading capacity 4t, 135kW maximum bading capacity 6t, crane capacity 2.9t, 132kW	4,300 7,980	430 798	430 798	215 399	5,375 9,975	14 1	-	75,250 39,900	11.0	12	49,771 27,159	9,0
16	Water Bowser	transport of water	5.5~6.5kl 132kW	7,700	770	770	385	9,625	4 1	units	38,500	11.0	7	25,739	2,8
17	High Cycle Internal Concrete Vibrator and Frequency & Voltage Converter	compaction of concrete by removing air bubble in structures	frequency & voltage converter (input 230V, output 48V 200Hz), 3 extension codes (15m, 2,0mm2) and 3 inner headers (φ32mm rod, 6m)	838	84	84	42	1,048	15	units	15,720	5.0	7	7,601	1,1
18	Engine Pump	dranage of large amount of mud water for temporary works	1m3/min at 10m total head, nominal diameter 100mm, maximum total head 24m, diesel engine 6.3kW	4,485	449	449	224	5,607	5 (ınıts	28,035	8,5	7	17,462	1,5
19	Submersible Sand Pump	dramage of small amount of mud water for temporary works	φ50mm, 2 poles, 0.8kW, single phase 230V/50Hz	200	20	20	10	250	20 (ınıts	5,000	10,5	7	3,252	3
20	Mobile Workshop	support of daily maintenance and repair of machineries and vehicles at sites	147kW, w/ hydrauk: crane, engine generator/wekler, oxygen-acetylene gas welder/cutter, ar compressor, mechanic tools, electrical tools, lubricating tools, desellengine service kt	18,700	1,870	1,870	935	23,375	2 :	iets	46,750	12.0	7	32,476	3,2
21	Workshop Equipment	support of daily maintenance and repair of machineries and vehicles at Construction No.2 Workshop in Pyay	electrical air compressor, portable hydraulic press, hydraulic pressure meter, portable drill, mechanic tool set, etc.	5,000	-	500	250	5,750	1 -	iet	5,750	5.0		3,000	
22	Soil Mechanics and Concrete Testing Apparatus	Testing on civil construction materials by Irrigation Technology Centre (ITC) Pyay Laboratory	sol mechanics testing, concrete testing and others	15,000	-	1,500	750	17,250	1 :	et	17,250	2,0	9	(-)	
	4-Whee Tractor	leveling works of plot farms and traction of concrete mixers	37.5kW, w/ dozer, disc plow and rotary	3,000	300	300	150	3,750	4 (ınits	15,000	7.0	+	8,571	
24	Combine Harvester	mechanization in model farms	52.2kW, w/ grain tank, tractor-driven trailer	4,000	400	400	200	5,000	2 (inits	10,000	7,0	-	5,714	
25	Diese Engine Generator, Small	power supply to submersible sand pump and inverter of high cycle internal concrete vibrator	rated output 2.7KVA, 3.4kW, single phase 230V/50Hz	342	34	34	17	427	15	ınits	6,405	10.0	6	4,125	3
26	Diesel Engine Generator, Large	gate operation for the Diversion Dam of South Nawn	rated output 125KVA, 134kW, Tier-2, three phase 400V/50Hz	6,220	622	622	311	7,775	1	inits	7,775	10.0	6	5,349	
									Tota		2,002,749			1,275,430 (a)	217,4 (b)

Table 3.1.17 Project Cost Estimation (Financial / Economic) -Base 3 (Extension Service	Table 3.1.17	Project Cost Estimation	(Financial / Economic	:) -Base 3 (Extension Service)
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			2014	年			2/154				2016	÷			2017				2018	年	
		Financ	cia	Conver on		Financia		Conversion	1	Enar	nat	Conseinson		Financial		Conversion	-	Finanç	ijit.	Conversion	
		PC	TC	Factor	Economic	FC.	LC.	Factor	Economic	FC	Lic .	Factor	Economic	RC .	1C	Factor	Economic	FC	100	Factor	Ecolomic
North Na	wer	5670,592		100	5,670.592	2051 825		1.00	2257825	92%,100		100	925(10)		1		31				
	Total	3	6(356.6)*		5,107,801		1,997,599		1.695,906		867777		744,482	- 3	3		- 3			-	
tc.	Material		1,292,000	1095	1,279 080	1.5	Tt 346	/0.99	767,633		966.330	1/99	964, 133			10				-	
40.	Skalled Labor	-	7016532	196			467,875	± 00	=61,578		100,319	100	200 339		- 8					-	
	Unskilled Labor	1	3014 141	Æ	1,303,845		698,375	9.60	418,995		799.(n)	0.60	± 9,408	4		- 4	1			-	
South Na	IWIN	1,597,303		:±00	1,191,201	4,309,837		3.00	4,309.837	+,569,361		1.00	1,569 261							-	
	To(a)	19	1,546,430		1,295.830		7.417,566		2.986,155		3,830,131		3,385,130		2	-	3		-	-	0
LC	Material	-	P\$10,256	0.99	508353		1,507,178	0.99	1.581,503		1/82242	0.99	1,744,620			2)				-	
20	Skilled Labor		-114.451	(00	314,391		741.14	100	141,047		640.664	(.000	84 (, 69)		-	-				-	
	Unstalled Labor		613,643	0.80	571,188		1.06,041	(160	662,625		£,268,197	0.80	60 9 18				-			-	
Wegy										9.945,782		100	9,94~ 784	3.589, 560	1	1,00	3,189,169	7,200,102		100	749
	Total								- V		3,576,719		7,245,691		6,387.554		5,684,599		5,387,825		4,53
	Material	- 1							1		3351,240	(199	9,119,728		5,601 (6)	0.99	3.567,428		2988006	0.99	2918
LC	Skilled Labor										1116589	1.00	3.176,639		T317:09)	1.00	1,117,091		920,351	100	980
	Unskilled Labor								-		7/248/790	'060	1949/274		667 500	0.60	1,000,380		1,467,963	040	877
Yaung N	vo.	Î								3.855.400		170	4855 400	3.886.766	1	100	307 THE	3.722676		100	(8.732
2000	Total									1000	3,517.821	-	1, 164 1679		J-531-506	-	4/269.84		2781,745		2537
	Material										200000	0.99	2078.35	-	3 NSE VIII)	(199.	(83107		1389169	696	217
LC	Skilled Labor										0.0099	100	973,099		17,367	1.00	378.165		1816+	100	1000
	instilled Labor										855,312	(180	*13.223		584.625	(160)	3,8655		80.42	080	
Sub Total(F	200	7,362,791	f.stalogr		13,864,415	6.567.663	5,387,115		11,204,343	70.399.645	(6352442)	-	34.808.729	14,436,471	10.919.360		21.438,223	11171348	E 169.580		18,482
- 13		- 500 (50)		100	- P Youles			546		- 10000									- 4		
Machine Procuren		+ 9) 4 204	-	1.00	5 9(4 304	8571,306	200.000	17.00	8,871,306						- 1	-	- 1				
		-	-0	99			147-255	4199	146,377					-			-			-	
Engreening	Service																				
Engineering Ser	nate (EE)					_,838,040		1.00	2,838,040				10		-		8				
		1					739,871	0.99	722,526						1				4		
Engineering Ser	Nice (SV)					1 (42)140		1.00	1,142,140	1092.00		100	1,142,140	1,342 (40)		1000	1,142,120	(142,146		100	1,142
							393,760	1/99	290,773		\$93,71U	9.98	790,773		293,710	199	280,773		393/10	899	36,
Total		17 116 998	7873-057		19,578.639	(4/16)48	6,953,504		2164979	21,43 - 185	(7146.) 52		6,18 641	136 8,6 7	11,2)1,0%		25,864,136	1271 (988	1,-6+290		19915
hysical Contingency	1.5%	653.550	393,652		978.931	970,997,400	527,675,300		082 746 950	1.071.889.250	85131/1600	-	18/1/9/2000	80 970 840	160 614		1,293.207	615699 #00	423 164 NOO		9957787
roject Management		-	1000			700.00		-			-	- 4					-		-		
(FC+LC)	71)42	T6,279	757,504	,	1,365,441	656,766,300	538,211 500		1,120,434 300	2,//29 ±64,300	±685.2 ₩ 200		3 -80,572 '00	64 00	1,191,936		3.449.122	1,117,484800	8 (6,958 000		848.239
Sub-Tota		14,962,127	9,053,993		21,924,008	C[,040,67] 900	1,419,396,700		23.818,120	24,419,219	19.636,704		41,517,149	17847 95 550	12 86 5 660		29,000,465	J+ 046 8 *2 200	9, 103 4 (2 400)		22,719
and Total(FC+LC)			13,616,120				33 166,362				14,227,943				30 117 856				73, 750 28+		
O&M	6/3%					39,593	37,519		56735.887	97,788,436	42,279,523		133,7000794	162-101 '93	94,718,979		752+16621	36,9516-4	128,3= 289		319,009
Techni al Cod						996,375		1.00	996 .74	1,347,900		100	(,347,96)	1,172,068		1:00	1,172,088	1,230,490		100	1 230
Agniculture Ex	ktension)						¥29,383	0.99	425 069		830,936	0.99	535,121		305.157	0.99	500 1/05		530,414	6.99	525
					-		39,891,930		25,279,481		46130 73		43,252,167		26511.391		31,272648		263(139)		2314

Table 3.1.18 Project Cost and Benefit Estimation -Base 3 (Extension Service)

Particu ars		FC/LC	Total	Ratio %	2014	2015	2016	2017	2018	2019	2020	Remarks
mp em entation			100-0	11-33 1.39				2011	20 (0			-2.00-111.300.00
Civil & Structure Construction												
1 1 North Nawin		FC	8 853 517 000	49	5 670 592 000	2 257 825 000	925 100 000					
		LC	9 131 937 000	51	6 326 617 000	1 937 549 000	867 771 000					
		(unskilled labors)	4 0 12 0 79 0 0 0	44	3 0 14 74 1 0 0 0	698,325,000	299,013,000					
		Sub Total (FC+LC)	17,985,454,000	100	11,997,209,000	4 195 374 000	1,792,871 000	0				
1.2 South Nawin		FC	10 471 300 000	54	1,592,202,000	4 309 837 000	4.569.261 000					
		LC	8 871 117 000	46	1.546,420 000	3 444 566 000	3.880,131 000					
		unskilled labors)	2 992 881 000	34	618,643,000	1,106,041,000	1.268,197 000					
		Sub Total (FC+LC)	19,342,417,000	100	3,138,622,000	7 754 403 000	8,449,392 000	0				
1 3 Wegyi		FC	25 984 725 000	56			9 945 784 000	8 589 769 000	7 449 172 000			
		LC	20 352 398 000	44			8 576 7 19 000	6 387 854 000	5 387.825 000			
		(unskilled labors)	6 379 155 000	31			3.248,790 000	1 667 300 000	1 463 065 000			
		Sub Total (FC+LC)	46,337,123,000	100			18 522 503 000	14,977 623 000	12 836 997 000			
14 Taung Nyo		FC	14 464 884 000	57			4.855 500 000	5 886 708 000	3 722 676 000			
		LC	10,841 082 000	43			3 527.821 000	4 531 506 000	2 781 755 000			
		(unskilled labors)	2 348 591 000	22			855,372 000	928 794 000	564 425 000			
		Sub Total (FC+LC)	25 305 966 000	100			8,383,321,000	10 418,214 000	6 504 431 000			
Total of Civil & Structure Construction		FC	59 774 426 000	55	7,262,794 000	6 567 662 000						
		LC	49,196,534,000	45	7,873,037,000	5 382 115 000	16 852 442 000		8 169 580 000			
		(unskilled labors)	15,732,706,000	32	3,633,384,000	1 804 366 000	5,671,372 000		2,027,490,000			
		Total (FC+LC)	108 970 960 000	100	15.135,831.000	11,949,777,000	37,148,087,000	25.395 837 000	19 341 428 000			
2 Machineries Procurement		FC	14,785,510,000	99	5,914,204,000	8 871 306 ,000						
		LC	147 855 100	-51	14	147.855,100						
		Total (FC+LC)	14,933,365,100	100	5 9 14 204 000	9 0 19 161 100	0	0				
5 Engineering Service			0									
5.1 Engineering Service (DD)		FC	2 838 040 000	80		2 838 040 000						
n ''		+C	729 824 000	20		729 824 000						
		Total (FC+LC)	3 567 864 000	100		3 567 864 000	0	0				
5.2 Engineering Service (SV)		FC	4 326 290 000	80		1 142 140 000	1 142 140 000	1 142 140 000	899.870.000			
3 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7		LC	1,112,540,000	20		293 710 000	293,710 000	293 710 000	231,410,000			
		Total (FC+LC)	5 438 830 000	100		1.435.850.000	1,435,850,000	1,435 850,000	1 131 280 000			
		647					11 11 11					
1.1 Total of 1, 2, 5 (FC)		FC	81,724,266,000	61	13,176,998,000	19 419 148 000	21,437,785,000	15,618,617,000	12.071.718.000			
1.2 Total of 1.2.5 (LC)		LC	51,186,753,100	39	7,873,037,000	6 553 504 100	17,146,152,000					
			33 151 550				- 10 00	21. 17. 25.				
1.3 Total of 1.2.5 (Unskilled Labors)		(unskilled labors)	15,732,706,000	31	3,633,384,000	1,804,366,000	5,671,372,000	17 17 18	2,027,490,000			
1.4 Total of 1.2.5 (Grand Total)		Total (FC+LC)	132,911,019,100	100	21,050,035,000	25,972,652,100	38,583,937,000	26,831 687 000	20,472,708,000			
U2 1902 1903	0											
2.1 Physical Contingency (5% of 1.1)	5%	FC	4 086 213 300	61	658,849,900	970,957,400	1,071,889,250	780 930 850	603,585,900			
2.2 Physical Contingency (5% of 1.2)	5%	LC	2,559,337,655	39	393,651,850	327,675,205	857,307,600	560 653 500	420,049,500			
2.3 Physical Contingency (5% of 1.3)	5%	(unskilled labors)	786,635 300	31	181,669,200	90,218,300	283,568,600	129 804 700	101,374,500			
2.4 Physical Contingency (5% of 1.4)	5%	Total (FC+LC)	6 645 550 955	100	1.052.501.750	1 298 632 605	1.929.196 850	1,341 584 350	1 023 635 400			
3 1 Total of 1 1 & 2 1		FC	85,810,479,300	61	13,835,847,900	20,390,105,400						
3.2 Total of 1 1 & 2 2		LC	53,746,090,755	39	8,266,688,850	6 881 179 305		11,773 723 500				
3 3 Total of 1 1 & 2 3		(unskilled labors)	16,519,341,300	31	3,815,053,200	1 894 584 300	5 954 940 600		2 128 864 500			
3 4 Total of 1 1 & 2 4		Total (FC+LC)	139 556 570 055	100	22 102 536 750	27 271,284,705	40 513 133 850	28,173,271,350	21 496 343 400			
					31 - 12		- 200					
4 Project Management (10 % of 1)	10%	LC	10,897,096,000	100	1,513,583,100	1,194,977,700	3,714,808 700		1 934 142 800			
5 Others (Miscellaneous, 5% of 1-2)	5%	LC	5 744 258,200	100	1,052 501 750	597 488 850	1857,404 350	1 269 791 850	967 071 400			
41-0 - 42												
6 TG and Total Cost for Project Evaluation		FC	85,810,479,300	55	13,835,847,900	20 390 105 400	22,509,674,250		12,675,303,900			
6.2 Grand Total Cost for Project Evaluation		LC	70,387,444,955	45	10,832,773,700	8 673 645 855	23,575,672,650					
6.3 Grand Total Cost for Project Evaluation		Total (FC+LC)	156,197,924,255	100	24,668,621,600	29,063,751,255	46,085,346,900	31,982 646 900	24,397,557,600			
	5,0					-10		441-147-14		Consultation .		- September 1971
7 Operation and Maintenance	0 30%	LC				63 150 105	126 056 919	237,501,180	313 688 691	371,712,975		371.712.975

e fit		1					
riculture Production North Nawin		1					
1.1 Black Gram							
(a) Increase of Sawn Area (ac) (b) Gross Profit (kt/ac)	10,192 1 328.00		328.000	328 000			
(d) Family Labor (kVac)	328.00 37.08 28.25	328,000 37,086 28,258	37,086 28,258	37 086 28 258			
(d) FamilyLabor (=Vac)	28,25	28,258	28,258	28 258			
(e) Hired Labor (kWac) (f) Unit Net Profit (kWac)	26.25 36.53 226,12	39.441 1 223.215	39,441 223,215	37 188 225 468			
(n) Net Profit (kt)			223,215	0			
(h) Accumurated Net Profit (kt)	2 304,661 41	5,692,712,431	5 692 712 431	5 692 712 431	5 692 712 431	5.692,712,431	
South Nawin 2.1 Black Gram		-					
(a) Increase of Sawn Area (ac)	17,608 6	22,141 91	18,705 22	0.00	0.00		
(b) Gross Profit (kt/ac)	250 16 38 68 26 17	7 250 167 4 38,684 3 26 176	250 167 38 684 26 176	250 167 38 684 26 176			
(c) Input Cost (kVac) (d) Family Labor (kVac)	38 68	38,684	38 684	38.684			
(e) Hired Labor (kVac)	36.53	36 535	36.535		-		
(f) Unit Net Profit (gVac)	36,53 148,77	148,772	148 //2	148,772			
(g) Net Profit (kt) (h) Accumulated Net Profit (kt)	2,619,675 56 2,619,675 56	3 294 096 235 5 913 771 801	2,782,812,990 8,696,584,791	8,696,584 791	8,696,584,791	8.696.584.791	
n) Accumulated Net Profit (KI)	2 619,675 56	5 913 771.801	8,696,584,791	8,696,584 791	8,696,584,791	8,696,584,791	
Wegyi 3 1 Black Gram							
(b) Gross Profit (Kt/ac)			2,268 72 250,167 38,684	0 00	433 17		
(b) Gross Profit (R/vac)			250,167	328,000 37,086	153,494 15,476		
c) Input Cost (kVac) (d) Family Labor (kVac)		1	26 176	28 258 39 441	26.644		
e) Hired Labor (kVac) f) Unit Net Profit (kVac)			26 176 36 535 148 772 337 522 012	39 441	26,644 37 188 74 186 32 135,150		1
N Unit Net Profit (kVac)			148 772	223 215	74 186		
g) Net Profit (Kt) h) Accumulated Net Profit (kt)		1	337,522,012 337,522,012	337,522,012	32,135,150 369,657,162	369,657,162	
Taving 11/5 4 1 Black Gram (a) Increase of Bawn Area (ac) (b) Gross Profit (Mac) (b) Gross Profit (Mac)			007,322,012	007,322,012	555,657,162	505,057,102	-
4 1 Black Gram							
a) increase of mawin Area (ac)		+	9,104.47 250,167	10,683 44	10,926.80 153,494		
c) Input Cost (KVac)		1	250,167	328,000 37,086	153,494		
(c)Input Cost (kVac) (d) Family Labor (kVac)			38,684 26,176 36,535	37 086 28 258	15,476 26,644 37,188		
e) Hired Labor (kVac) (f) Unit Net Profit (kVac)			36 535	39 441	37,188		
(f) Unit Net Profit (kVac) (g) Net Profit (Kt)		+	1354 490 211	2 384 704 060	74,186		
(g) Net Profit (kt) (h) Accumulated Net Profit (kt) (h) Accumulated Net Profit (kt) sad Improvement From Flowin		11 606 484,232	1354 490 211	3.739.194.271	4.549.809.856	4 549 809 856	
Sub Total of Crop Benefit (kt)	4,924,336,977	11 606 484,232	16,081 309 445	18,466,013,505	19 308 764 240	19 308 764,240	ri L
pad improvement		1	-				
1.1 Monsoon Paddy for threshing		+	1	-	-		
1.1 Monsoon Paddyfor threshing a) Area improved (ac) b) Cost before Rehabilitation (kt)		0	0	0	0		
b) Cost before Rehabilitation (kt) c) Cost after Rehabilitation (kt)		0	0	0	0		
) Cost after Remailification (R.C) (IN el Profit (R.C)		0	0	0	0		
1) Net Profit (kt) 2 Summer Paddy for threshing		+	1 0			-	
a) Area improved (ac) b) Cost before Rehabilitation (kt)	2 998 4- 179 906 400	1 110 53 66,631,800	0 00	0 00	0 00	0 00	
b) Cost before Rehabilitation (kt) c) Cost after Rehabilitation (kt)	179 906.400 63 515 95	66.631.800 23.524.357	0	0	0	0	
	63 515 95	23 524 357 159 497 888	159,497,888	159,497,888	159,497,888	159,497,888	(C)
13 Improvement of Trollergy Driving Condition			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		100,401,000	, 30,407, 300	
(d) Near-roofs (RG) of Trollarge Driving Condition (d) Menscen Paddy Cultivation (kyal) (b) Summer Paddy Cultivation (kyal) (c) Black Bram Cultivation (kyal) (c) Black Bram Cultivation (kyal)	9 551 109	3 53 / 44 /	0				
(b) Summer Paddy Guttivation (kyat) (c) Stack Gram (hyat)	1,688 12: 12 939 35	625,228	0				
(d) Accumulation above (kyat)	24,178,58	625,228 4 792 358 33,133,615	33,133,615	33,133,615	33,133.615	33,133,615	
South Navon			1			The second secon	
2.1 Monsoon Paddy (a) Area Improved (ac)			_	0			
(a) Area Improved (ac) (b) Cost be fore Rehabilitation (kt) (c) Cost after Rehabilitation (kt)		0		0	0		
(c) Cost after Rehabilitation (Kt)		0	0	0	0		
(d) Net Profit (Kt) 2 2 Summer Paddy		0	0	0	0		
2 2 summer racoy (a) Area Improved (ac)	2 245 49	1 464 45	0.00	0 00	0 00	0 00	
a) Avea Improved (ac) b) Cost before Rehabilitation (kt)	2,245 49 134,729 40 47,566 21	87 867 000	000	0	3 00	0 00	
c) Cost after Rehabilitation (Kt)	47,566 21	87 867 000 31 021,444	o o	0	0	- o	
d) Net Profit (kt) 2 Improvement of Trollergy Driving Condition a) Monsoon Paddy Cultivation (kyat) b) Summer Paddy Cultivation (kyat) c) Black Gram Cultivation (kyat)	87,163,189	144 008 741	144,008,741	144,008,741	144 008 741	144,008.741	
a) Monsoon Paddy Cultivation (kyat)	13 499 60	8 796 914	0				
) Summer Paddy Cultivation (kyat)	13,488,60; 1,264,21	824 485					
) Black Gram Cultivation (kyat)	28,326,06 43,078,87	824 485 18 473 520 71 173 796	0				
d) Accumulation above (kyat)	43,078,87	71 173 796	71 173 796	71 173 796	71 173 796	71 173 796	
Negyi 1 Monsoon Paddy 2 Area Improved (ac)							
a) Area Improved (ac) b) Cost before Rehabilitation (kt)			13 413 39 934 966 937	5 412 42 377 267 324	0 00	0 00	
b) Cost before Rehabilitation (kt) c) Cost after Rehabilitation (kt)		+	934 966 937	377 267 324	0	0	
) Cost after Heriabilitation (kt)) Net Profit (kt)		1	284 135 840 650,831,097	114,651,293 913,447,128	913,447 128	913,447,128	
2 Summer Paddu							
a) Avea Improved (ac) b) Cost before Rehabilitation (kt)			772 64 46 358 400	5 420 55	1 602 91 96.174,600 33 954,443	0 00	
) Cost after Rehabilitation (kt)		+	16 366 822	325 233 000 114 823 511	33 954 4/3	0	
c) Cost after Rehabilitation (Kit) d) Net Profit (Kit)		1	16 366 833 29,991,567	240 401 056	302,621,213	302,621,213	
3 Improvement of Trollergy Driving Condition a) Monsoon Paddy Cultivation (kyat) 5 Summer Paddy Cultivation (kyat) 5 Summer Paddy Cultivation (kyat)							-9
a) Monsoon Paddy Cultivation (kyat)		+	7 551 739 434 996	3,047,192	30,618 220 5,878 593		
) Black Gram Cultivation (kval)		+	10 348 045	3,051,770 4,175,529 28 609 271	3 4 5 8 9 7 6		
) Black Gram Cultivation (kyat) I) Accumulation above (kyat)			10 348,045 18,334,780	28 609 271	3 4 58 976 68 565 060	68,565,060	
aung Nyo 1 Mensoon Paddy							
1 Monsoon Paddy) Area Improved (ac)		+	16,499 76	10,233 56	0 00	0 00	
Cost before Rehabilitation (kt)		†	1,150,099 271	713,320,066	3 00	0 00	
Cost after Rehabilitation (Bt)		*	1,150,099 271 349,514 416	713,320,066 216,777,501	0	O	
1) Net Profit (Kt) 2 Summer Paddy			800 584 855	1,297,127,420	1 297 127 420	1 297 127 420	
a) Area Improved (ac)		+	1.324 97	1,156 76	0 00	0 00	
c) Cost after Rehabilitation (kt)		1	79,498,200 28,066,840	69,405,600	0	0	
c) Cost after Rehabilitation (Ri)			28,066,840	69,405,600 24,503,647 96,333,313	0	0	
d) Net Profit (Kt)		+	51,431,360	96,333,313	96 333 313	96,333,313	
d) Net Profit (kit) 3 In provement of Trollergyt Driving Condition a) Mansoon Faddy Cultivisation (syst) (Syst)		+	9 289 365	5 761 404			
		1	9,289,365 745,958 19,507,666 29,542,989	5,761,494 651,256 12,099,138 48,054,877	0		
Summer Paday Cultivation (kyat)) Black Grain Cultivation (kyat)) Accumulation above (kyat) Sul-bolat of Road improve Benefi (kt)			19,507,666	12,099,138	0		
J) Accumulation above (kyat)	*******	407.814.040	29,542,989	48,054,877 3,031,787,105 21,497,800,610	48 0 54 877	48 054 877	
	270.811.08	407.814.040	1 988,530,688	3,031,787,105	3 133 963 051	3 133 963 051	

					Foreign	Portion	Local F	Portion	Combined Total
					(Ye	n)	Ку	at	10.001
			Unit	Qty.	Rate	Amount ('000)	Rate	Amount ('000)	('000) Yen
Α	Rem	iuneration (International)				(/		()	
	1	Chief Advisor	M/M	55	2,753,000	151,415			151,41
_	2	Agriculture (paddy)	M/M	32	2,753,000	88,096			88,09
	3	Agriculture (pulses, sesame)	M/M	20	2,753,000	55,060			55,06
	4	Farm Mechanization	M/M	15	2,753,000	41,295			41,29
	5	Post Harvest	M/M	10	2,753,000	27,530			27,53
	6	Training / Coordinator	M/M	46	2,753,000	126,638			126,63
	7	Irrigation Water Management	M/M	20	2,753,000	55,060			55,06
		Sub-total of A		198		545,094		0	545,09
В	Cour	nterpart Personnel							
	1	Agriculture (crops)	M/M	60			1,147,000	68,820	6,88
	2	Agriculture (extension)	M/M	60			1,147,000	68,820	6,88
	3	Farm Mechanization	M/M	36			1,147,000	41,292	4,12
	4	Post Harvest	M/M	36			1,147,000	41,292	4,12
	5	Irrigation Water Management	M/M	36			1,147,000	41,292	4,12
		Sub-total of B		228		0		261,516	26,15
С	Direc	et Cost							
	1	International Airfare	Trip	17	350,000	5,950			5,95
	2	Training (Out Country)	Person	50	700,000	35,000			35,00
	3	Accommodation Allowance	M/M	198			3,924,000	776,952	77,69
	4	Vehicle Rental	Month	118			2,492,500	294,115	29,41
	5	Office Equipment, furniture, consumable	M/M	198			250,000	49,500	4,95
	6	International Communications	M/M	198			100,000	19,800	1,98
	7	Domestic Communications	M/M	198			50,000	9,900	99
	8	Report Preparation	Year	5			2,000,000	10,000	1,00
	9	Training (agriculture extension)	Batch	25			10,000,000	250,000	25,00
	10	Extension Operation (fuel, allowance)	Month	59			6,000,000	354,000	35,40
	11	Extension Camp Establishment	Places	100			5,000,000	500,000	50,00
		Subtotal of C				40,950		2,264,267	267,37
		Total				5,860,440		2,525,783	838,62
		Allocation by Year (Based on Yearly	· MM)		Foreign		Local F		Total
					(Ky:	,	(Ky		(000)
		ear (2015)	%	17%		996,275		429,383	142,56
		year (2016)	%	23%		1,347,901		580,930	192,88
		ear (2017)	%	20%		1,172,088		505,157	167,72
		ear (2018)	%	21%		1,230,692		530,414	176,11
		ear (2019) ear (2020)	%	16% 		937,670 175,813		404,125 75,773	134,18 25,15
								/h /73	

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Table 3.1.20 Project Benefit Estimation -Base3 (Extension Service)

х		2015			2016			2017			2018			2019	
Agriculture Product on		Conversion		-	Conversion		- 14	Conversion	_	- 1	Conversion		200 000	Conversion	-
1.1 North Nawin	Financial	Factor	Economic	Financial	Factor	Economic	Financial	Factor	Economic	Financial	Factor	Economic	Financial	Factor	Economic
1.1.1 Black Gram															
(a) Increase of Sawn Area (ac)	10, 192, 16		10,192	15,178.42		15, 178 42	0	0.00	0	0	0.00	0	0	0.00	
(b) Gross Profit (Kt/ac)	328,000	1.07	350,960	328,000	1.07	350,960									
(c) Input Cost (kt/ac)	37,086	0.77	28,556	37,086	0.77	28,556									
(d) Family Labor (kt/ac)	28,258	0 60	16,955	28,258	0.60	16,955									
(e) H red Labor (kt/ac)	36,535	0 60	21,921	39,441	0.60	23,665									
(f) Unit Net Profit (kt/ac)	226,121		283,528	223,215		281,784									
(g) Net Profit (Kt)	2,304,661,411		2,889,717,376	3,388,051,020	4	4,277,035,901									
(h) Accumu ated Net Profit (Kt)	2,304,661,411		2,889,717,376	5,692,712,431		7,166,753,277	5,692,712,431		7,166,753,277	5,692,712,431		7,166,753,277	5,692,712,431		7,166,753,27
1.2 South Nawin								- 1	V2.02-31-31-31-31-31-31-31-31-31-31-31-31-31-						
1.2.1 Black Gram													The state of the s		
(a) Increase of Sawn Area (ac)	17,608 66		17,608 66	22,141,91		22,141.91	18,705,22		18,705 22	0	0.00	0	0	0:00	
(b) Gross Profit (Kt/ac)	250,167	1.07	267,679	250, 167	1.07	267,679	250,167	1.07	267,679	- 20		100			
(c) Input Cost (kt/ac)	38,684	0.77	29,787	38 684	0.77	29.787	38,684	0.77	29,787						
(d) Fam y Labor (kVac)	26,176	0 60	15,706	26,176	0 60	15,706	26,176	0.60	15.706		-				
(e) H red Labor (kt/ac)	36.535	0 60	21,921	36 535	0.60	21,921	36,535	0.60	21,921		-				
(f) Unit Net Profit (kt/ac)	148,772		200 265	148,772	-	200,265	148,772	-	200 265						
(g) Net Profit (Kt)	2,619,675,566		3,526 398 295	3 294 096 235		4 434 249 606	2,782,812,990	-	3,746,000,883	1	-				
(h) Accumu ated Net Profit (Kt)	2,619,675,566	_	3,526 398 295	5,913,771,801		7.960,647.901	8,696,584,791	-	11,706,648,784	8,696,584,791	-	11,706,648,784	8,696,584,791		11,706 648,78
1.3 Wegyi	1		1	4-14	1										
1.3.1 Black Gram								, , , , , , , , , , , , , , , , , , ,							
(a) Increase of Sawn Area (ac)	1		1		()		2,268 72		2 268 72	0.00		0.00	433.17	1 1	433.17
(b) Gross Profit (Kt/ac)							250,167	1.07	267,679	328,000	1.07	350,960	153_494	1.07	164,239
(c) Input Cost kt/ac							38,684.00	0.77	29,787	37,086	0.77	28,556	15,476	0.77	11,91
(d) Family Labor (kt/ac)							26,176	0.60	15,706	28,258	0,60	16,955	26.644	0.60	15,986
(e) H red Labor (kt/ac)							36,535 00	0.60	21,921	39,441	0.60	23,665	37 188	0.60	22,31
(f) Unit Net Profit (kt/ac)							148,772		200,265	223,215	0.00	281,784	74.186		114,023
(g) Net Profit (Kt)							337,522,012		454,345,211	0		0	32,135,150		49,391,34
(h) Accumu ated Net Profit (Kt)							337,522,012		454,345,211	337,522,012		454,345,211	369.657,162		503,736,55
1.4 Taung Nyo							001,022,012	-	To Mortoga	00/1022,016		10 1,0 10 12 11	oodjourpiuz.		000 1100
1.4.1 Black Gram	1		4												
(a) Increase of Sawn Area (ac)	1						9,104.47		9,104.47	10,683,44		10,683,44	0.00		0.0
(b) Gross Profit (Kt/ac)							250,167	1.07	267,679	328,000	1.07	350,960	0	1,07	-200
(c) Input Cost (kt/ac)							38,684	0.77	29,787	37,086	0.77	28,556	0		(
(d) Fam y Labor (kt/ac)							26,176	0.60	15,706	28,258	0 60	16,955	0		
(e) H red Labor (kt/ac)							36,535	0.60	21,921	39,441	0 60	23,665	0	0.00	
(f) Unit Net Profit (kt/ac)						_	148,772		200,265	223,215		281,784	0		
(g) Net Profit (Kt)							1,354,490,211		1,823,306,685	2,384,704,060		3,010 422,457	0		
(h) Accumu ated Net Profit (Kt)							1,354,490 211	-	1,823,306,685	3,739,194,271		4,833 729,142	3,739,194,271		4,833,729,14
Sub-Total (Base Case, Financial)	4 924,336 977		6,416 115,671	11,606,484 232		15,127,401,178	16,081,309,445		21,151,053,957	18,466,013,505		24, 16 1,476,414	18,498 148,655		24,210,867,75
Yeld Increase (Black-Gram)				710,563,489		883,939,781	1,421,126,978		1,767,879 563	2,131,690,468		2,651 819,347	2,842,253,957	Г	3,535 759,12
Yield increase by 15 %				556,846,018		445,907,943	1,113,692,035		891,815,889	1,670,538,051		1,337,723,831	2,227,384,069		1,783,631,775
Yeld increase by 13 %				81,338,388		50,508,693	162,676,776		101,017,387	244 015 163		151,526,079	326 845 393		202.034,776
G-Tola	4 924 336 977		6,416,115,671	12,955,232,127		16,507,757,595	18,7/8,805,234		23.911,766,796	22,512,257,187		28,302,545,671	23 894 632 074		29,732,293,43

Benefit		2016			2017			2018			2019	
. Road Improvement	Cinemalal cost	Conversion	Economic cost	Cinopolet cost	Conversion	Economic cost	Cinonalist cost	Conversion	Connection cost	Einanaial aget	Conversion	Faces militians
1.1 North Nawin	Financial cost	Factor	Economic cost	Financial cost	Factor	Economic cost	Financial cost	Factor	Economic cost	Financial cost	Factor	Economic cos
1.1.1 Monsoon Paddy										1		
(a) Area Improved (ac)												
(b) Cost before Rehabilitation (kt)												
(c) Cost after Rehabilitation (Kt)												
(d) Net Profit (Kt)												
1.1.2 Summer Paddy	0.000		0.000									
(a) Area Improved (ac)	2,998	0.99	2,998 178,107,336	0	0.99	0	0	0.99	0	0	0.99	
(b) Cost before Rehabilitation (kt)	63,515,955		62,880,795	0		0	0			0		
(c) Cost after Rehabilitation (Kt) (d) Net Profit (Kt)	116,390,445	0.99	115,226,541	159,497,888	0.99	115,226,541	159,497,888	0.99	115,226,541	159,497,888	0.99	115,226,5
1.1.3 Improvement of Tro lergyi Driving	110,380,443		113,220,341	139,497,666		113,220,341	139,497,000		113,220,341	139,497,000		113,220,3
(a) Monsoon Paddy Cultivation (kyat)	9,551,109	0.99	9,455,598	3,537,447	0.99	3,502,073						
(b) Summer Paddy Cultivation (kyat)	1,688,122	0.99	1,671,241	625,228	0.99	618,976		-				
(c) Black Gram Cultivation (kyat)	12,939,351	0.99	12,809,957	4,792,358	0.99	4,744,434						
(d) Sub-total of Trollergyi Driving (kyat)	24,178,582	- 0.00	23,936,796	8,955,033	- 5.50	8,865,483			0			
(e) Accumulation of Trollergyi (kyat)	24,178,582		23,936,796	33,133,615		32,802,279	33,133,615		32,802,279	33,133,615		32,802,2
1.2 South Nawin												
1.2.1 Monsoon Paddy	1/					1					11	
(a) Area Improved (ac)							,					
(b) Cost before Rehabilitation (kt)												
(c) Cost after Rehabilitation (Kt)												
(d) Net Profit (Kt)												
1.2.2 Summer Paddy												
(a) Area Improved (ac)	2,245		2,245	1,464		1,464	0		0	0		
(b) Cost before Rehabilitation (kt)	134,729,400	0.99	133,382,106	87,867,000	0.99	86,988,330	0	0.99	0	0	0.99	
(c) Cost after Rehabilitation (Kt)	47,566,215	0.99	47,090,553	31,021,444	0.99	30,711,230	0	0.99	0	0	0.99	
(d) Net Profit (Kt)	87, 163, 185		86,291,553	144,008,741		142,568,653	144,008,741		86,291,553	144,008,741		86,291,5
1.2.3 Improvement of Trollergyi Driving												
(a) Monsoon Paddy Cultivation (kyat)	13,488,602	0.99	13,488,602	8,796,914	0.99	8,708,945	0	0.99	0			
(b) Summer Paddy Cultivation (kyat)	1,264,211	0.99	1,251,569	824,485	0.99	816,240	0	0.99	0			
(c) Black Gram Cultivation (kyat)	28,326,064	0.99	28,042,803	18,473,520	0.99	18,288,785	0	0.99	0			
(d) Sub-total of Trollergyi Driving (kyat)	43,078,877		42,782,974	28,094,919		27,813,970	0		0			
(e) Accumulation of Trollergyi (kyat)	43,078,877		42,782,974	71,173,796		70,596,944	71,173,796		70,596,944	71,173,796		70,596,9
1.3 Wegyi												
1.3.1 Monsoon Paddy				13,413		13,413	5.412		5,412	5,412		5,4
(a) Area Improved (ac)				934,966,937	0.99	925,617,268	377,267,324	0.99	373,494,651	377,267,324	0.99	373,494,6
(b) Cost before Rehabilitation (kt)				284,135,840	0.99	281,294,482	114,651,293	0.99	113,504,780	114,651,293	0.99	113,504,7
(c) Cost after Rehabilitation (Kt) (d) Net Profit (Kt)			-	650,831,097	0.99	644,322,786	913,447,128	0.99	904,312,657	913,447,128	0.99	904,312,6
1.3.2 Summer Paddy				030,631,097		044,322,700	913,447,120		304,312,037	913,447,120		304,312,0
(a) Area Improved (ac)				773		773	5,421		5,421	1,603		1,6
(b) Cost before Rehabilitation (kt)				46,358,400	0.99	45,894,816	325,233,000	0.99	321,980,670	96,174,600	0.99	95,212,8
(c) Cost after Rehabilitation (Kt)				16,366,833	0.99	16,203,165	114,823,511	0.99	113,675,276	33,954,443	0.99	33,614,8
(d) Net Profit (Kt)				29,991,567	0.00	29,691,651	240,401,056	0.00	237,997,045	302,621,213	0.00	299,595,0
1.1.3 Improvement of Trollergyi Driving				20,001,001		20,001,001	210,101,000		201,007,010	002,021,210		200,000,0
(a) Monsoon Paddy Cultivation (kyat)				7,551,739	0.99	7,476,222	3,047,192	0.99	3,016,720	30,618,220	0.99	30,312,0
(b) Summer Paddy Cultivation (kyat)				434,996	0.99	430,646	3,051,770	0.99	3,021,252	5,878,593	0.99	5,819,8
(c) Black Gram Cultivation (kyat)				10,348,045	0.99	10,244,565	4,175,529	0.99	4,133,774	3,458,976	0.99	3,424,3
(d) Sub-total of Trollergyi Driving (kyat)				18,334,780		18,151,433	10,274,491		10,171,746	39,955,789		39,556,2
(e) Accumulation of Trollergyi (kyat)				18,334,780		18,151,433	28,609,271		28,323,179	68,565,060		67,879,4
1.4 Taung Nyo												
1.4.1 Monsoon Paddy										*		
(a) Area Improved (ac)				16,500		16,500	10,234		10,234	0		
(b) Cost before Rehabilitation (kt)				1,150,099,271	0.99	1,138,598,278	713,320,066	0.99	706,186,865	0		
(c) Cost after Rehabilitation (Kt)				349,514,416	0.99	346,019,272	216,777,501	0.99	214,609,726	0		
(d) Net Profit (Kt)				800,584,855		792,579,006	1,297,127,420		1,284,156,145	1,297,127,420		1,284,156,1
1.4.2 Summer Paddy												
(a) Area Improved (ac)				1,325		1,325	1,157		1,157	0		
(b) Cost before Rehabilitation (kt)				79,498,200	0.99	78,703,218	69,405,600	0.99	68,711,544	0		
(c) Cost after Rehabilitation (Kt)				28,066,840	0.99	27,786,172	24,503,647	0.99	24,258,611	0	0.99	
(d) Net Profit (Kt)				51,431,360		50,917,046	96,333,313		95,369,979	96,333,313		95,369,9
1.3.3 Improvement of Tro lergy Driving												
(a) Monsoon Paddy Cultivation (kyat)				9,289,365	0.99	9,196,471	5,761,494	0.99	5,703,879	0		
(b) Summer Paddy Cultivation (kyat)				745,958	0.99	738,498	651,256	0.99	644,743	0		
(c) Black Gram Cultivation (kyat)				19,507,666	0.99	19,312,589	12,099,138	0.99	11,978,147	0		
(d) Sub-total of Trollergyi Driving (kyat)				29,542,989		29,247,558	18,511,888		18,326,769	0		47.5
(e) Accumulation of Trollergyi (kyat)	270,811,089			29,542,989		29,247,558	48,054,877		47,574,327	48,054,877		47,574,3
Sub-total of Road Improve Beneft (kt)			268,237,864	1,988,530,688		1,926,103,897	3,031,787,105		2,902,650,649	3,133,963,051	i .	3,003,804,8

Table 3.1.21 Financial Cost and Benefit Analyses (Base3) (Extension Service)

						FIRR =	17.0%		B/C =	1.34	
Year		Cost (kyat)		Benefit	Benefit -Cost	Present	Presen	t Value	Present	Present	Value
I cai		Cost (Kyat)		(kyat)	(kyat)	Value Factor	Discout Rate	17.0%	Value	Discout Rate	12.0%
	Investment	O&M	Total	Total			Cost	Benefit		Cost	Benefit
1	23,616,120,000		23,616,120,000	0	-23,616,120,000	0.85470	20,184,697,764	0	0.89286	21,085,888,903	0
2	29,891,920,000	63,150,000	29,955,070,000	4,924,336,977	-25,030,733,023	0.73051	21,882,478,186	3,597,277,405	0.79719	23,879,882,253	3,925,632,195
3	46,156,774,000	141,068,061	46,297,842,061	12,955,232,127	-33,342,609,934	0.62437	28,906,983,648	8,088,858,283	0.71178	32,953,878,022	9,221,275,123
4	25,511,391,000	256,819,872	25,768,210,872	18,778,805,234	-6,989,405,638	0.53365	13,751,205,732	10,021,309,413	0.63552	16,376,213,373	11,934,306,302
5	25,511,391,000	337,314,933	25,848,705,933	22,512,257,187	-3,336,448,746	0.45611	11,789,853,263	10,268,065,626	0.56743	14,667,331,208	12,774,130,096
6	1,341,795,000	337,314,933	1,679,109,933	23,894,632,074	22,215,522,141	0.38984	654,584,216	9,315,083,368	0.50663	850,687,465	12,105,737,448
7	251,586,000	337,314,933	588,900,933	25,254,056,952	24,665,156,019	0.33320	196,221,791	8,414,651,776	0.45235	266,389,337	11,423,672,662
8		337,314,933	337,314,933	25,254,056,952	24,916,742,019	0.28478	96,060,547	7,191,850,339	0.40388	136,234,755	10,199,608,522
9		337,314,933	337,314,933	25,254,056,952	24,916,742,019	0.24340	82,102,455	6,146,837,462	0.36061	121,639,138	9,106,865,477
10		337,314,933	337,314,933	25,254,056,952	24,916,742,019	0.20804	70,174,999	5,253,854,008	0.32197	108,605,289	8,131,048,717
11		337,314,933	337,314,933	25,254,056,952	24,916,742,019	0.17781	59,977,968	4,490,423,867	0.28748	96,971,297	7,260,036,293
12		337,314,933	337,314,933	25,254,056,952	24,916,742,019	0.15197	51,261,750	3,837,859,035	0.25668	86,581,997	6,482,211,338
13		337,314,933	337,314,933	25,254,056,952	24,916,742,019	0.12989	43,813,837	3,280,249,457	0.22917	77,302,463	5,787,472,232
14		337,314,933	337,314,933	25,254,056,952	24,916,742,019	0.11102	37,448,704	2,803,705,403	0.20462	69,021,382	5,167,485,134
15		337,314,933	337,314,933	25,254,056,952	24,916,742,019	0.09489	32,007,814	2,396,357,464	0.18270	61,627,438	4,613,916,205
16		337,314,933	337,314,933	25,254,056,952	24,916,742,019	0.08110	27,356,241	2,048,104,019	0.16312	55,022,812	4,119,441,770
17		337,314,933	337,314,933	25,254,056,952	24,916,742,019	0.06932	23,382,671	1,750,611,228	0.14564	49,126,547	3,678,000,854
18		337,314,933	337,314,933	25,254,056,952	24,916,742,019	0.05925	19,985,910	1,496,302,874	0.13004	43,864,434	3,284,037,566
19		337,314,933	337,314,933	25,254,056,952	24,916,742,019	0.05064	17,081,628	1,278,865,444	0.11611	39,165,637	2,932,248,553
20		337,314,933	337,314,933	25,254,056,952	24,916,742,019	0.04328	14,598,990	1,092,995,585	0.10367	34,969,439	2,618,088,084
21		337,314,933	337,314,933	25,254,056,952	24,916,742,019	0.03699	12,477,279	934,147,567	0.09256	31,221,870	2,337,515,511
22		337,314,933	337,314,933	25,254,056,952	24,916,742,019	0.03162	10,665,898	798,533,281	0.08264	27,875,706	2,086,995,267
23		337,314,933	337,314,933	25,254,056,952	24,916,742,019	0.02702	9,114,249	682,364,619	0.07379	24,890,469	1,863,496,862
24		337,314,933	337,314,933	25,254,056,952	24,916,742,019	0.02310	7,791,975	583,368,716	0.06588	22,222,308	1,663,737,272
25		337,314,933	337,314,933	25,254,056,952	24,916,742,019	0.01974	6,658,597	498,515,084	0.05882	19,840,864	1,485,443,630
26		337,314,933	337,314,933	25,254,056,952	24,916,742,019	0.01687	5,690,503	426,035,941	0.05252	17,715,780	1,326,343,071
27		337,314,933	337,314,933	25,254,056,952	24,916,742,019	0.01442	4,864,081	364,163,501	0.04689	15,816,697	1,184,162,730
28		337,314,933	337,314,933	25,254,056,952	24,916,742,019	0.01233	4,159,093	311,382,522	0.04187	14,123,376	1,057,387,365
29		337,314,933	337,314,933	25,254,056,952	24,916,742,019	0.01053	3,551,926	265,925,220	0.03738	12,608,832	943,996,649
30		337,314,933	337,314,933	25,254,056,952	24,916,742,019	0.00900	3,035,834	227,286,513	0.03338	11,259,572	842,980,421
Total	152,280,977,000	9,231,226,191	161,512,203,191		527,650,427,256		98,009,287,549	97,864,985,020		111,257,978,663	149,557,273,349

Table 3.1.22 Economic Cost and Benefit Analyses (Base2) (Extension Service)

						FIRR =	22.8%		B/C =	1.73	
Year		Cost (kyat)		Benefit	Benefit -Cost	Present Value	Present	Value	Present	Present	Value
rear		Cost (Kyat)		(kyat)	(kyat)	Factor	Discout Rate	22.8%	Value	Discout Rate	12.0%
	Investment	O & M	Total	Total			Cost	Benefit		Cost	Benefit
1	21,924,003,000		21,924,003,000	0	-21,924,003,000	0.81433	17,853,373,363	0	0.89286	19,575,065,319	0
2	25,279,484,000	63,150,000	25,342,634,000	6,416,115,671	-18,926,518,329	0.66314	16,805,714,311	4,254,782,946	0.79719	20,202,894,398	5,114,863,252
3	43,454,167,000	141,068,061	43,595,235,061	16,507,757,595	-27,087,477,466	0.54001	23,541,862,885	8,914,354,179	0.71178	31,030,216,412	11,749,891,701
4	31,272,658,000	256,819,872	31,529,477,872	23,911,766,796	-7,617,711,076	0.43975	13,865,087,894	10,515,199,449	0.63552	20,037,613,777	15,196,406,034
5	24,515,345,000	337,314,933	24,852,659,933	28,302,545,671	3,449,885,738	0.35810	8,899,737,522	10,135,141,605	0.56743	14,102,144,826	16,059,713,490
6	1,337,754,000	337,314,933	1,675,068,933	29,732,293,437	28,057,224,504	0.29161	488,466,852	8,670,234,089	0.50663	848,640,174	15,063,271,824
7	250,828,000	337,314,933	588, 142, 933	31,112,649,856	30,524,506,923	0.23747	139,666,302	7,388,320,961	0.45235	266,046,456	14,073,807,162
8		337,314,933	337,314,933	31,112,649,856	30,775,334,923	0.19338	65,229,962	6,016,564,229	0.40388	136,234,755	12,565,777,024
9		337,314,933	337,314,933	31,112,649,856	30,775,334,923	0.15748	53,120,356	4,899,620,099	0.36061	121,639,138	11,219,532,665
10		337,314,933	337,314,933	31,112,649,856	30,775,334,923	0.12824	43,257,267	3,989,886,218	0.32197	108,605,289	10,017,339,874
11		337,314,933	337,314,933	31,112,649,856	30,775,334,923	0.10443	35,225,798	3,249,094,024	0.28748	96,971,297	8,944,264,581
12		337,314,933	337,314,933	31,112,649,856	30,775,334,923	0.08504	28,685,262	2,645,819,744	0.25668	86,581,997	7,985,994,965
13		337,314,933	337,314,933	31,112,649,856	30,775,334,923	0.06925	23,359,059	2,154,551,003	0.22917	77,302,463	7,130,085,967
14		337,314,933	337,314,933	31,112,649,856	30,775,334,923	0.05639	19,021,189	1,754,442,325	0.20462	69,021,382	6,366,270,414
15		337,314,933	337,314,933	31,112,649,856	30,775,334,923	0.04592	15,489,502	1,428,692,881	0.18270	61,627,438	5,684,281,129
16		337,314,933	337,314,933	31,112,649,856	30,775,334,923	0.03740	12,615,578	1,163,613,105	0.16312	55,022,812	5,075,095,445
17		337,314,933	337,314,933	31,112,649,856	30,775,334,923	0.03045	10,271,240	947,380,188	0.14564	49, 126, 547	4,531,246,325
18		337,314,933	337,314,933	31,112,649,856	30,775,334,923	0.02480	8,365,410	771,593,716	0.13004	43,864,434	4,045,888,987
19		337,314,933	337,314,933	31,112,649,856	30,775,334,923	0.02019	6,810,388	628, 164, 401	0.11611	39, 165, 637	3,612,489,775
20		337,314,933	337,314,933	31,112,649,856	30,775,334,923	0.01644	5,545,457	511,491,964	0.10367	34,969,439	3,225,448,411
21		337,314,933	337,314,933	31,112,649,856	30,775,334,923	0.01339	4,516,647	416,598,382	0.09256	31,221,870	2,879,786,871
22		337,314,933	337,314,933	31,112,649,856	30,775,334,923	0.01091	3,680,106	339,439,010	0.08264	27,875,706	2,571,149,384
23		337,314,933	337,314,933	31,112,649,856	30,775,334,923	0.00888	2,995,357	276,280,331	0.07379	24,890,469	2,295,802,433
24		337,314,933	337,314,933	31,112,649,856	30,775,334,923	0.00723	2,438,787	224,944,458	0.06588	22,222,308	2,049,701,373
25		337,314,933	337,314,933	31,112,649,856	30,775,334,923	0.00589	1,986,785	183,253,508	0.05882	19,840,864	1,830,046,065
26		337,314,933	337,314,933	31,112,649,856	30,775,334,923	0.00480	1,619,112	149,340,719	0.05252	17,715,780	1,634,036,370
27		337,314,933	337,314,933	31,112,649,856	30,775,334,923	0.00391	1,318,901	121,650,461	0.04689	15,816,697	1,458,872,152
28		337,314,933	337,314,933	31,112,649,856	30,775,334,923	0.00318	1,072,661	98,938,227	0.04187	14,123,376	1,302,686,649
29		337,314,933	337,314,933	31,112,649,856	30,775,334,923	0.00259	873,646	80,581,763	0.03738	12,608,832	1,162,990,852
30		337,314,933	337,314,933	31,112,649,856	30,775,334,923	0.00211	711,735	65,647,691	0.03338	11,259,572	1,038,540,252
Total	148,034,239,000	9 231 226 191	157,265,465,191		694,308,610,523		81,942,119,334	81,995,621,676		107,240,329,464	185,885,281,426
				1			NPV =	53,502,342		NPV =	78,644,951,96

Table 3.1.23 Cost and Benefit of Crops (M-paddy) per Ace / Season

	Yield increas	e by	15%								
	Area not changed										
Year	W/O P	W/ P	Increment								
2017	18,561,533,908	19,118,379,926	556,846,018								
2018	18,561,533,908	19,675,225,943	1,113,692,035								
2019	18,561,533,908	20,232,071,959	1,670,538,051								
2020	18,561,533,908	20,788,917,977	2,227,384,069								
2021	18,561,533,908	21,345,763,995	2,784,230,087								

Table 3.1.24 Cost and Benefit of Crops (M-paddy) per Ace / Season (Estimation)

Crop					Monsoon Paddy				
		Upper Position			Middle Position			Lower Position	
Location	Financial	Conversion Facter	Economic	Financial	Conversion Facter	Economic	Financial	Conversion Facter	Economic
Gross Profit	210,859	0.78	164,470	179,357	0.78	139,898	225,404	0.78	175,815
Input Cost	35,846	0.77	27,601	30,491	0.77	23,478	38,319	0.77	29,506
Labor Cost									
Family Labor	30,097	0.6	18,058	27,718	0.6	16,631	30,010	0.6	18,006
Hired Labor	54,723	0.6	32,834	50,396	1.0	50,396	54,564	1.0	54,564
Net Profit	90,193		85,977	70,752		49,393	102,511		73,739
Total(Kyat/ac)	90,193		85,977	70,752		49,393	102,511	0.00	73,739

Table 3.1.25 Crop: Monsoon Paddy (Financial Price) (Estimation)

ř –	T	1400 - 1 M. 1114		71C U. 1.ZC			COII I GC						-	2010		-	100.00	
Actarties		Without Project			20 16			2017			2018			2019		-	2020	1
Activities	Po uton	Position	Position	Upper Position	Reddle Position	Position:	Position.	Middle Position	Posicion P	Upper Position	Position Position	Lower Position	Position	Position:	Position	Position Position	Position	Position .
North Nawin	27 679.15	25,48 9 39	-			,			-							Ţ		
(A) Gross Profit	5.836.397.890	4 571 700 522	1			- 2						1 19						
(B) Procution Cost									1						Į.			
nput Cost	992 186,811	777 196 990				-			-			1	(
Family Labor	833,059,378	706,514,912	-			- 3			-									
Hired Labor	1 5 14 686 125	1 284 563, 298		4		-			-									3
(C)Net Profit	2 496 465 576	1 803 425 322				-						3						
Total(Kyat/ac)	2 496 465 576	1 803,425 322		2.571.359.543	1 857 528 082		2 545 253 511	1,911,630,841	-	2,721 147 478	1 965 733 601		2,796,041,445	2,019,835,361		2870 935 412	2 073 939 120	
South Nawin	26,885,33		21 872 73															
(A) Gross Profit	5 669 224 657	4 295 528 407	4 936 200 833										2					
(B) Procution Cost																		-
nput Cost	953 757 385	730, 247 254	838 141 141															
Family Labor	009,197,874	663,835,013	656 400,627															
Hired Labor	1 471 300 637	1 206 954 042	1,193,463,640															
(C)Net Profit	2 4 24 958 761	1.594,482 098	2 242 195 425		and the latest design				Acres S						The second			
Total(Kyat/ac)	2,424 958 761	1 594 482 098	2 242 195 425	2,497,707,524	1.745,316,561	2,309.451.288	2 570,456 287	1,796,151,024	2,376,727,151	2,543.205.949	1 846 985 487	2 443 993 013	2 715 953 812	1 897 819 950	2,511 258 876	2,788,702,575	1,948,654,413	2 578 524 739
Wegyi	19 455.36	10 096 25	10,876.81															
(A) Gross Profit	4 102 337 754	1 810 833 111	2 451 676,481															
(B) Procution Cost								= 0										
nput Cost	697 396,835		416,788 482															
Family Labor	585 547 9 10		326 413,068															
Hired Labor	1 064 655 665		593,482,261															
(C)Net Profit	1 754 737, 284	714 329,879	1,114 992,670				2. 2. 2								1			
Total(Kyat/ac)	1 754 737,284	714,329,879	1,114 992 670	1,807 379 403	735,759,775	1.148,442,450	1 860 021 521	757 189,672	1,181,892,230	1,912 683 646	778,619,568	1 215 342 010	1 965 305 758	800 049 464	1,248,791,790	2.017,947,377	821,479,361	1,282,241,571
Taung Nyo	15 611 77		14,380 80															
(A) Gross Profit	3,502 741 210	3,405 763 446	3 241 489 843															
(B) Procution Cost																		
nput Cost	595 465 507	578,965 571	551 057 875													7		1
Family Labor	499 964 442	526,329,895	431 567 808)									
Hired Labor	909 045 890	956 956 541	784 673,971			-												
(C)Net Profit	1 498 265 371		1 474 190 189											-				
Total(Kyat/ac)	1 498 265 371	1 343 491 333	1 474 190 189	1 543 213 332		1 518 415 895	1 588 161 293		1 562 641 600	1 633 109 254		1 606,867 306	1 678 057 216		1 651 093,012	1 723 005 177		1 695 318 717
Incremental Achievement					20%			40%			60%			80%			100%	
Grand Total	8,174 426 992	5 555 728 632	# 831 378 284	8 419 659 802	5.722,400,491	4,976,319,633	8,664 892 612	5 889 072 350	5 121 250 981	8,910 125 421	6,055 744 209	5 266 202 329	9 155 358 231	6 222 416 068	5 411 143 678	9 400,591,041	6,389,087,927	5 556 085 027

Table 3.1.26 Crop: Monsoon Paddy (Economic Price) (Estimation)

		Without Project			2017			2018			2019		1	2020			2021	
Activities.	Ugper Position	Mddle Position	Lower Poseon	Upper Position	Anddle Position	Lower Position	Upper Position	Naddle Position	Lower Position	Upper Position	Addle Polition	Lower Position	Upper Position	Addle Position	Lower Position	Upper Position	Middle Position	Lower Position
North Navin	27 679 15	25 489 39	-			+			-						-			
(A) Gross Profit	4,552,389 801	3,565,914,682	-			-			-			- 3			-			
(B) Procution Cost																		
Input Cast	763,972,219	598, 439 898																
Family Labor	499 830 091	706 514 912		1.2		+	- 1	- 1	- 4						-			- 3
Hired Labor	908,817,211	1.284,563,298				- 4			-					/				- 5
(C)Net Profit	2 379 770 280	976,395,574				- 4									- 4			
Total (Kyat/ac)	2 379 770 280	976 396 574	-	2 451 163 388	1 005 688 471	+	2 522 556.497	1 034 980 368	-	2.593.949.605	1 064 272 266		2.565 342 714	1 093,564 163		2 36.735.822	1 122,856,060	
South Nawin	26 886 33	23 949 60	21 872 73						-									
(A) Gross Profit	4 421 994 695	3 350,501 141	3,845 554 025															
(B) Procution Cost																	- 4	
Input Cost	742,089,594	562 288 709	645,376,771	- 4					- (
Family Labor	485 513 347	396,305,798	393 840 376															
Hired Labor	882 785,759	1 206,964 042	1 193 463 640	2.1								1						1
(C)Net Profit	2.311,605,995	1,182 942 592	1.612.873.238													- Marie -	The second second	- Company
Total(Kyat/ac)	2 311 605 995	1 182 942 592	1 612 873 238	2380,954 175	1 218,430 870	1.661,259,435	2 450 302 355	1,253 919 148	1 709 645 632	2 519 650 535	1 289 407 425	1 758 031 829	2 588 998 714	1 324 895 703	1 806 418,027	2.658.346.894	1,360,383,981	1 854 804 224
Wegyi	19,455.36	10 096.25	10,876 81				1											
(A) Gross Profit	3,199 823,059	1,412,445 183	1 912 306 350															
(B) Procution Cost	-			-0											/			
Input Cost	536 987 391	237 039 758	320 931 156	- 1		2												
Family Labor	351 324 891	167 910,734	195 847 841															
Hired Labor	638 797,290	508,810,615	593 482 261											_				
(C)Net Profit	1 672 713 487	498,684,076	802.045 092									Total Contract				10.00		
Total(Kyat/ac)	1 672 713 487	498,684 076	802,045,092	1 722 894 892	513 644 598	826 106 445	1 773 076 296	528 605 121	850 167 798	1,823 257 701	543,585,643	874 229 150	1.873,439.105	558 526 165	898 290,503	1,923,620,510	573,466,687	922,351,956
Taung Nyo	16,61177	18,988 74	14 380 80	54.7							1				- 1		4	
(A) Gross Profit	2732.137.812	2,656,488,749	2 528,360,352															
(B) Procution Cost	-																	
input Cost	458,501 464		424 319 885						1									
Family Labor	299 975 343	315 801 735	258,940,685															
Hired Labor	545 430 856	956 956 541	784 673,971			2												
(C)Net Profit	1 428 230 149	937 91 (1835	1,060.425.811															
Total(Kyat/ac)	1 428,230 149	937 910 835	1.060,425.811	1.471,077,053	966 048, 160	1 092,238 585	1 513 923 958	994 185 485	1 124,051 360	1.556 770 862	1,022,322,810	1 155 854 134	1.599/617 767	1 05 0,460, 135	1 187 676 908	1.642.464.671	1,078,597 460	1 219 489 683
Incrementa	l Achievement				20%		-	40%			60%			80%			100%	
Grand Total	7 792 319 911		3 475 344 141	8 026 089 508		3 579 504 465	8 259 859 106	3 811 690 122	3 683 864 790	8,493 628 703	3 919 568 144		8.727.398.300	4,027 446 166	3 897 385 438	8 961 167 897	4 135 324 188	3 996 645 763

Table 3.1.27 Crop: Monsoon Paddy (Economic Price) (Estimation)

Year	W/O P	W/ P	Increment
2017	14,863,598,129	15,309,506,072	445,907,943
2018	14,863,598,129	15,755,414,018	891,815,889
2019	14,863,598,129	16,201,321,960	1,337,723,831
2020	14,863,598,129	16,647,229,904	1,783,631,775
2021	14,863,598,129	17,093,137,848	2,229,539,719

Table 3.1.28 Cost and Benefit of Crops (S-paddy) per Ace / Season

-			per / tee / eeuceri
	Yield increas	e by	13%
	Area not cha	nged	
Year	W/O P	W/ P	Increment
2017	3,128,399,552	3,209,737,940	81,338,388
2018	3,128,399,552	3,291,076,328	162,676,776
2019	3,128,399,552	3,372,414,715	244,015,163
2020	3,128,399,552	3,455,244,945	326,845,393
2021	3,128,399,552	3,547,260,314	418,860,762

Table 3.1.29 Cost and Benefit of Crops (S-paddy) per Ace / Season (Estimation)

Crop					Summer- Paddy				
		Upper Position			Middle Position			Lower Position	
Location	Financial	Conversion Facter	Economic	Financial	Conversion Facter	Economic	Financial	Conversion Facter	Economic
Gross Profit	202,986	0.78	158,329	164,560	0.78	128,357	226,086	0.78	176,347
Input Cost	33,789	0.77	26,018	39,205	0.77	30,188	39,484	0.77	30,403
Labor Cost	l li	7		V V					
Family Labor	31,573	0.6	18,944	30,193	0.6	18,116	39,465	0.6	23,679
Hired Labor	61,908	1.0	61,908	59,203	1.0	59,203	77,383	1.0	77,383
Net Profit	75,716		51,459	35,959		20,850	69,754		44,882
Total(Kyat/ac)	75,716		51,459	35,959		20,850	69,754	0.00	44,882

Table 3.1.30 Crop: Summer-Paddy (Financial Price) (Estimation)

	V	Vithout Project			2016			2017			2018			2019			2020	
Activities	Upper Position	M date Postion	Lower Position	Upper Position	Middle Position	Posibon	Upper Position	Middle Position	Lower Postson:									
North Nawin	6804 39	2.592.95													-			
(A) Gross Profit	1,381,19,1909	426 695,852				7			3								1 -3	
(B) Procution Cost												-						
nput Cost	229,913,534	101,656,605	1			-						-			-			
Family Labor	214 83 5005	78,288,939																
Hired Labor	421,246 176	153 510,419																
(C)Net Profit	515,201,194	93,239,889				-									====			
Total(Kyat/ac)	515,201,194	93,239,889		528,596,425	95,664,126		541991.656	96,088,363	-	555,386,887	100,512,600		568,782 118	104 428 676		592,481,373	107,225,872	
South Nawin	5,718.37	23 949 0	0.00															
(A) Gross Profit	1,160,749,053	3 941 146 176	0															
(B) Procution Cost																		
Input Cost	193,218,004	938 944 068	0											-				
Family Labor	180,546,096	723 110 273	.0						1									
Hired Labor	354,012,850	1 417,888, 169	0															
(C)Net Profit	432,972,103	861 203 666	0															
Total(Kyat/ac)	432,972,103	861 203 666	.0	444,229,378	883,594,961	0	455,486,652	905,986,257	0	466,743,927	928,377,552	0	478,001,202	950,768,847	0	489,258,476	973,160,143	0
Wegyi	772 64	5,420.55	ED 441 55															
(A) Gross Profit	154,831,103	892 005 708	2 360 688 273															
(B) Procution Cost																		
nput Cost	26,106,733	212 512 963	412,274,190															
Family Labor	24,394,5031	163,682,666	412.075.771															
Hired Labor	47,832,597	320 912 822	807 905,464		£				-									
(C)Net Profit	58,501,210	194 917 557	728 339 878															
Total(Kyat/ac)	58,501,210	194 917 557	728 339 878	60,022,241	199,985,413	747,276,715	61,543,273	205,053.270	766,213,552	63,064,304	210, 121, 126	785,150,388	64,585,336	215,188,983	804,087,225	66,106,367	220,256,839	823,024,062
Taung Nyo	1,324 97	2 589 96	724 98					1						-				
(A) Gross Profit	268 950,300	426 203 818	163 907 828															
(B) Procution Cost																		
Input Cost	44 769 411	191,539 382	28,629 110															
Family Labor	41 833 278	78,198 662	28,611 336															
Hired Labor	82 026,243	153 333 402	56 101, 127															
(C)Net Profit	100,321,428	93 132,372	50,570,255											,				
Total(Kyat/ac)	100,321,428	93 132,372	50,570,255	102,929,785	95,553,814	51,885,082	105,538,142	97,975,255	53,199,908	108, 146, 499	100,396,697	54,514,735	110,754,857	102,818,139	55,829,562	113,363,214	105,239,580	57,144,388
Incremental Achievement					20%			40%			60%			80%			100%	
Grand Total	1 106 995 935	1 242 402 494	779 010 122	1 135 777 829	1 274 700 214	700 (8) 707		4 007 400 445	040 440 400	4 407 247 247	4 222 ANT OFF	200 405 490	1 222 123 513	4 070 004 040	050 0 0 707	V 001 000 400	1 40 5 882 434	880 168 450

Table 3.1.31 Crop: Summer- Paddy (Economic Price) (Estimation)

Year	W/O P	W/ P	Increment
2017	1,942,642,063	1,993,150,756	50,508,693
2018	1,942,642,063	2,043,659,450	101,017,387
2019	1,942,642,063	2,094,168,142	151,526,079
2020	1,942,642,063	2,144,676,839	202,034,776
2021	1,942,642,063	2,195,185,533	252,543,470

Table 3.1.32 Crop: Summer-Paddy (Economic Price) (Estimation)

	V	Vithout Project			2017			2018			2019			2020			2021	
Activities	Upp ≈ Position	Middle Pasitina	Lower Position	Upper Pomeon	Middle Position	Lower Position	Position	Middle Position	Liter Ensition	Upper. Prodon	Middle Position	Lower Packen	Uppe Passon	Middle Pasitinn	Lower Power	Upper. Position	Middle Prisition	Lower . Fosion
North Nawin	6,804 39	2,592 95																
(A) Gross Profit	1 077 332,264	332,823 283																
(B) Procution Cost																		
input Cost	177 036 619	78,275,975																
Family Labor	128 902 364	78,288 939				8			16			-						
Hired Labor	421.246,176	153 510.419										- 0						
(C)Net Profit	350, 147, 105	22,747,950						40000	54	The second		- 1					20020	
Total(Kyat/ac)	350 147 105	22,747,950		359 250 930	23,339 397		368,354,754	23,930,843		377 458 579	24.522.290		386 562 404	25 113 737		395 666 229	25,705,184	
South Nawin	5,718 37	23 949 60	0 00															
(A) Gross Profit	905 383 804	3 074,098 807	- 4															
(B) Procution Cost																		
nput Cost	148 780 551	722,991,525	.0															
Family Labor	108 328,801	433,870,954	0															
Hired Labor	354 012 850	1.417.888 169	0															
(C)Net Profit	294,261 602	499,349,159	0															
Total(Kyat/ac)	294,261 602	499,349 159	0	301 912 404	512 332,237	0	309 563 205	525,315,315	0	317 214,007	538 296,393	0	32 (,864,809	551 281 672	0	332,515,610	564,264.550	0
Wegyi	772 64	5,420 55	10 441 55															
(A) Gross Profit	122 331 319	695,765 536	1 841 336,018															
(B) Procution Cost																		
Input Cost	20.102.548	163 635.563	317 454 445					ļ										
Family Labor	14,636,892	98 198 684	247,245,462															
Hired Labor	47,832,597	320 912 822	807 198 464															
(C)Net Profit	39.759 282	113 018 467	468 637 647			bear a											3.4	
Total(Kyat/ac)	39,759 282	113 018 467	468 637 647	40,793 023	115 956 947	450 822 226	41 826 765	118 895 427	493 006 805	(2 86)) 506	12 833,907	505 191,383	43.894.247	24,772,388	517 375 962	44,927 989	127 710 468	529 56 ,541
Taung Nyo	1 324 97	2:589 96	724 98															
(A) Gross Profit	209 781 175	32 439,496	127 848,048															
(B) Procution Cost																		
input Cost	34 473 069	78 185 712	22 041 567															
Family Labor	25 100 232	40,919 715	17,166,801															
Hired Labor	82 026 243	153, 333, 402	56,101,127															
(C)Net Profit	68 161 631	54 000 667	32,538 553															
Total(Kyat/ac)	68,181 631	54 000 667	32,538 553	69,954,353	55,404,684	33,384,555	71 727,076	56,808,702	34 230,558	3,499,798	58,212,719	35,076,540	75,272,521	59,616,736	35922563	77.045243	61,020,754	36,768,565
Increment	tal Achievement				20%			40%			60%			80%			100%	
						101 1000000	and educate	1.2				too as ver	-		- Control	V 1950.01		
Grand Total	752 349 620	689 115 243	501 176,200	771 910 7 0	707 033 265	514,206,781	791 471.800	724,9 0 287	527 237 363	811 032 890	742 867 309	540,767,943	830 593 981	760 784 333	553 298 525	850 55 071	778 701,356	566,329 106

Table 3.1.33 Cost and Benefit of Crops (Black-gram) per Ace / Season

Upper	Yield increase by	44%
Middle	Yield increase by	0%
Lower	Yield increase by	150%

Table 3.1.34 Cost and Benefit of Crops (Black-gram) per Ace / Season (Estimation)

Crop					Black Gram				
Location		Upper Position			Middle Position			Lower Position	
Eddallon	Financial	Conversion	Economic	Financial	Conversion	Economic	Financial	Conversion	Economic
Gross Profit	250,167	1.07	267,679	328,000	1.07	350,960	153,494	1.07	164,239
Input Cost	38,684	0.77	29,787	37,086	0.77	28,556	15,476	0.77	11,917
Labor Cost									
Family Labor	20,825	0.6	12,495	22,481	0.6	13,489	21,197	0.6	12,718
Hired Labor	36,535	1.0	36,535	39,441	1.0	39,441	37,188	1.0	37,188
Net Profit	154,123		188,862	228,992		269,474	79,633		102,416
Total(Kyat/ac)	154,123		188,862	228,992		269,474	79,633	0.00	102,416

Table 3.1.35 Cost and Benefit of Crops (Black-gram) per Ace / Season

	Area not changed													
Year	W/O P	W/P	Increment											
2017	11,060,848,967	11,771,412,456	710,563,489											
2018	11,060,848,967	12,481,975,945	1,421,126,978											
2019	11,060,848,967	13,192,539,435	2,131,690,468											
2020	11,060,848,967	13,903,102,924	2,842,253,957											
2021	11,060,848,967	14,613,666,415	3,552,817,448											

Table 3.1.36 Crop: Black-gram (Financial Price) (Estimation)

	- 4	Without Project:			2015			2017	- 0		2018		The same of the sa	2019			2020	
Activities	Position Position	Mindle Position	Position	Position	Rosdon Rosdon	Joseph Position	Position .	Position	Position	Position	Marale Position	Litret Position	Position	Aeddie Position	Dostron	00000 Pospon	Position	Lower Position
North Nawin	3,587.23	5,342.19		722 Jan 1	Diam'r.	-			-	- 100	1 30 374 5			- 1	-	- 28/8/12/	10101211	
(A) Gross Profit	897, 406, 567	1,752,238,320	- 2			-			-						1			
(B) Procution Cost									-									
Input Cost	138,768,405	198,120,458				-			-						1			
Family Labor	74 704 065	120,097,773																
Hired Labor	131 059 448	210.701 315				-			1									
(C)Net Profit	552 874 649	1 223 318 773	- 6						1			1						
Total(Kyat/ac)	552,874,649	1,223,318,773		601,527,618	1,223,318,773		650,180,587	1,223,318,773	-	698,833,556	1,223,318,773		747,486,525	1,223,318,773	7	796,139,495	1,223,318,773	
South Nawin	9,277.67	1,807.69	3,167.51															
(A) Gross Profit	2,320,986,871	592,922,320	486 193 780															
(B) Procution Cost		- 5																
input Cost	358.897 386	67 039 191	49 020 385			1			1			1					-	
Family Labor	193,207 478	40,638 679.	67 141 709									- 12						
Hired Labor	338,959,673	71,297,101	117,793 362															
(C)Net Profit	1,429,902,334	413,946,549	252 238 324										· · · · · · · · · · · · · · · · · · ·		Contract of the Contract of th			
Total(Kyat/ac)	1,429,902,334	413,946,549	252 238 324	1,555,733,739	413,946,549	327,909,821	1.681,565,145	413,946,549	403,581,318	1,807,396,550	413,946,549	479,252,816	1,933,227,956	413,946,549	554,924,313	2,059,059,361	413,946,549	530 595 910
Wegyi	15,964.75	5.221.16	2 492 46															
(A) Gross Profit	3. 193.853.613	1 712-510.480	382 577 655															
(B) Procution Cost									1									
Input Cost	61 7 580, 399	193,631 940	38 573.311										P - 7					
Family Labor	332,465,919	117 376,898	52 832 675												-			
Hired Labor	583.272.141	205. 927 772	92 689 602															
(C)Net Profit	2 460,535 164	1 195,603 870	198 482 (67											The same of			Annual III	
Total(Kyat/ac)	2,410 535 164	1 195 #03.970	198 482 (167	2,677,062,258	1,195.603,870	258,026,687	2.893,589,353	1,195,603,870	317,571,307	3,110,116,447	1,195,603,870	377,115,927	3,326,643,542	1,195,603,870	436,660,547	3,543,170.636	1,195,603,870	496,205,168
Taung Nyo	7,507.30	8,305.30	3,454 00															
(A) Gross Profit	1,878,078,719	2,724,138,400	530, 168 276															
(B) Procution Cost	1					7												
nput Cost	290 412 393	308 0 10 356	53 454 104															
Family Labor	15 F. 339, 523	185.711.449	73.714 438						1				72					
Hired Labor	274 279 208	327 569 337	128 447 352															
(C)Net Profit	1 157 047 597	1 901 847 258	275 05 382										- N		-			
Total(Kyat/ac)	1 157 047 597	1 901 847 259	275,052,382	1,258,867,786	1,901,847,258	357,568,097	1,360,687,974	1,901,847,258	440,083,811	1,462,508,163	1,901,847,258	522,599,526	1,564,328,351	1,901,847.258	605,115.240	1,666,148,540	1,901,847,258	897 838 955
Incremental Achievement					20%		40%			60%			80%			100%		
Grand Total	5 500 350 744	4 734 716 450	725 772 773	E 093 191 401	4 734 7#E 450	943 504 605	6 586 023 059	1 734 716 253	1.181.238.436	7 079 954 718	# 714 716 450 I	1 378 939 260	7 571 686 374	£ 734 755 456	1 595 700 100	4 05 4 5 19 0 32	4 734 716 450	1 812 431 431

Table 3.1.37 Crop: Black-gram (Economic Price) (Estimation)

Year	W/O P	W/ P	Increment
2017	13,319,784,475	14,203,724,256	883,939,781
2018	13,319,784,475	15,087,664,038	1,767,879,563
2019	13,319,784,475	15,971,603,822	2,651,819,347
2020	13,319,784,475	16,855,543,604	3,535,759,129
2021	13,319,784,475	17,739,483,385	4,419,698,910

Table 3.1.38 Crop: Black-gram (Economic Price) (Estimation)

	1	Without Project			2017			2018			2019			2020			2021	
Activities	Upper Posnon	Middle Pouson	Lower Position	Upper Position	Naddle Position	Lower Position	Upper Position	Pasison	Lower Position	Upper Position	Fosison	Lower Position	Upper Position	Nacide Position	Lower Position	Upper Position	Middle Position	Lower Position
North Navin	3 58 7 23	5 342 19				-			-									
(A) Gross Profit	960 226 139	1 874 895 002	1.0						1-									
(B) Procution Cost						1			1.4									
input Cost	1 (16 852 820	152,551 578																
Family Labor	44 822,439	120,097 773	-			-			- 4				4			1		
Hired Labor	131 059 448	210,701 316				-			-34									
(C)Net Profit	677 491 432	1 391 544 335	-			3	7											
Total(Kyat/ac)	677 491 432	1 391 544 335	-	737 110 678	1 391,544 335		796 729 924	1 391 544,335	-	856 349 170	1 391 544 335		915 968 416	1 391 544 335	1	975 587 #62	1 391 544 335	
South Nawin	9 277 67	1,807 69	3 167 51															
(A) Gross Profit	2 483 437 428	534 426 882	520 228 67 5															
(B) Procution Cost																		
Input Cost	276 353 956		37 747 217															
Family Labor	115 924 487		40 284 392															
Hired Labor	338 959 673	71,297 101	117 793 362										1					
C)Net Profit	1 752, 199, 312	487 125 455	324 403 704															
Total(Kyat/ac)	1 752,199 312	487 125,455	324 403,704	1 906 392 851	487 125 455	421 724 815	2,060,586,391	497 125 455	519 045 926	2 214 779 930	487 125 455	6 16 367 038	2 368 973 470	487 125 455	713 688 149	2 523 167 009	487 125 455	811,009,260
Wegyi	15 964 75	5,221 18	2 492 46															
(A) Gross Profit	4 273,428 315	1,832 418 314	409,359 138															
(B) Procution Cost							-											
Input Cost	475,542,008		29 702 646															
Family Labor	199 479 551		31699.106			34												
Hired Labor	583 272 141	205,927 772	92,689,602										1					
(C)Net Profit	3 015 134 615	1 406 966 870	255,267 784															
Total(Kyat/ac)	3 015 134 615	1 406 966 87.0	255,267 784	3 280 466 461	1 406 966 870	331 848 119	3 545 798 307	1 406 966,870	408.428.454	3 811 130 153	1 406 966 870	485 008,790	4 076 461 999	1 406 966 870	561,589,125	4 341 793,846	1 406 966 870	638,169 460
Taung Nyo	7 5 0 7 30	8 305 30	3 454 00															- 3
(A) Gross Profit	2,009 546 557	2,914 828,088	567,281 506										T T					
(B) Procution Cost																		
input Cost	223,619 945	237 166 147	41 161 318															
Family Labor	93 803 714		43 927 972													-0		
Hired Labor	274 279 206		128 447 352				1											
(C)Net Profit	1 417 843 692	2 238 062,412	353 744 864		The same of													
Total (Kyat/ac)		2 238 062,412	353 744 864	1 542 513 937	2,238,062,412	459 868 323	1 867,384,182	2,238,062,412	565 991 762	1,792,154,427	2,238,062,412	672.115,242	1 916 924 672	2 238,062 412	778, 238, 701	2 041 894 916	2 238,062 412	884,362 160
Increment	al Achievement				20%			40%		-	60%			80%			100%	
Grand Total	E 962 E60 061	5 523 699 072	933 416 352	7 455 583 527	6 832 600 823	1 213 441 257	8.070.498.804	5 523 699 072	1.493.466.162	8 674 413 680	5 523 699 072	1 772 401 070	9 2 78 328 557	5 523 699 072	2 063 515 975	9 882 743 433	5 523 699 072	2 333 540 880
Grand Lotal	# 862, #69 US1	3.363.099.072	933 415 352	7,400 583 927	2,323,699,072	1 213 441 257	0,010,456,804	0,023 699 072	1,490,466,162	D.D.F. 414 180	5 523 699 072	1 773 491 070	9 2 10,328,557	2.352.038.015	£ 00a 515 975	9 882 243 433	3.343 699,072	6,233,540,880

Table 3.1.39 Project Cost Estimation (Financial / Economic) -Base 4 (Estimate of Road Benefit only)

			2014	年			2015	年			20 9	作曲			20174				201	3年	
		Finan			13	Finan				Finad	46.1			Enanço		1		Financ			
		FC	LC.	Conversion Factor	Economic	EC	Lc	Conversion Filetor	Economic	FC FC	Œ	Eactor Factor	Economic .	FE	LC.	Conversion Factor	Economic	PO.	ië.	Conversion Factor	Economy
North N	awın	345.605		1.00	343.605	109.342		100	109,342	163.737		1497	153 3	-			-	-	-		
	Laust	1	210,722	-	188,300		75(.204		309,900	1	140,482		122 200	-	G		-	-	-	-	
te	Matemal		100,427	0.99	99,423		187-383	/// 99	163/706		16.24	0.99	35,282				-		-	-	
	Skilled Labor		44,250	1.00	41.750			1,00	73,750		2500	1.00	29.500	-			-	-			
	Unstalled Labor		66,045	0.60	99,67	1	110/074	/0/66	66,04+		(4,00)	3.60	36.418			- 1	-				
South N	awin	37,714		1.00	zķi —a	479,623		1.663	-79,637	(V) 328		1,900	191849					-	-		
	Total		478,491	-	113,339	3	484.068		402.230		785.62		160 892			1	-	4	+	-	
LC	Material	-	149901	N 99	127,652	- 1	UN067	0.99	212718		35,846	3.99	85/483	-		4		3	-		
24	Siglled Labor		42024	100	59.981		96,013	190	99,979		(9.46)	100	39,992	-			-	-	-		
	Enskilled Labor	4	89,332	0.60	50,7%		179.322	0.60	89,527		59,639	0.60	35-813	-				-		-	
Weg	у									253,291		1.00.	3 13 2 11	107 569		1.00	622,052	48,802		/ 00	348,931
	Total					1					375,933		3 3 241		259,896		92,950		723,959	3	197,180
	Material	-4		1			- 0				(×45)	9.99	151,283		192612	0.99	189 696	- 1	1177/05	0.99	115,875
LC	Siglied Labor			-							64.10	100	64.340		107.24	100	107.234		4239	1.00	+2.693
	Enskided Labor						-				96,010	960	4,618		160,050	960	96 330		54:020	460	38.410
Taung	Nyo					- 1			1	194.736		1.00	96 26	494,580		1001	194 :60	(97,32).		100	197,874
	Total					- 1					7,26,971	-	226 455		128,202		3/7/42*		11,731		150,970
	Material			1	7		- 1		1		11-15	1)99	134/1/26		325814	0,99	-2		20_6	11.99	89,351
LC	Sailled Labor					1					12.762	100	8 162		6)20	100	86:370		244	1,00	32,506
	Unskilled Labor										72.714	9.60	3 66		171,398	100			16,519	4.60	39,111
Sub Total(FC-LC)	533,379	#89.16J		958,018	318,965	815,211		1,596,695	1,025,467	913,963		1,908,351	1,116,629	952(198		1,987,006	126 651	395,239		794,801
Machine	anes	411.462		1.00	413)463	620,(97															
Procure					-2.80	1	.16.337	0.99	89,274					-		#	- 5		-		
Engineering	Serves					-					-								- 3		
Engineering S						198, 207		1,540	198,407								-	-			
Engineering 3	51VC-1,DC-1			-		1301401	51,521	0.99	50,517											-	
Engineming 5	CONTRACTOR VIEW					79,847	31444	1906	19.84	79,847		1.00	.79 847	79,847		100	79.841	19.84 1		100	79817
cagarenas 2	muce (av.)	-			_	2.04	780.533	0.99	20 328	7,54	20,533	999	20,328	/9,64/	20 533	399	20,328	17,041	20 533	0.99	20,328
							.00,233	.0.99	20.326	-	20,533	3.99	20,528	- 4	20 333	399	20,526		20 333	439	20220
Tnu	4	916.841	499,500		1,381 114	11767,417.	£25,609		1.70-10-	1/(05/410)	939,501	1	_008.576	1,196,476	1,008.631		3187,(8)	376.198	415,172		894,9 6
Physical Contingency	5%	47,342	24.975		69 086	89 3 TO 600	41,280,450		8*,35*,200	55,270,500	46.9 75.0 %0		100,426,300	59,813,800	39,431 550		114,3 59.1150	26,324,900	20 788 600		44 748.800
Project Management (FC+LC)	18%	55,338	48,916		95,80	88,896,500	KL527 700		9,669 900	100,356300	91 890 800		190 835 100	111.662 900-	98,409,800		198 700 500	14 66 = 100	39,523,900		74,480.100
Sun Total	-	1.047,521	573,591		1,546 603	1,965,6 9.100	948,416.650		1,952.128-100	1,363,23*	1978,372		3-399,787-400	1,367,962.700	1,152,672,350		2,390 240 650	597, 488 000	u.16,664.500		1/019/204 906
3 and Total FC*LC			1626812				±,9 ₁+ 096				2,34160	1			2,325,835,050				1,073,972,500		
OSM	93%					2,841	1,499		1,145,142	8,302.759	3,975,321		9,266 454	11,518.989	6, 93.820		15/297/032	45,68 4)1	9 8 19 723		ZE-559-575
17231	7.50					-10-12	-489		180,004	1 diamental	WHO WAS	1	2,679,344	1100000	0, 22,000		10,000,000	151500 741	202,00		

Table 3.1.40 Project Cost and Benefit Estimation -Base 4 (Estimate of Road Benefit only)

Particulars implementation 1 Civil & Structure Construction 1.1 North Nawin		FC/LC	Total	Ratio, %	2014	2015	2016	2017	2018	2019	2020	Remarks
1 Civil & Structure Construction												
1,1 North Naw n												
		FC	818 684 000	54	245,605,000	409.342.000	163,737,000					
		LC	702 408 000	46	210,722 000	351,204,000	140,482,000					
		(unskilled labors)	220 149 000	31	66,045,000	110,074,000	44,030,000					
		Sub Total (FC+LC)	1,521,092,000	100	456,327,000	760 546 000	304,219,000	0				
1.2 South Nawin		FC	959,246,000	51	287.774.000	479,623,000	191.849.000					
		LC	928 136,000	49	278,441,000	464,068,000	185,627,000					
<u> </u>		(unskilled labors)	298,444,000	32	89.533.000	149.222.000	59,689,000					
Care All		Sub Total (FC+LC)	3,019,812,000	100	566,215,000	943,691,000	1,509,906,000	0				<u> </u>
1.3 Wegyl		FC	1.244,137,000	53			373.241.000	622,069,000	248,827,000			
<u> </u>		LC	1,119,792,000	47			335,938,000	559,896,000	223,958,000			
		(unskilled labors)	320,100,000	29		- \	96.030.000	160,050,000	64,020,000			
		Sub Total (FC+LC)	3,782,288,000	100			709,179,000					
1.4 Taung Nyo		FC	989,120,000	54		-	296,736,000	494 560 000	197,824,000			
		LC	856,404,000	46			256,921,000	428,202,000	171,281,000			
		(unskilled labors)	242,596,000	28			72,779,000	121,298,000	48,519,000			
		Sub Total (FC+LC)	1,845,524,000	100			553,657,000		369,105,000			
Total of Civil & Structure Construction		FC	4,011,187,000	53	533,379,000	888 965 ,000	1,025,563,000		446,651,000			
		LC	3,606,740,000	47	489,163,000	815,272,000	918,968,000	988,098,000	395,239,000			
		(unskilled labors)	1,081,289,000	30	155,578,000	259,296,000	272,528,000	281,348,000	112,539,000		-	
	3	Total (FC+LC)	7 617 927 000	100	1,022,542 000	1,704,237,000	1,944,531,000	2.104 727 000	841,890,000			Machineries cost
2. Machineries Procurement		FC	15,819,165,004	100	4 13,462,002	620,193,002					5,914,204,000	8.871,306,000
		LC	10,336,550	0		10,336,550						147.855,10
		Total (FC+LC)	15,977,356,654	100	4 13,462 002	630 529 552	0	0			5,914,204,000	9,019,161,10
5. Engineering Service			0).				
5.1 Engineering Service (DD)		FC	198.407.376	80		198,407,376						
		LC	51,021,996	20		51,021,996						
		Total (FC+LC)	249 429 372	100		249 429 372		0				
5.2 Engineering Service (SV)		FC	319,388,028	80		79 847 00 7	79,847,007	79 847 007	79,847,007			
		LC	82,133,064	20		20 533 266	20,533 266	20.533.266	20,533,266			
		Total (FC+LC)	401.521.096	100		100,380,274	100,380,274	100 380,274	100.380.274			
		2.51										
1.1 Total of 1, 2, 5 (FC)	-	FC	5 562 637 408	60	946,841,002	1 787 412 385	1,105,410,007	1,196,476,007	526,498,007		+	
1.2 Total of 1, 2, 5 (LC)		LC	3,729,698,344	40	499,499,550	886.827,262	939,501,266		395,239,000		-	
1.3 Total of 1, 2, 5 (Unskilled Labors)		(unskilled labors)	1,081,289,000	29	155,578,000	259,296,000	272,528,000	281,348,000	112,539,000			
1.4 Total of 1, 2, 5 (Grand Total)		Total (FC+LC)	9,292,335,752	100	1,446,340,552	2,674,239,647	2,044,911.273	2,205,107,273	921,737,007			
2.1 Physical Contingency (5% of 1.1)	5%	FC	278 131 869	60	47,342,050	89,370,619	55,270,500	59,823,800	26,324,900			
2.2 Physical Contingency (5% of 1.2)	5%	LC	186,484,917	40	24,974,978	44,341,363	46,975,063	50,431,563	19,761,950			
2.3 Physical Contingency (5% of 1.3)	5%	(unskilled labors)	54,064,450	29	7,778,900	12,964,800	13,626,400	14,067,400	5,626,950			
2.4 Physical Contingency (5% of 1.4)	5%	Total (FC+LC)	464,616,788	100	72,317,028	133,711,982	102,245,564	110,255,364	46,086,850			
3 1 Total of 1 1 & 2.1		FC	5,840,769,277	60	994,183,052	1,876,783,004	1,160,680,507	1,256,299,807	552,822,907			
3.2 Total of 1.1 & 2.2	7	LC	3,916,183,261	40	524,474,528	931,168,625	986,476,329	1,059,062,829	415,000,950			
3 3 Total of 1 1 & 2 3		(unskilled labors)	1,135,353,450	29	163,356,900	272,260,800	286,154,400	295,415,400	118,165,950			
3.4 Total of 1.1 & 2.4		Total (FC+LC)	9,756,952,540	100	1,518,657,580	2,807,951,629	2,147,156,837	2,315,362,637	967,823,857			
18 111	4000		704 700 700	100	100.05.1	470 400 7	40.4.450	010 170	0.1.300.5			
4 Project Management (10% of 1)	10%	LC	761,792,700	100	102,254,200	170,423,700	194,453 100	210,472,700	84,189,000			-
5 Others (Miscellaneous, 5% of 1-2)	5%	LC	402,086,278	100	71,800.200	85,728,678	97,226,550	105,236,350	42,094,500			
6.1 Grand Total Cost for Project Evaluation		FC	5.840,769,277	53	994,183,052	1,876,783,004	1,160,680,507	1,256,299,807	552,822,907			
6.2 Grand Total Cost for Project Evaluation	-	LC									-	
6.3 Grand Total Cost for Project Evaluation	-		5,080,062,239	47	698,528,928	1.187.321,003	1,278,155,979		541,284,450			
3.3 Grand Total Cost for Project Evaluation		Total (FC+LC)	10,920,831,516	100	1,692,711,980	3,064,104,007	2,438,836,486	2,631,071,686	1,094,107,357			
7. Operation and Maintenance	0.30%	LC				4,308,012	11,312,312	17,145,905	19,152,074			25,985,756

Road Improvement								
1 North Nawin								
1,1,1 Monsoon Paddyfor threshing	- t							
(a) Area Improved (ac)		0	0	0	0	0		
(b) Cost before Rehabilitation (kt)		0	0	0	0	0		
(c) Cost after Rehabilitation (Kt)		0	0	0	0	0		
	-		0					
(d) Net Profit (Kt)		0	U	0	0	0		
1 1.2 Summer Paddy for threshing								
(a) Area Improved (ac)		2,998 44	1,110 53	1,110.53	1,110.53	1,110 53	1,110 53	
(b) Cost before Rehabilitation (kt)		179,906,400	66,631,800	66,631,800	66,631,800	66 631,800	66,631,800	
(c) Cost after Rehabilitation (Kt)		63,515,955	23,524,357	23,524,357	23,524,357	23,524,357	23,524,357	
(d) Net Profit (Kt)		116,390,445	159,497,888	159,497,888	159,497,888	159,497,888	159,497,888	
1.1.3 Improvement of Trollergyi Driving Condition								
(a) Monsoon Paddy Cultivation (kyat)		9,551,109	3,537,447	0				
(b) Summer Paddy Cultivation (kyat)		1,688,122	625,228	0				
(c) Black Gram Cultivation (kyat)		12,939,351	4,792,358	0				
(d) Accumulation above (kyat)		24,178,582	33,133,615	33,133,615	33,133,615	33,133,615	33,133,615	
.2 South Nawin		24,176,362	03,133,013	33,133,912	33,133,913	33,133,013	33,133,013	
1.2.1 Monsoon Paddy								
(a) Area Improved (ac)		0	0	0	0	0		
(b) Cost before Rehabilitation (kt)		0	0	0	0	0		
(c) Cost after Rehabilitation (Kt)		0	0	0	0	0		
(d) Net Profit (Kt)		0	0	0	0	0		
1.2.2 Summer Paddy								
(a) Area Improved (ac)		2,245.49	1,464.45	1,464.45	1,464.45	1,464.45	1,464.45	
(b) Cost before Rehabilitation (kt)		134,729,400	87,867,000	87,867,000	87,867,000	87,867,000	87,867,000	
(c) Cost after Rehabilitation (Kt)		47,566,215	31,021,444	31,021,444	31,021,444	31,021,444	31,021,444	
(d) Net Profit (Kt)		87,163,185	144,008,741	144,008,741	144,008,741	144 008 741	144,008,741	
		87,103,183	144,000,441	144,000,141	144,000,741	147,000,741	141,000,441	
1.2.3 Improvement of Trollergyi Driving Condition								
(a) Monsoon Paddy Cultivation (kyat)		13,488,602	8,796,914	0				
(b) Summer Paddy Cultivation (kyat)		1.264,211	824,485	0				
(c) Black Gram Cultivation (kyat)		28 326,064	18,473,520	0				
(d) Accumulation above (kyat)		43,078,877	71,173,796	71,173,796	71,173,796	71,173,796	71,173,796	
,3 Wegyi								
1.3.1 Monsoon Paddy								
(a) Area Improved (ac)				13,413.39	5,412.42	0.00	0.00	
(b) Cost before Rehabilitation (kt)				934,966,937	377,267,324	0	0	
(c) Cost after Rehabilitation (Kt)				284 135 840	114.651.293	0	0	
(d) Net Profit (Kt)				650,831,097	913,447,128	913,447,128	913,447,128	
1.3.2 Summer Paddy				030 03 1,037	3 3 447 120	3 (3/447,120	3 13 144 / 1/20	
				*****	F 400 FF	4 000 04	2.22	
(a) Area Improved (ac)				772 64	5,420.55	1,602 9 1	0.00	
(b) Cost before Rehabilitation (kt)				46,358,400	325,233,000	96,174,600	0	
(c) Cost after Rehabilitation (Kt)				16,366,833	114,823,511	33,954,443	0	
(d) Net Profit (Kt)				29,991,567	240,401,056	302,621,213	302,621,213	
1.3.3 Improvement of Trollergyi Driving Condition			111					
(a) Monsoon Paddy Cultivation (kyat)				7,551,739	3,047,192	30,618,220		
(b) Summer Paddy Cultivation (kyat)				434,996	3.051,770	5,878,593		
(c) Black Gram Cultivation (kyat)				10,348,045	4,175,529	3,458,976		
(d) Accumulation above (kyat)			- 1	18,334,780	28,609,271	68,565,060	68,565,060	
4 Taung Nyo				10,001,700	20,000,271	000,000,000	30,000,000	
1.4.1 Monsoon Paddy								
				16 400 70	10.022.50	0.00	0.00	
(a) Area Improved (ac)				16,499.76	10,233.56	0.00	0.00	
(b) Cost before Rehabilitation (kt)				1,150,099,271	713,320,066	0	0	
(c) Cost after Rehabilitation (Kt)				349,514,416	216,777,501	0	0	
(d) Net Profit (Kt)				800,584,855	1,297,127,420	1,297,127,420	1.297,127,420	
1.4.2 Summer Paddy								
(a) Area Improved (ac)				1,324.97	1,156.76	0 00	0.00	
(b) Cost before Rehabilitation (kt)				79,498,200	69 405 600	0	0	
(c) Cost after Rehabilitation (Kt)				28.066.840	24,503,647	0	0	
(d) Net Profit (Kt)	<u> </u>			51.431.360	96,333,313	96,333,313	96,333,313	
1,1.3 Improvement of Trollergyi Driving Condition			-	J 1243 12000	20,000,010	20,233,213	20,000,010	
				0.000.007	E 701 404			
(a) Monsoon Paddy Cultivation (kyat)				9.289,365	5,761,494	0		
(b) Summer Paddy Cultivation (kyat)				745,958	651,256	0		
(c) Black Gram Cultivation (kyat)				19,507,666	12,099,138	0		
(d) Accumulation above (kyat)				29,542,989	48,054,877	48,054,877	48,054,877	
Sub-total of Road Improve Beneft (kt)		270,811,089	407,814,040	1,988,530,688	3,031,787,105	3,133,963,051	3,133,963,051	
Total (Base Case, Financial)		270,811,089	407,814,040	1,988,530,688	3,031,787,105	3,133,963,051	3,133,963,051	

Table 3.1.41 Project Benefit Estimation -Base4 (Estimate of Road Benefit only)

Benefit		2016			2017			2018		2019			
. Road Improvement	Financial cost	Conversion	Economic cost	Financial cost	Conversion	Economic cost	Financial cost	Conversion	Economic cost	Financial cost	Conversion	Economic cost	
1.1 North Nawin	Financial cost	Factor	Economic cost	r mancial cost	Factor	Economic cost	rinanciai cost	Factor	Economic cost	Financial cost	Factor	Economic cos	
1.1.1 Monsoon Paddy													
(a) Area Improved (ac) (b) Cost before Rehabilitation (kt)													
(c) Cost after Rehabilitation (Kt)													
(d) Net Profit (Kt)													
1.1.2 Summer Paddy											-		
(a) Area Improved (ac)	2,998		2,998	1,111		1,111	1,111		1.111	1,111		1.11	
(b) Cost before Rehabilitation (kt)	179,906,400	0.99	178, 107, 336	66,631,800	0.99	65,965,482	66,631,800	0.99	65,965,482	66,631,800	0.99	65,965,48	
(c) Cost after Rehabilitation (Kt)	63,515,955	0.99	62,880,795	23,524,357	0.99	23,289,113	23,524,357	0.99	23,289,113	23,524,357	D.99	23,289,11	
(d) Net Profit (Kt)	116,390,445		115,226,541	159,497,888		157,902,910	159,497,888		157,902,910	59,497,888		157,902,91	
1.1.3 Improvement of Trollergy Driving													
(a) Monsoon Paddy Cultivation (kyat)	9,551,109	0.99	9,455,598	3,537,447	0.99	3,502,073							
(b) Summer Paddy Cultivation (kyat)	1,688,122	0,99	1,671,241	625,228	0.99	618,976							
(c) Black Gram Cultivation (kyat)	12,939,351	0.99	12,809,957	4,792,358	0.99	4,744,434							
(d) Sub-total of Trollergyi Driving (kyat)	24,178,582		23,936,796	8,955,033		8,865,483			0				
(e) Accumulation of Trollergyi (kyat)	24,178,582		23,936,796	33, 133,615		32,802,279	33,133,615		32,802,279	33,133,615		32,802,27	
1.2 South Nawn 1.2.1 Monsoon Paddy													
(a) Area Improved (ac)													
(b) Cost before Rehabilitation (kt)													
(c) Cost after Rehabilitation (Kt)													
(d) Net Profit (Kt)													
1.2.2 Summer Paddy													
(a) Area Improved (ac)	2,245		2,245	1,464		1,464	1,464		1,464	1,464		1,46	
(b) Cost before Rehabilitation (kt)	134,729,400	0.99	133,382,106	87,867,000	0.99	86,988,330	87,867,000	0.99	86,988,330	87,867,000	0.99	86,988,33	
(c) Cost after Rehabilitation (Kt)	47,566,215	0.99	47,090,553	31,021,444	0.99	30,711,230	31,021,444	0,99	30,711,230	31,021,444	0.99	30,711,23	
(d) Net Profit (Kt)	87,163,185		86,291,553	144,008,741		142,568,653	144,008,741		142,568,653	144,008,741		142,568,65	
1 2.3 Improvement of Trollergyi Driving													
(a) Monsoon Paddy Cultivation (kyat)	13,488,602	0.99	13,488,602	8,796,914	0.99	8,708,945	0	0.99	0			,	
(b) Summer Paddy Cultivation (kyat)	1,264,211	0.99	1,251,569	824,485	0.99	816,240	0	0.99	0				
(c) Black Gram Cultivation (kyat)	28,326,064	0.99	28,042,803	18,473,520	0.99	18,288,785	0	0.99	0				
(d) Sub-total of Trollergyl Driving (kyat)	43,078,877		42,782,974	28,094,919		27,813,970	0		0				
(e) Accumulation of Trollergyi (kyat)	43,078,877		42,782,974	71,173,796		70,596,944	71,173,796		70,596,944	71,173,796		70,596,94	
1.3 Wegyı													
1.3.1 Monsoon Paddy (a) Area Improved (ac)				13,413		13,413	5,412		5,412	5,412		5,41	
(b) Cost before Rehabilitation (kt)				934,966,937	0.99	925,617,268	377,267,324	0.99	373,494,651	377,267,324	0.99	373,494,65	
(c) Cost after Rehabilitation (Kt)				284, 135,840	0.99	281,294,482	114,651,293	0.99	113,504,780	114,651,293	0.99	113,504,78	
(d) Net Profit (Kt)				650,831,097		644,322,786	913,447,128		904,312,657	913,447,128	30,986	904,312,65	
1.3.2 Summer Paddy													
(a) Area Improved (ac)				773		773	5,421		5,421	1,603		_1,60	
(b) Cost before Rehabilitation (kt)				46,358,400	0.99	45,894,816	325,233,000	0.99	321,980,670	96, 174,600	0.99	95,212,85	
(c) Cost after Rehabilitation (Kt)				16,366,833	0.99	16,203,165	114,823,511	0.99	113,675,276	33,954,443	0.99	33,614,89	
(d) Net Profit (Kt)				29,991,567		29,691,651	240,401,056		237,997,045	302,621,213		299,595,00	
1.1.3 Improvement of Trollergyi Driving													
(a) Monsoon Paddy Cultivation (kyat)				7,551,739	0.99	7,476,222	3,047,192	0.99	3,016,720	30,618,220	0.99	30,312,03	
(b) Summer Paddy Cultivation (kyat)				434,996	0.99	430,646	3,051,770	0.99	3,021,252	5,878,593	0.99	5,819,80	
(c) Black Gram Cultivation (kyat)				10,348,045	0.99	10,244,565	4,175,529	0.99	4, 133,774	3,458,976	0.99	3,424,38	
(d) Sub-total of Trollergyi Driving (kyat) (e) Accumulation of Trollergyi (kyat)			-	18,334,780 18,334,780		18, 151,433 18, 151,433	10,274,491 28,609,271		10, 171,746 28,323,179	39,955,789 68,565,060		39,556,23 67,879,41	
1.4 Taung Nyo		H-1		10,334,780		40, 100,433	20,009,271		20,323,179	00,000,000	C	67,679,43	
1.4.1 Monsoon Paddy													
(a) A rea Improved (ac)				16,500		16,500	10,234		10,234	10,234		10,23	
(b) Cost before Rehabilitation (kt)				1, 150,099,271	0.99	1,138,598,278	713,320,066	0.99	706, 186, 865	713,320,066	0.99	706,186,86	
(c) Cost after Rehabilitation (Kt)				349,514,416	0.99	346,019,272	216,777,501	0.99	214,609,726	216,777,501	0.99	214,609,72	
(d) Net Profit (Kt)				800,584,855	71000000	792,579,006	1,297,127,420	3.95	1,284,156,145	1,297,127,420		1,284,156,14	
1.4.2 Summer Paddy													
(a) Area Improved (ac)				1,325	-76-76-7	1,325	1,157	77,11774	1, 157	1,157			
(b) Cost before Rehabilitation (kt)				79,498,200	0.99	78,703,218	69,405,600	0.99	68,711,544	69,405,600	0.99	68,711,54	
(c) Cost after Rehabilitation (Kt)				28,066,840	0.99	27,786,172	24,503,647	0.99	24,258,611	24,503,647	0.99	24,258,61	
(d) Net Profit (Kt)				51,431,360		50,917,046	96,333,313		95,369,979	96,333,313	7790 7330000	95,369,97	
1.3.3 Improvement of Trollergyi Driving					550			0-21			2,53		
(a) Monsoon Paddy Cultivation (kyat)				9,289,365	0.99	9, 196,471	5,761,494	0.99	5,703,879	5,761,494	0,99	5,703,87	
(b) Summer Paddy Cultivation (kyat)				745,958	0,99	738,498	651,256	0.99	644,743	651,256	0.99	644,74	
(c) Black Gram Cultivation (kyat)				10.005		0.001	0.440		0.040	0.110 ===		0.01	
(d) Sub-total of Trollergyl Driving (kyat)				10,035,323		9,934,969	6,412,750		6,348,622	6,412,750		6,348,62	
(e) Accumulation of Trollergyi (kyat)				10,035,323		9,934,969	16,448,073		16,283,591	16,448,073	-	16,283,59	
Sub-total of Road Improve Beneft (kt)	270,811,089		268.237.864	1,969,023,022		1,949,467,677	3,000,180,301		2,970,313,382	3,102,356,247		3,071,467,56	
Total (Base Case Financial)	270 811 089		268,237,864	1 969 023 022		1.949.467.677	3 000 180 301		2.970.313.382	3 102 356 247		3.071.467.56	

Table 3.1.42 Financial Cost and Benefit Analyses Base 4 (Estimate of Road Benefit only)

						FIRR =	32.9%		B/C =	2.45	
Year		Cost (kyat)		Benefit	Benefit -Cost	Present	Present	Value	Present	Present	Value
Teal		Cost (Kyat)		(kyat)	(kyat)	Value Factor	Discout Rate	32.9%	Value Factor	Discout Rate	12.0%
	Investment	O & M	Total	Total			Cost	Benefit		Cost	Benefit
1	1,620,912,000		1,620,912,000	0	-1,620,912,000	0.75245	1,219,655,234	0	0.89286	1,447,247,488	0
2	2,914,096,000	4,340,000	2,918,436,000	270,811,089	-2,647,624,911	0.56617	1,652,330,910	153,325,114	0.79719	2,326,547,995	215,887,892
3	2,341,610,000	12,178,086	2,353,788,086	1,969,023,022	-384,765,064	0.42602	1,002,760,800	838,843,188	0.71178	1,675,379,284	1,401,511,207
4	2,525,835,050	18,312,819	2,544,147,869	3,000,180,301	456,032,432	0.32055	815,526,599	961,707,795	0.63552	1,616,856,854	1,906,674,585
5	1,073,572,500	24,928,140	1,098,500,640	3,102,356,247	2,003,855,607	0.24120	264,958,354	748,288,327	0.56743	623,322,218	1,760,370,005
6		24,928,140	24,928,140	3,102,356,247	3,077,428,107	0.18149	4,524,208	563,046,635	0.50663	12,629,344	1,571,746,745
7		24,928,140	24,928,140	3,102,356,247	3,077,428,107	0.13656	3,404,187	423,657,769	0.45235	11,276,244	1,403,350,848
8		24,928,140	24,928,140	3,102,356,247	3,077,428,107	0.10275	2,561,366	318,767,104	0.40388	10,067,977	1,252,979,641
9		24,928,140	24,928,140	3,102,356,247	3,077,428,107	0.07732	1,927,444	239,874,185	0.36061	8,989,337	1,118,740,686
10		24,928,140	24,928,140	3,102,356,247	3,077,428,107	0.05818	1,450,319	180,495,086	0.32197	8,026,113	998,865,641
11		24,928,140	24,928,140	3,102,356,247	3,077,428,107	0.04377	1,091,105	135,790,133	0.28748	7,166,342	891,865,374
12		24,928,140	24,928,140	3,102,356,247	3,077,428,107	0.03294	821,133	102,191,615	0.25668	6,398,555	796,312,801
13		24,928,140	24,928,140	3,102,356,247	3,077,428,107	0.02478	617,719	76,876,388	0.22917	5,712,782	710,966,981
14		24,928,140	24,928,140	3,102,356,247	3,077,428,107	0.01865	464,910	57,858,944	0.20462	5,100,796	634,804,135
15		24,928,140	24,928,140	3,102,356,247	3,077,428,107	0.01403	349,742	43,526,058	0.18270	4,554,371	566,800,486
16		24,928,140	24,928,140	3,102,356,247	3,077,428,107	0.01056	263,241	32,760,882	0.16312	4,066,278	506,056,351
17		24,928,140	24,928,140	3,102,356,247	3,077,428,107	0.00794	197,929	24,632,709	0.14564	3,630,534	451,827,164
18		24,928,140	24,928,140	3,102,356,247	3,077,428,107	0.00598	149,070	18,552,090	0.13004	3,241,655	403,430,406
19		24,928,140	24,928,140	3,102,356,247	3,077,428,107	0.00450	112,177	13,960,603	0.11611	2,894,406	360,214,584
20		24,928,140	24,928,140	3,102,356,247	3,077,428,107	0.00338	84,257	10,485,964	0.10367	2,584,300	321,621,272
21		24,928,140	24,928,140	3,102,356,247	3,077,428,107	0.00255	63,567	7,911,008	0.09256	2,307,349	287,154,094
22		24,928,140	24,928,140	3,102,356,247	3,077,428,107	0.00192	47,862	5,956,524	0.08264	2,060,061	256,378,720
23		24,928,140	24,928,140	3,102,356,247	3,077,428,107	0.00144	35,897	4,467,393	0.07379	1,839,447	228,922,867
24		24,928,140	24,928,140	3,102,356,247	3,077,428,107	0.00108	26,922	3,350,545	0.06588	1,642,266	204,383,230
25		24,928,140	24,928,140	3,102,356,247	3,077,428,107	0.00082	20,441	2,543,932	0.05882	1,466,273	182,480,594
26		24,928,140	24,928,140	3,102,356,247	3,077,428,107	0.00061	15,206	1,892,437	0.05252	1,309,226	162,935,750
27		24,928,140	24,928,140	3,102,356,247	3,077,428,107	0.00046	11,467	1,427,084	0.04689	1,168,880	145,469,484
28		24,928,140	24,928,140	3,102,356,247	3,077,428,107	0.00035	8,725	1,085,825	0.04187	1,043,741	129,895,656
29		24,928,140	24,928,140	3,102,356,247	3,077,428,107	0.00026	6,481	806,613	0.03738	931,814	115,966,077
30		24,928,140	24,928,140	3,102,356,247	3,077,428,107	0.00020	4,986	620,471	0.03338	832,101	103,556,652
Total	10,476,025,550	682,962,545	11,158,988,095		74,742,288,739		4,973,492,258	4,974,702,421		7,800,294,031	19,091,169,928
							NPV =	1,210,163		NPV =	11,290,875,897

Table 3.1.43 Economic Cost and Benefit Analyses (Estimate of Road Benefit only)

						E RR =	32.6%		B/C =	2.42	
Year		Cost (kyat)		Benefit	Benefit -Cost	Present Value	Prese	nt Value	Present Value	Preser	nt Value
real		Cost (Kyat)		(kyat)	(kyat)	Factor	Discout Rate	32.6%	Factor	Discout Rate	12.0%
	Investment	O & M	Total	Total			Cost	Benefit		Cost	Benefit
1	1,620,912,000		1,620,912,000	0	-1,620,912,000	0.75415	1,222,410,785	0	0.89286	1,447,247,488	0
2	2,914,096,000	4,340,000	2,918,436,000	268,237,864	-2,650,198,136	0.56874	1,659,831,291	152,557,603	0.79719	2,326,547,995	213,836,543
3	2,341,610,000	12,178,086	2,353,788,086	1,949,467,677	-404,320,409	0.42891	1,009,563,248	836,146,181	0.71178	1,675,379,284	1,387,592,103
4	2,525,835,050	18,312,819	2,544,147,869	2,970,313,382	426,165,513	0.32346	822,930,070	960,777,567	0.63552	1,616,856,854	1,887,693,561
5	1,073,572,500	24,928,140	1,098,500,640	3,071,467,568	1,972,966,928	0.24394	267,968,246	749,253,799	0.56743	623,322,218	1,742,842,842
6		24,928,140	24,928,140	3,071,467,568	3,046,539,428	0.18397	4,586,030	565,057,888	0.50663	12,629,344	1,556,097,614
7		24,928,140	24,928,140	3,071,467,568	3,046,539,428	0.13874	3,458,530	426,135,410	0.45235	11,276,244	1,389,378,354
8		24,928,140	24,928,140	3,071,467,568	3,046,539,428	0.10463	2,608,231	321,367,652	0.40388	10,067,977	1,240,504,321
9		24,928,140	24,928,140	3,071,467,568	3,046,539,428	0.07891	1,967,080	242,369,506	0.36061	8,989,337	1,107,601,920
10		24,928,140	24,928,140	3,071,467,568	3,046,539,428	0.05951	1,483,474	182,783,035	0.32197	8,026,113	988,920,413
11		24,928,140	24,928,140	3,071,467,568	3,046,539,428	0.04488	1,118,775	137,847,464	0.28748	7,166,342	882,985,496
12		24,928,140	24,928,140	3,071,467,568	3,046,539,428	0.03384	843,568	103,938,463	0.25668	6,398,555	788,384,295
13		24,928,140	24,928,140	3,071,467,568	3,046,539,428	0.02552	636,166	78,383,852	0.22917	5,712,782	703,888,223
14		24,928,140	24,928,140	3,071,467,568	3,046,539,428	0.01925	479,867	59,125,751	0.20462	5,100,796	628,483,694
15		24,928,140	24,928,140	3,071,467,568	3,046,539,428	0.01452	361,957	44,597,709	0.18270	4,554,371	561,157,125
16		24,928,140	24,928,140	3,071,467,568	3,046,539,428	0.01095	272,963	33,632,570	0.16312	4,066,278	501,017,790
17		24,928,140	24,928,140	3,071,467,568	3,046,539,428	0.00826	205,906	25,370,322	0.14564	3,630,534	447,328,537
18		24,928,140	24,928,140	3,071,467,568	3,046,539,428	0.00623	155,302	19,135,243	0.13004	3,241,655	399,413,643
19		24,928,140	24,928,140	3,071,467,568	3,046,539,428	0.00470	117,162	14,435,898	0.11611	2,894,406	356,628,099
20		24,928,140	24,928,140	3,071,467,568	3,046,539,428	0.00354	88,246	10,872,995	0.10367	2,584,300	318,419,043
21		24,928,140	24,928,140	3,071,467,568	3,046,539,428	0.00267	66,558	8,200,818	0.09256	2,307,349	284,295,038
22		24,928,140	24,928,140	3,071,467,568	3,046,539,428	0.00201	50,106	6,173,650	0.08264	2,060,061	253,826,080
23		24,928,140	24,928,140	3,071,467,568	3,046,539,428	0.00152	37,891	4,668,631	0.07379	1,839,447	226,643,592
24		24,928,140	24,928,140	3,071,467,568	3,046,539,428	0.00115	28,667	3,532,188	0.06588	1,642,266	202,348,283
25		24,928,140	24,928,140	3,071,467,568	3,046,539,428	0.00086	21,438	2,641,462	0.05882	1,466,273	180,663,722
26		24,928,140	24,928,140	3,071,467,568	3,046,539,428	0.00065	16,203	1,996,454	0.05252	1,309,226	161,313,477
27		24,928,140	24,928,140	3,071,467,568	3,046,539,428	0.00049	12,215	1,505,019	0.04689	1,168,880	144,021,114
28		24,928,140	24,928,140	3,071,467,568	3,046,539,428	0.00037	9,223	1,136,443	0.04187	1,043,741	128,602,347
29		24,928,140	24,928,140	3,071,467,568	3,046,539,428	0.00028	6,980	860,011	0.03738	931,814	114,811,458
30		24,928,140	24,928,140	3,071,467,568	3,046,539,428	0.00021	5,235	645,008	0.03338	832,101	102,525,587
Total	10,476,025,550	682,962,545	11,158,988,095	84,777,937,827	73,887,187,596	3	5,001,341,413	4,995,148,592		7,800,294,031	18,901,224,314
		<u> </u>					NPV =	-6,192,821		NPV =	11,100,930,283

Table 3.1.44 Cases for Sensitive Analysis (SA1)

Case	Cost	Benefit	Base Cost and Benefit	Remarks
SA1 (C+10%)	+10%	No change	Base 1	

						EIRR =	19.9%		B/C =	1.51	
Year		Cost (kyat)		Benefit	Benefit -Cost	Present Value	Preser	nt Value	Present Value	Preser	nt Value
Teal		Cost (Kyat)		(kyat)	(kyat)	Factor	Discout Rate	19.9%	Factor	Discout Rate	12.0%
	nvestment	O & M	Total	Total			Cost	Benefit		Cost	Benefit
1	24,116,403,300		24,116,403,300	0	-24,116,403,300	0.83403	20,113,803,844	0	0.89286	21,532,571,850	0
2	26,243,932,000	63, 150, 000	26,307,082,000	6,684,353,535	-19,622,728,465		18,299,206,239	4,649,636,319		20,971,742,700	5,328,699,795
3	45,684,259,500	141,068,061	45,825,327,561	17,053,505,075	-28,771,822,486	0.58015	26,585,563,785	9,893,590,969		32,617,551,651	12,138,343,842
4	32,560,511,500	256,819,872	32,817,331,372	24,053,704,606	-8,763,626,766	0.48386	15,878,993,958	11,638,625,511	0.63552	20,856,070,434	15,286,610,351
5	25,035,497,300	337,314,933	25,372,812,233	27,165,281,249	1,792,469,016	0.40356		10,962,820,901			
6		337,314,933	337,314,933	27,165,281,249	26,827,966,316	0.33658	113,533,460	9,143,290,363	0.50663		13,762,746,439
7		337,314,933	337,314,933	27,165,281,249	26,827,966,316	0.28072		7,625,837,752	0.45235	152,584,410	12,288,214,973
8		337,314,933	337,314,933	27,165,281,249	26,827,966,316	0.23412		6,359,935,646	0.40388	, ,	10,971,513,791
9		337,314,933	337,314,933	27,165,281,249	26,827,966,316	0.19527	65,867,487	5,304,564,469	0.36061	121,639,138	9,796,072,071
10		337,314,933	337,314,933	27,165,281,249	26,827,966,316	0.16286	54,935,110	4,424,137,704	0.32197	108,605,289	8,746,405,604
11		337,314,933	337,314,933	27,165,281,249	26,827,966,316	0.13583	45,817,487	3,689,860,152	0.28748	96,971,297	7,809,475,053
12		337,314,933	337,314,933	27,165,281,249	26,827,966,316	0.11328	38,211,036	3,077,283,060	0.25668	86,581,997	6,972,784,391
13		337,314,933	337,314,933	27,165,281,249	26,827,966,316	0.09448	31,869,515	2,566,575,772	0.22917	77,302,463	6,225,467,504
14		337,314,933	337,314,933	27,165,281,249	26,827,966,316	0.07880	26,580,417	2,140,624,162	0.20462	69,021,382	5,558,559,849
15		337,314,933	337,314,933	27,165,281,249	26,827,966,316	0.06572	22,168,337	1,785,302,284	0.18270	61,627,438	4,963,096,884
16		337,314,933	337,314,933	27,165,281,249	26,827,966,316	0.05481	18,488,231	1,488,929,065	0.16312	55,022,812	4,431,200,677
17		337,314,933	337,314,933	27,165,281,249	26,827,966,316	0.04572	15,422,039	1,241,996,659	0.14564	49,126,547	3,956,351,561
18		337,314,933	337,314,933	27,165,281,249	26,827,966,316	0.03813	12,861,818	1,035,812,174	0.13004	, ,	3,532,573,174
19		337,314,933	337,314,933	27,165,281,249	26,827,966,316	0.03180	, ,	863,855,944	0.11611	39,165,637	3,154,160,806
20		337,314,933	337,314,933	27,165,281,249	26,827,966,316	0.02652	8,945,592	720,423,259	0.10367	34,969,439	2,816,224,707
21		337,314,933	337,314,933	27,165,281,249	26,827,966,316	0.02212	7,461,406	600,896,021	0.09256	31,221,870	2,514,418,432
22		337,314,933	337,314,933	27,165,281,249	26,827,966,316	0.01845		501,199,439	0.08264	27,875,706	2,244,938,842
23		337,314,933	337,314,933	27,165,281,249	26,827,966,316	0.01539	5,191,277	418,073,678	0.07379	24,890,469	2,004,526,103
24		337,314,933	337,314,933	27,165,281,249	26,827,966,316	0.01283	4,327,751	348,530,558	0.06588	, ,	1,789,648,729
25		337,314,933	337,314,933	27,165,281,249	26,827,966,316	0.01070		290,668,509	0.05882	, ,	1,597,861,843
26		337,314,933	337,314,933	27,165,281,249	26,827,966,316	0.00893	3,012,222	242,585,962	0.05252		1,426,720,571
27		337,314,933	337,314,933	27,165,281,249	26,827,966,316	0.00745	2,512,996	202,381,345	0.04689	15,816,697	1,273,780,038
28		337,314,933	337,314,933	27,165,281,249	26,827,966,316	0.00621	2,094,726	168,696,397	0.04187	14,123,376	1,137,410,326
29		337,314,933	337,314,933	27,165,281,249	26,827,966,316	0.00518	1,747,291	140,716,157	0.03738	12,608,832	1,015,438,213
30		337,314,933	337,314,933	27,165,281,249	26,827,966,316	0.00432	1,457,201	117,354,015	0.03338	11,259,572	906,777,088
Total	153,640,603,600	9,231,226,191	162,871,829,791	747,404,522,155	591,217,045,899	5	91,793,747,896	91,644,204,246		111,876,417,857	169,064,417,196
							NPV =	-149,543,650		NPV =	57,187,999,339

Table 3.1.45 Cases for Sensitive Analysis (SA2)

Case	Cost	Benefit	Base Cost and Benefit	Remarks
SA 2 (B-10%)	No Change	-10%	Base 1	

					EIRR =	19.6%		B/C =	1.49	
	Cost (kyat)		Benefit	Benefit -Cost	Present Value		nt Value	Present Value		nt Value
0	Cost (Kyat)		(kyat)	(kyat)	Factor	Discout Rate	19.6%	Factor	Discout Rate	12.0%
Investment	O & M	Total	Total			Cost	Benefit		Cost	Benefit
21,924,003,000		21,924,003,000	0	-21,924,003,000	0.83612	18,331,097,388	0	0.89286	19,575,065,319	
23,858,120,000	63,150,000	23,921,270,000	6,015,918,182	-17,905,351,818	0.69910	16,723,359,857	4,205,728,401	0.79719	19,069,797,231	4,795,829,81
41,531,145,000	141,068,061	41,672,213,061	15,348,154,568	-26,324,058,493	0.58453	24,358,658,701	8,971,456,790	0.71178	29,661,447,813	10,924,509,45
29,600,465,000	256,819,872	29,857,284,872	21,648,334,145	-8,208,950,727	0.48874	14,592,449,408	10,580,406,830	0.63552	18,974,901,682	13,757,949,31
22,759,543,000	337,314,933	23,096,857,933	24,448,753,124	1,351,895,191	0.40864	9,438,300,026	9,990,738,477	0.56743	13,105,850,097	13,872,955,98
	337,314,933	337,314,933	24,448,753,124	24,111,438,191	0.34167	115,250,393	8,353,405,480	0.50663	170,893,865	12,386,471,79
	337,314,933	337,314,933	24,448,753,124	24,111,438,191	0.28568	96,364,130	6,984,519,792	0.45235	152,584,410	11,059,393,47
	337,314,933	337,314,933	24,448,753,124	24,111,438,191	0.23886	80,571,045	5,839,829,171	0.40388	136,234,755	9,874,362,41
	337,314,933	337,314,933	24,448,753,124	24,111,438,191	0.19972	67,368,538	4,882,904,974	0.36061	121,639,138	8,816,464,86
	337,314,933	337,314,933	24,448,753,124	24,111,438,191	0.16699	56,328,221	4,082,697,284	0.32197	108,605,289	7,871,765,04
	337,314,933	337,314,933	24,448,753,124	24,111,438,191	0.13962	47,095,911	3,413,534,911	0.28748	96,971,297	7,028,527,54
	337,314,933	337,314,933	24,448,753,124	24,111,438,191	0.11674	39,378,145	2,854,147,440	0.25668	86,581,997	6,275,505,95
	337,314,933	337,314,933	24,448,753,124	24,111,438,191	0.09761	32,925,311	2,386,442,792	0.22917	77,302,463	5,602,920,75
	337,314,933	337,314,933	24,448,753,124	24,111,438,191	0.08161	27,528,272	1,995,262,742	0.20462	69,021,382	5,002,703,86
	337,314,933	337,314,933	24,448,753,124	24,111,438,191	0.06824	23,018,371	1,668,382,913	0.18270	61,627,438	4,466,787,19
	337,314,933	337,314,933	24,448,753,124	24,111,438,191	0.05706	19,247,190	1,395,045,853	0.16312	55,022,812	3,988,080,61
	337,314,933	337,314,933	24,448,753,124	24,111,438,191	0.04771	16,093,295	1,166,450,012	0.14564	49,126,547	3,560,716,40
	337,314,933	337,314,933	24,448,753,124	24,111,438,191	0.03989	13,455,493	975,260,762	0.13004	43,864,434	3,179,315,8
	337,314,933	337,314,933	24,448,753,124	24,111,438,191	0.03335	11,249,453	815,365,917	0.11611	39,165,637	2,838,744,72
	337,314,933	337,314,933	24,448,753,124	24,111,438,191	0.02789	9,407,713	681,875,725	0.10367	34,969,439	2,534,602,23
	337,314,933	337,314,933	24,448,753,124	24,111,438,191	0.02332	7,866,184	570,144,923	0.09256	31,221,870	2,262,976,58
	337,314,933	337,314,933	24,448,753,124	24,111,438,191	0.01949	6,574,268	476,506,198	0.08264	27,875,706	2,020,444,95
	337,314,933	337,314,933	24,448,753,124	24,111,438,191	0.01630	5,498,233	398,514,676	0.07379	24,890,469	1,804,073,49
	337,314,933	337,314,933	24,448,753,124	24,111,438,191	0.01363	4,597,603	333,236,505	0.06588	22,222,308	1,610,683,85
	337,314,933	337,314,933	24,448,753,124	24,111,438,191	0.01140	3,845,390	278,715,786	0.05882	19,840,864	1,438,075,6
	337,314,933	337,314,933	24,448,753,124	24,111,438,191	0.00953	3,214,611	232,996,617	0.05252	17,715,780	1,284,048,51
	337,314,933	337,314,933	24,448,753,124	24,111,438,191	0.00797	2,688,400	194,856,562	0.04689	15,816,697	1,146,402,03
	337,314,933	337,314,933	24,448,753,124	24,111,438,191	0.00666	2,246,517	162,828,696	0.04187	14,123,376	1,023,669,29
	337,314,933	337,314,933	24,448,753,124	24,111,438,191	0.00557	1,878,844	136,179,555	0.03738	12,608,832	913,894,39
	337,314,933	337,314,933	24,448,753,124	24,111,438,191	0.00466	1,571,888	113,931,190	0.03338	11,259,572	816,099,37
139,673,276,000	9,231,226,191	148,904,502,191	672,664,069,937	529,775,485,928	5	84,139,128,799	84,141,366,974		101,888,248,519	152,157,975,4
						NPV =	2.238.175			50.269.726.9

Table 3.1.46 Cases for Sensitive Analysis (SA3)

Case	Cost	Benefit	Base Cost and Benefit	Remarks
SA 3 (C+10B-10)	+10%	-10%	Base 1	

						EIRR =	17.5%		B/C =	1.36	
Year		Cost (kyat)		Benefit	Benefit -Cost	Present Value	Prese	nt Value	Present Value	Preser	nt Value
rear		Cost (Kyat)		(kyat)	(kyat)	Factor	Discout Rate	17.5%	Factor	Discout Rate	12.0%
	Investment	O & M	Total	Total			Cost	Benefit		Cost	Benefit
1	24,116,403,300		24,116,403,300	0	-24,116,403,300	0.85106	20,524,506,192	0	0.89286	21,532,571,850	0
2	26,243,932,000	63,150,000	26,307,082,000	6,015,918,182	-20,291,163,818	0.72431	19,054,482,563	4,357,389,698	0.79719	20,971,742,700	4,795,829,816
3	45,684,259,500	141,068,061	45,825,327,561	15,348,154,568	-30,477,172,993	0.61643	28,248,106,668	9,461,062,920	0.71178	32,617,551,651	10,924,509,458
4	32,560,511,500	256,819,872	32,817,331,372	21,648,334,145	-11,168,997,227	0.52462	17,216,628,384	11,357,149,059	0.63552	20,856,070,434	13,757,949,316
5	25,035,497,300	337,314,933	25,372,812,233	24,448,753,124	-924,059,109	0.44649		10,916,123,782	0.56743	14,397,294,845	13,872,955,985
6		337,314,933	337,314,933	24,448,753,124	24,111,438,191	0.37999	128,176,301	9,290,281,700	0.50663	170,893,865	12,386,471,795
7		337,314,933	337,314,933	24,448,753,124	24,111,438,191	0.32340	109,087,649	7,906,726,760	0.45235	152,584,410	11,059,393,476
8		337,314,933	337,314,933	24,448,753,124	24,111,438,191	0.27523	92,839,189	6,729,030,322	0.40388	136,234,755	9,874,362,412
9		337,314,933	337,314,933	24,448,753,124	24,111,438,191	0.23424	79,012,650	5,726,875,932	0.36061	121,639,138	8,816,464,864
10		337,314,933	337,314,933	24,448,753,124	24,111,438,191	0.19935	67,243,732	4,873,858,935	0.32197	108,605,289	7,871,765,043
11		337,314,933	337,314,933	24,448,753,124	24,111,438,191	0.16966	57,228,852	4,147,975,455	0.28748	96,971,297	7,028,527,548
12				24,448,753,124	24,111,438,191	0.14439	48,704,903	3,530,155,464	0.25668	86,581,997	6,275,505,952
13		337,314,933	337,314,933	24,448,753,124	24,111,438,191	0.12289	41,452,632	3,004,507,271	0.22917	77,302,463	5,602,920,753
14		337,314,933	337,314,933	24,448,753,124	24,111,438,191	0.10459	35,279,769	2,557,095,089	0.20462	69,021,382	5,002,703,864
15		337,314,933	337,314,933	24,448,753,124	24,111,438,191	0.08901	30,024,402	2,176,183,516	0.18270	61,627,438	4,466,787,196
16		337,314,933	337,314,933	24,448,753,124	24,111,438,191	0.07575	25,551,606	1,851,993,049	0.16312	55,022,812	3,988,080,610
17		337,314,933	337,314,933	24,448,753,124	24,111,438,191	0.06447	21,746,694	1,576,211,114	0.14564	49,126,547	3,560,716,405
18		337,314,933	337,314,933	24,448,753,124	24,111,438,191	0.05487	18,508,470	1,341,503,084	0.13004	43,864,434	3,179,315,856
19		337,314,933	337,314,933	24,448,753,124	24,111,438,191	0.04670	15,752,607	1,141,756,771	0.11611	39,165,637	2,838,744,725
20		337,314,933	337,314,933	24,448,753,124	24,111,438,191	0.03974	13,404,895	971,593,449	0.10367	34,969,439	2,534,602,236
21		337,314,933	337,314,933	24,448,753,124	24,111,438,191	0.03382	11,407,991	826,856,831	0.09256	31,221,870	2,262,976,589
22		337,314,933	337,314,933	24,448,753,124	24,111,438,191	0.02879	9,711,297	703,879,602	0.08264	27,875,706	2,020,444,958
23		337,314,933	337,314,933	24,448,753,124	24,111,438,191	0.02450	8,264,216	598,994,452	0.07379	24,890,469	1,804,073,493
24		337,314,933	337,314,933	24,448,753,124	24,111,438,191	0.02085	7,033,016	509,756,503	0.06588	22,222,308	1,610,683,856
25		337,314,933	337,314,933	24,448,753,124	24,111,438,191	0.01774	5,983,967	433,720,880	0.05882	19,840,864	1,438,075,659
26		337,314,933	337,314,933	24,448,753,124	24,111,438,191	0.01510	5,093,455	369,176,172	0.05252	17,715,780	1,284,048,514
27		337,314,933	337,314,933	24,448,753,124	24,111,438,191	0.01285	4,334,497	314,166,478	0.04689	15,816,697	1,146,402,034
28		337,314,933	337,314,933	24,448,753,124	24,111,438,191	0.01094	3,690,225	267,469,359	0.04187	14,123,376	1,023,669,293
29		337,314,933	337,314,933	24,448,753,124	24,111,438,191	0.00931	3,140,402	227,617,892	0.03738	12,608,832	913,894,392
30		337,314,933	337,314,933	24,448,753,124	24,111,438,191	0.00792	2,671,534	193,634,125	0.03338	11,259,572	816,099,379
Total	153,640,603,600	9,231,226,191	162,871,829,791	672,664,069,937	515,808,158,328	6	97,217,775,692	97,362,745,664		111,876,417,857	152,157,975,477
		•					NPV =	144,969,972		NPV =	40,281,557,620

Table 3.1.47 Cases for Sensitive Analysis (SA4) / Project Cost Estimation

Case	Cost	Benefit	Base Cost and Benefit	Remarks
SA 4 (+2years)	Construction delayed t	completion by 2 years	Base 1	

			2014	集			2015年				2016 #				20	17年			2018	9年	
		Finati	ciat	Conversion	Economic	Financi	al.	Conversion	Economic	Financ	ial	Conversion	Economic	Financ	SI AW	Conversion	Economic	Financi	1):	Convers ion	Economic
		TG.	LC	Factor	SEANNERS.	FĈ	LC	Factor	Several Art.	FC	LC	Factor	(EXMITTED)	F60	LC	Facto	THE CONTRACTOR	THE .	LC	Facto	E/1200011(00)
North Na	aw II	1 70 703		1.06	1 -0 -05	1,110,103	E	1.00	1,70,703	1,770,703	3	1.00	1 -0 0,	1,770,703		1.00	1 -0 105	1/170,103	=	100	1 0 -0
	Total		t.826,387.	-	1,500,557		1.826,387		1,500,557		1,826,387	-	1 500,557	-	1,826,387	4	1,500,557		1 526 357		1,500,55
EC:	Material		485,460	0.995	481,488		488,852	0.99	481,488		386,352	0.99	431,488	1	495,312	0.99	481 488		488,381	-0.99	481,481
	Skilled Labor		917.519	1/00	535,619		(5)7(619)	11:00	537,619		997519	1.00	557,619		557,659	18.00	537,619		67.619	1:00	550,619
	Unskilled Labor		802,716	al call	481 450		202.416	0.60	481 450		\$02.416	0 60	481 450		802.416	0.60	481 450		802 416	0.60	451,450
South No	_	2.094,360	5.59999	1 50	094, 60	2.094,260	176-000 46 4	1.00	2 094,260	2.094.260	- 4	1.00	2094 160	2094.260		1.00	2.094,260	2 094 260	III MARKANIA N	1:00	2.094,26
	Total	-	1,774,223		1,527,047	-	1 74233		£527/847		1,7/4,223	-	1,521,047		1,774,223		1 52 04		1,778,222	-	15.04
LC	Material		773 501	6,99	766,855		⇒4501	0.99	166,855		274,602	0.99	766.355		774,601	0.99	766.855		1(50)	0.99	~66.85
	Skilled Labor	-	365/645	1.00	401,046	-	303,635	1.00	-101,046		101/146	1.00	401 046	-	401,046	100	401 (146		40),(28	1.00	401 046
	Unskilled Labor	-	598,576	5/603	359,146		598.576	71.481	159,146		195,576	0.60	339 146		598,576	0.60	339 146		598,578	0.60	359 140
Wegy	yi	-			-	-				5,196,915		1.00	5 196,945	5,196,945	-	1.00	5 196 945	5,196,945		1.00	5 196 94
	Total							-			4 076 480	i i	5 540 750		4,010,480		£ 540 =50		1,070,480		3 540 750
LC	Material										100084	(5,99)	1920444		Front See	(1.96	1 924 444		1.999,842	0.99	1 920 44
ic	Skilled Labor	=) le					06		354,807	100	854,80		854,807	1.00	\$54,80		\$54.807	1.00	854 80
	Unskilled Labor			- 5		. 9					1,275.831	0.00	765 499	- 3	1,275,834	6.60	65 199		1,275,831	-060	765 499
Talong t	liya									2 892 97-		8.00	18919	28929**		600	2,892.9**	28929		160	- 892.9-
10.020	Total	1				-				80.20	2,168,216	I NXS	1 966 491	1500,407	2,168,216	1700	1,966,491		2.468.216	1.500	1 966,491
	Material				-						1 888 885	0.99	1 169 949		1,383,787	(6.99)	1, 969, 939		1.384.067	0.99	1 169 949
LC	Skilled Labor										WEST	1.00	314 718		314,711	1.00	514711		Me (33	1.00	314,711
	Unskilled Labor										169.718	0.60	281,831		469,718	0.60	281 834		499,718	0.60	251 531
Sub Total(F	FC-LC	1 864 961	3.600,610		6 892 567	3,864,963	1 600.610		6,892.567	11,954 885	9 839 306		30(489 730)	11.954 885	9 839 301		20.489.730	11,954,885	9 819 306		10.97.16
Machine		5,914 204		1,00	5.914,704	8,571,506		1.00	8,871,506												
Procuren		9551733	.0.	0.99	0	20,09630	147,855	0.99	146,376	- 4					- 1		- 1				
		-		2.52			2.02900	7.00 5.0	13/39%23								=		-		
Engineering		-						17.00	85950000	-					-						
Engineering Se	ervice (DD)					2,838,040		1.00	2.838.060			-			-		-		-	-	
					-	-	229,824	0.99	122,526			- 1		7.70.70.20	-	7,000	-	F1 W/2	-	-	-714
Engineering Se	enrice (SV)	-			-	721,048)(1207Ja	1.00	F21-048	221,048	722.766	1.00	721,048	725,048		100	721,048	721,648	120.03	1.00	121,04
					-	-	189,425	1199	185,569		189,429	0.99	155,569		185,423	6,98	183,560		185423	0.99	183 56
Total	NI .	9 119 167	3,600,610		12 806 111	16:295.357	1/663,712		/20/375/432	12,615,933	10.024 729		21/394/347	12:675.933	10.024 330		31,394,341	12615933	10.024 = 29		f4,50(,780
thys cal Contingency	.5%	488.958	180,031		640 339	814,768	133,186		1,018,772	633,797	501,736		1.069,711	633.797	501,737		£069,743	633,797	501, 236		725 08
Project Management (FC+LC)	10%	336 496	60,061		689 25	386,396	360,081		889,397	1,195,489	983,931		2,048,973	1,195,489	98 + 9 +1		2048.913	1 195 489	98+9+1		1359,71
Sub-Total	**	19654611	4,140,762	0.	14 136 36	17,496,621	5,256,959	(0)	22,083,461	14,505,219	11,509,896	0	24,513,037	14,505,219	[1,509,\$98	b'	34,515,031	14,505,219	11 509 396		1658658
Grand Total(FC+LC)			14 795 323				22 713 450				26 015 315				36 (4.511=				solsus.		
08M	03%					29,338	10.802		38,420,513	78,223,572	34,792,966		99 546 809	(1625) 171	14 86 153		163 (29,6%)	854,279,170	84,941, 143		227,912.60

Table 3.1.48 Cases for Sensitive Analysis (SA4) / Project Cost and Benefit Estimation

Particulars		FC/LC	Total	Ratio, %	2014	2015	2016	2017	2018	2019	2020	Total
mplementation									·			
Civil & Structure Construction												
1 1 North Nawin		FC	17.707.034.000	49	1,770,703,400	1,770,703,400	1,770,703,400	1,770,703,400	1,770,703,400			8 853 517.0
		LC	18.263.874.000	51	1826.387.400	1 826 387 400	1.826 387 400					9 13 1 937 0
		(unskilled labors)	8 024 158 000	44	802,415,800	802,415,800	802 415 800	802,415,800	802 415 800			4 012 079 0
		Sub Total (FC+LC)	35,970,908,000	100	3.597.090.800	3 597 090 800	3,597,090,800		3,597,090,800	0	0	17 985 454 0
1.2 South Nawin		FC	20 942 600 000	54	2 094 260 000	2 094 260 000	2 094 260 000					10 471 300 0
100000000000000000000000000000000000000	-	LC	17 742 234 000	46	1 774 223 400	1.774.223.400	1,774,223,400		1 774 223 400	-	-	8 87 1.117 0
		(unskilled labors)	5 985 762 000	34	598 576 200	598 576 200	598 576 200		598 576 200			2 992 881 0
		Sub Total (FC+LC)	38 684 834 000	100	3 868 483 400	3 868 483 400	3 868 483 400			0	0	19 342 417 0
1.3 Wegyi		FC FC	51 969 450 000	56	3,000,403,400	3,000,403,400	5.196.945.000				5.196.945,000	259847250
1.5 MEHN		LC	40 704 796 000	44			4 070 479 600			4 070 479 600	4 070 479 600	203523980
			12,758,310,000	31			1 275 831 000		1.275,831 000	1 275 831 000	1 275 831 000	63791550
		(unskilled labors)		100					9 267 424 600	9 267 424 600	9 267 424 600	
4 4 T N		Sub Total (FC+LC)	92,674,246,000				9 267 424 600					46337 1230
1.4 Taung Nyo		FC	28,929,768,000	57			2,892,976,800			2,892,976,800	2 892 976 800	144648840
		LC	21,682,164,000	43			2,168,216,400				2,168,216,400	1084 10820
		(unskilled labors)	4,697,182,000	22			469,718,200			469 718 200	469,718,200	23485910
		Sub Total (FC+LC)	50,611,932,000	100			5,061,193,200			5,061,193,200	5,061,193,200	25,305,966,0
Total of Civil & Structure Construction		FC	59 774,426 000	55	3 864 963 400	3 864 963 400	11 954 885 200			8 089 921 800	8 089 921 800	
		LC	49,196,534,000	45	3,600,610,800	3,600,610,800	9,839,306,800			6,238,696,000	6,238,696,000	
		(unskilled labors)	15,732,706,000	32	1,400,992,000	1,400,992,000	3,146,541,200			1,745,549,200	1,745,549,200	
		Total (FC+LC)	108,970,960,000	100	7 465 574 200	7 465 574 200	21,794,192,000	21,794,192,000	21,794,192,000	14,328,617,800	14,328,617,800	
2 Machineries Procurement		FC	14,785,510,000	99	5 9 14,204 000	8,871,306,000						1
		LC	147,855,100	1		147 855,100						
		Total (FC+LC)	14,933,365,100	100	5 9 14,204 000	9,019,161,100	0	0				
5_Engineering Service			0									ì
5.1 Engineering Service (DD)		FC	2 838 040 000	80		2.838.040.000				1		
		LC	729 824 000	20		729.824.000						ì
		Total (FC+LC)	3 567 864 000	100		3 567 864 000	0	0				
5.2 Engineering Service (SV)	-	FC	8 652 579 998	80		721,048,333	721,048,333	721,048,333	721.048.333	721.048.333	721.048.333	4 326 290 000
The angle of the same of the s		LC	2 225 079 998	20		185,423,333	185.423.333	185.423.333		185.423.333	185 423 333	1.112.540.000
		Total (FC+LC)	10.877.659.996	100		906,471,666	906 471 666	906 471 666	906.471.666	906 471 666	906.471.666	5 438 830 000
		lotal (FC+LG)	10,611,639,996	100		900,411,000	900,471,000	900,471,000	900,471,000	900,471,000	900,471,000	3,438,630,000
1.1 Total of 1, 2, 5 (FC)		FC	81,724,265,998	61	9,779,167,400	16,295,357,733	12 675 933 533	12,675,933,533	12,675,933,533	8,810,970,133	8 8 10 9 70 133	
1 2 Total of 1, 2, 5 (LC)		LC	51,186,753,098	39	3,600,610,800	4,663,713,233	10,024,730,133	10,024,730,133	10,024,730,133	6,424,119,333	6,424,119,333	
1 3 Total of 1, 2, 5 (Unskilled Labors)		(unskilled labors)	15.732.706.000	31	1400.992.000	1,400,992,000	3 146 541 200	3.146.541.200	3.146.541.200	1.745 549 200	1.745.549.200	
1.4 Total of 1, 2, 5 (Grand Total)		Total (FC+LC)	132 9 11 0 19 0 96	100	13 3 79 7 78 200	20 959 070 966	22 700 663 666			15 235 089 466	15 235 089 466	
		104100120)	102,011,010,000	,00	10,010,10,200	20,000,010,000	22,100,000,000	22,700,000,000	22,100,000,000	10,200,000,400	10,200,000,400	
2.1 Physical Contingency (5% of 1.1)	5%	FC	4.086.213,302	61	488,958,370	814,767,887	633,796,677	633,796,677	633,796,677	440.548.507	440 548 507	
2 2 Physical Contingency (5% of 1.2)	5%	LC	2 559 337.657	39	180 030 540	233 185 662	501 236 507	501 236 507	501.236.507	321 205 967	321 205 967	1
2.3 Physical Contingency (5% of 1.3)	5%		786 635 300	31	70,049,600	70,049,600	157,327,060	157,327,060		87 277 460	87,277,460	
2.4 Physical Contingency (5% of 1.4)	5%	Total (FC+LC)	6,645,550,953	100	668,988,910	1,047,953,548	1,135,033,183	1,135,033,183	1,135,033,183	761,754,473	761,754,473	
						40.410.400						<u> </u>
3.1 Total of 1.1 & 2.1		FC	85,810,479,300	61	10 268,125,770	17,110,125,620				9,251,518,640	9,251,518,640	1
3 2 Total of 1.1 & 2.2		LC	53,746,090,755	39	3,780,641,340	4 896 898 895	10,525,966,640			6,745,325,300	6 745 325 300	
3.3 Total of 1.1 & 2.3		(unskilled labors)	16,519,341,300	31	1,471,041,600	1,471,041,600	3,303,868,260		3,303,868,260	1,832,826,660	1,832,826,660	
3.4 Total of 1.1 & 2.4		Total (FC+LC)	139,556,570,049	100	14,048,767,110	22,007,024,514	23,835,696,849	23,835,696,849	23,835,696,849	15,996,843,939	15,996,843,939	
4. Project Management (10% of 1)	10%	LC	10,897,096,000	100	746,557,420	746,557,420	2,179,419,200		2,179,419,200	1,432,861,780	1.432.861,780	
Others (Miscellaneous 5% of 1-2)	5%	LC	5 744 258 200	100	668,988,910	373 278,710	1 089 709 600	1 089 709 600	1,089,709,600	716,430,890	716 430 890	
6.1 Grand Total Cost for Project Evaluation		FC	85,810,479,300	55	10,268,125,770		13,309,730,210			9,251,518,640	9,251,518,640	
6 2 Grand Total Cost for Project Evaluation		LC	70,387,444,955	45	5 196 187 670	6,016,735,025	13,795,095,440	13 795 095 440	13,795,095,440	8,894,617,970	8,894,617,970	
6.3 Grand Total Cost for Project Evaluation		Total (FC+LC)	156 197 924 255	100	15 464 313 440	23 126 860 645	27 104 825 650	27 104 825 650	27,104,825,650	18,146,136,610	18,146,136,610	
	0:30%	LC				40,139,335	89 593 541	154,976,117	220.358.693	285 741 269	13 5	328,727,122
7. Operation and Maintenance												

eft griculture Production North Nawin 1.1 Black Gram (a) Increase of Sawn Area (ac)										
North Nawin										
1 1 Black Gram (a) Increase of Sawn Area (ac)				5 074 12	5 074 12	5074 12	5 074 12	5 074 10		
(b) Gross Profit (Kt/ac)				5,074.12 328.000	5,074 12 328.000	5,074 12 328,000	5,074 12 328.000	5,074 10 328,000		
(c) input Cost (ktac) (d) Family Labor (ktac)				37 086 28 258	37 086 28 258	37 08 6 28 25 8	3 / 086 28 258	37 086 28 258 37,188		_
(e) Hired Labor (kt/ac) (f) Unit Net Profit (kt/ac)				36.535	39 441	39 441	37 188	37,188		
(f) Unit Net Profit (ktrac)			-	226 121 1 147 365,089	223 215 1 132 619 696 2 279 984 785	923 215 1 132 619 696	225,468 1 144 051,688	225,468 1 144 047 179		
(g) Net Profit (kt) (h) Accumulated Net Profit (kt) South Nawin				1 147 365 089	2,279,984,785	3 41 2 604 481	4 556 656 169	5 700 703 348	5,700,703,348	
		1 1 1			and the first					
(a) Increase of Sawn Area (ac) (b) Gross Profit (Ktac)			-	17,608.66	11.691.16	11,691 16	11 691 16 328 000 37.086 28 258 39 441	11691 15		
(b) Gross Profit (Ktac)				250 167 38.684	328,000 37,086 28,258 39,441	3 8 000 37 086 28 258 39 441	328 000	328,000 37,086 28,258 39,441		
(c) Input Cost (ktac) (d) Family Labor (ktac) (e) Hired Labor (ktac)				26 176	37 086	37 086	28 258	28 258		
(e) Hired Labor (kt/ac)				26 176 36 535	39 441	39 441	39 441	39 441		
n Unit Net Profit (ktac)				148,772	223,215	223,215	2809 842 279	223,215		
g) Net Profit (kt) (h) Accumulated Net Profit (kt):				2619675566 2619675566	2 609 642 279 5 229 317,845	2,609,642,279 7,838,960,124	2 609 642 279 10 448 602 403	2,609,640,047 13,058,242,450	13,058,24	2.450
Wegyi	-		-							
a) Increase of Sawn Area (ac)						540 38	540 38	540 38		-
b) Gross Profit (ktac)		4 1				28 000	328 000	328 000		
) Family Labor (ktac)						28 258	28 258	28 258		
Hired Labor (kt/ac)		1 (0				328 000 37 086 28 258 36,535 226 121	328 000 37 086 28 258 36 535	328 000 37 086 38 258 36 535 26 121 122 191 266 366 573 798		
n) Accumulated Net Profit (Kt) Method Si Increase of ISawn Area (ac) 9) Gross Profit (Ktac) 9) Family Labor (Ktac) 9) Family Labor (Ktac) e) Hirried (Labor (Ktac) 9) Hirried (Labor (Ktac)						226 121		122 101 200		
Secure ulated No. Book (18)						122 191 266 122 191 266	122 191,266 244,382 532	366 573 798	366,573,798 366,57	3,798
ny accompliated ref (Florifickt) aung Nyo 1 Black Gram a) Increase of Sawn Area (ac) b) Gross Profit (Klac)										
i) Increase of Sawn Area (ac)						6 142 94	614294	6 142 94	6142 94	
o) Gross Profit (Kt ac)						328 000	6,142 94 328,000	328,000 37,086 28,258 36,535		
c) input Cost (kt ac)						37 086	37 086	37,086		
Hired Labor (ktac)						37 086 28 258 36 535	37 086 28 258 36 535	36 535		
) Unit Net Profit (ktac)						226.121	226 121			
o) Falmiy Cabot (ktac) U nit Net Profit (ktac) U nit Net Profit (ktac) U Net Profit (ktac) U Net Profit (ktac) U Net Profit (ktac) U Net Profit (ktac) Sub Total of Crop Benefit (kt) ad Improve en		1-1-1	1			1 38 9 047 736	1 389 047 736 2 778 095 472	226,121 1 389 047 736 4 167 143 208	4 167 143 208 4 167 14 23 292 662 804 23 292 662	3.208
Sub Total of Crop Benefit (KI) ad Improvement				3,767,040,655	7,509,302,630	12762803 607	18 027 736 576	23 292 662 804	23 292 662 804 23 292 662	804
ad improvement			_							
Torth Nawin 1 Monsoon Paddy for threshing										_
a) Area Improved (ac) b) Cost before Rehabilitation (kt) c) Cost after Rehabilitation (kt)				0	0	0	0	0		
Costaler Rehabilitation (KI)	-		+	0	0	0	0	0		_
) Net Profit (kt) 2 Summer Paddy for threshing				Ö	0	ŏ	ŏ	Ö		
2 Summer Paddy for threshing				2 998 44	1 110 53	1 110 53	1 110 53	1 110 53	7.7	0.63
a summer addy of meeting a) Area improved (ac) b) Cost before Renabilitation (kt) c) Cost after Renabilitation (kt)			-	179 906 400	66 631 800	66 631 800	66,631,800	66 631 800	66,63	800
Cost a fler Rehabilitation (Kt)				63 515 955 116 390 445	23 524 357 159 497 888	23 5 24 357 159 497,888	66,631,800 23,524,357 159,497,888	23 5 24 357 159 497 888	23 5 24 1 5 9 4 9 1	357
d) Net Profit (Kt) 1.3 Improvement of Trolleray Driving Condition			-			159 497,888	159 497 888	159 497 888	159 497	888
(c) Cost after Herabilitation (kt) (d) Net Profit (kt) 1 3 Improvement of Trollergy, Driving Condition (a) Monsoon Paddy Cultivation (kyat) (b) Summer Paddy Cultivation (kyat)				9 5 5 1 109	3 537 447	0				
b) Summer Paddy Cultivation (kyal)				1,688,122	625,228 4 /92,358 33 133 615	0				
c) Black Gram Cultivation (kyat) d) Accumulation above (kyat)			+	12939,351 24 178 582	33 133 615	33.133.615	33 133 615	33.133.615	33 133	615
STATE THE AREA OF								100000000000000000000000000000000000000		C 3
a) Area Improved (ac)			1	0	0	0	0.	0		
b) Cost before Rehabilitation (kl)				0	0	0	Ö	0		
c) Cost after Rehabilitation (KI)			-	0	0	0	0	0		
e a summer - addy										
a) Area Improved (ac)				2,245.49	1 464 45	1,464,45	1 464 45	1 464 45	1 46	4 45
D) Cost before Rehabilitation (Kt)				134,729,400	31 021 444	31 021 444	87.867.000	87,867,000	87,867 31,021	444
a) Airea Improved (ac)) Cost before Renabilitation (kt)) Cost before Renabilitation (kt)) I cost before Renabilitation (kt)) I improvement of triollergy Briving Condition) Mons oon Paddy Cultivation (kyat)) Summer Paddy Cultivation (kyat)) Summer Paddy Cultivation (kyat)) Black Gram Cultivation (kyat)				4 / 566 215 87 163,185	87,867,000 31,021,444 144,008,741	87.867.000 31.021.444 144.008.741	31,021,444 144,008,741	31 021 444 144 008 741	31 021 144 008	741
Jimprovement of Trollergy Oriving Condition				13488.603	9.706.04.4	^				
) Summer Paddy Cultivation (kyat)				1 264 211	824,485	0				
) Black Gram Cultivation (kyat)			1	28.326.064 43.078.877	824,485 18 473 520 71 173 796	0	71.170	*	-	708
Negwi				43078877	71 173 796	71 173 796	71 173 796	71,173,796	71.17	796
1 Marcon Paddy								100		
) Area Improved (ac)) Cost before Rehabilitation (kt)) Cost after Rehabilitation (kt)		- 141	-			13 413 39 934 966 937	5 412 42 377 267 324	000		0.00
) Cost after Rehabilitation (Kt)						934 966 937 284 135 840 650 831 097	377 267 324 114 651 293 913,447 128	0		ŏ
							913,447,128	913447,128	913.447	128
2 Summer Paddy a) Area Improved (ac) b) Cost before Rehabilitation (kt)						772 64 46.358 400	5 4 20 55	1,60291	-	0.00
Cost before Rehabilitation (kt)						46,358 400	325,233,000	96 174 600		0
) Cost after Rehabilitation (kt)						16 366 833 29 991 567	325,233,000 114,823,511 240,401,056	33 9 54 44 3 30 2 621 213	302 621	0
3 Improvement of Trollergy Driving Condition	-	+							302.62	A 1-4
) Cost before Rehabilitation (kt)) Cost after Rehabilitation (kt)) Net Front (kt)) Net Front (kt) 3 Improvement of Trollergy, Driving Condition 1) Monsoon Paddy Cullivation (kyat)) Summer Paddy Cullivation (kyat)) Summer Paddy Cullivation (kyat) Black Gram Cullivation (kyat) Accumulation above (kyat)						7,551,739	3,047,192	30,618,220 5,878,593 3,458,976 68,565,060		
) Summer Paddy Cultivation (kyat)) Black Gram Cultivation (kyat)			-			434 996 10 348 045	3,051 770 4 175 529 28 609 271	5 878 593 3 458 976		
Accumulation above (kyat)						18 334 780	28 609 271	68 565 060	68 565	060
anng Nyo 1 Monsoon Paddy) Area Improved (ac)) Cost before Rehabilitation (kt)										
) Area Improved (ac)						16 499 76	10.233.56	0 00		0.00
Cost before Rehabilitation (kt)						1 150.099.271 349 514 416 800 584 855	713,320,066 216,777,501 1,297,127,420	0		0
) Cost after Rehabilitation (kt) i) Net Profit (kt)						349 514 416 800 584 855	1 297 127 420	1.297 127 420	1.297 127	420
2 Summer Paddy										
a) Area Improved (ac)		- 1				1 324 97 79 498 200	1,156 76	0 00		0.00
a) Area Improved (ac) b) Cost before Rehabilitation (kt) c) Cost a fier Rehabilitation (kt) d) Net Profit (kt)						28 066 840	69 405 600 24 503 647	0		0
d) Net Profit (k.t)						51 431 360	96 333 313	96,333,313	96,333	313
3 Improvement of Trollergy Driving Condition								_		
a) Net Profit (kt) 3 Improvement of Trollergy Driving Condition 3) Monsoon Paddy Cultivation (kyat) b) Summer Paddy Cultivation (kyat) c) Black Gram Cultivation (kyat)		+				9 289 365 745 958	5,761,494 651,856 18,099,138	0		
c) Black Gram Cultivation (kyat)						19 507 666	12,099,138	Ö		0.97
I) Accumulation above (kyat) Sub-total of Road Improve Benefi (kt)			-	270,811,089	407 814 040	29 542 989 1 988 530 688	3 031 787 105	3 133 963 051	48,054 3,133,963	1051
			1	6 - 4 443	7,917,116,670	. 500 555 556	2,001,707,108	5 133 203 051	2,133,96	

Table 3.1.49 Cases for Sensitive Analysis (SA4) / Project Cost and Benefit Estimation

Benefit		2015			2016			2017			2018			2019			2020	
Agriculture Production	Disease	Conversion	Farmeria	estation.	Conversion	residen.	Financial	Conversion	WATERW.	rutilian.	Conversion	·	Flores (a)	Conversion	PPotts X2	Florestel	Conversion	F 2006
1 1 North Naw n	F nanc a	Factor	Economic	Financial	Factor	Economic	Financial	Factor	Economic	Financial	Factor	Economic	Financial	Factor	Economic	F nanc al	Factor	Economic
1 1 1 Black Gram																		
a Increase of Sawn Area (ac)	5,074 12		5 074	5.074 12		5,074 12	0	0.00	0.	0	0.00	0	10	0.00	D	0	0.00	0
(b) Gross Profit (Kt ac)	328,000	1 07	350 960	328,000	1.07	350,960						1						
(c) Input Cost (kt ac)	37,086	0.77	28 556	37,086	0.77	28,556												
d Fam yLabor (ktac)	28,258	0 60	16 955	28,258	0.60	16,955						E 18						
e i Hired Labor (kt/ac	36,535	0 60	21 921	39,441	0.60	23,665												
(f) Unit Net Profit (ktac)	226 121		283 528	223.215		281 784												
ig (Net Profit (Kt)	1,147,365,089		1 438 621 072	1.132 619,696		1 429 805 830												
(h) Accumulated Net Profit (Kt)	1,147,365,089		1,438 621.072	2 279 984 785		2 868 426 902	2 279 984 785		2 868 426 902	2,279,984,785		2 868 426 902	2 279 984 785		2 868 426 902	2,279,984,785		2.868 426 902
1 2 South Naw n						No.					1							
1 2 1 Black Gram																		
(a) hcrease of Sawn Area (ac)	17,608 66		17,608 66	11 691 16		11 691 16	11 691 16		11 691 16	0	0.00	0	0	0.00	0	0	0.00	10
(b) Gross Profit (Kt ac)	250,167	1 07	267 679	328,000	1.07	350 960	328 000	1 07	350 960			1						
(c) hput Cost (ktac)	38,684	0.77	29,787	37 086	0.77	28 556	37,086	0.77	28 556			1						
(d)Fam lyLabor (ktac i	26,176	0.60	15,706	28,258	0.60	16,955	28,258	0 60	16 955		7	1						
(e) Hired Labor (ktac	36,535	0.60	21 921	39,441	0.60	23,665	39 441	0 60	23 665									
(f) Unit Net Profit (ktaci	148,772	- 1	200 265	223,215		281,784	223 215		281,784									
(g) Net Profit (Kt)	2,619,675,566		3 526 398 295	2 609 642 279		3 294 381 829	2 609 642 279		3 294 381 829							-		7
(h) Accumulated Net Profit (Kt)	2 619 675 566		3 526 398 295	5 229 317 845		6 820,780 124	7 838 960 124		10,115,161,953	7,838,960,124		10,115,161,953	7.838.960,124		10,115,161,953	7,838,960,124	-	10,115,161,953
1 3 Wegy			1															
1 3 1 Black Gram																		
(a) horease of Sawn Area (ac)							540 38		540 38	540 38		540.38	540.38		540.38	0.00		0.00
(b) Gross Profit (Kt ac)							328 000	1 07	350,960	328,000	1 07	350 960	328,000	1.07	350 960	0	1.07	0
(c) hput Cost (ktac)							37 086 00	0.77	28,556	37,086	0 77	28 556	37,086	0.77	28 556	0	0.77	0
(d)Fam yLabor(ktac)							28 258	0 60	16,955	28 258	0 60	16 955	28,258	0.60	16 955	0	0.60	Ö
(e) Hired Labor (kt/ac)							36 535 00	0 60	21,921	36,535	0 60	21 921	36,535	0.60	21,921	0	0.60	0
(f) Unit Net Profit (ktaci		1					226 121		283 528	226 121		283 528	226,121		283 528	0		-0
(g) Net Profit (Kt)							122 191 266		153,212,861	122, 191, 266		153 212 861	122,191,266		153 212 861	0		0
(h) Accumulated Net Profit (Kt)							122 191 266		153 2 12 861	244,382 532		306 425 722	366 573 798		459 638 583	366 573 798		459 638 583
1 4 Taung Nyo				1														
1 4.1 Black Gram																		
(a) Increase of Sawn Area (ac)							6 142 94		6,142 94	6,142 94		6 142 94	0.00		0.00	0 00		0.00
(b) Gross Profit (Kt ac)				7			328 000	1 07	350 960	328,000	1 07	350 960	0	1.07	0	0	1.07	
(c) Input Cost (ktac)		7					37 086	0.77	28,556	37 086	0.77	28 556	0	0.77	0	0	0.77	0
(d)FamilyLabor (ktaci							28 258	0.60	16,955	28,258	0.60	16 955	0	0,60	0	0	0,60	.0
(e) Hired Labor (ktac)			-				36 535	0.60	21,921	36,535	0 60	21 921	0	0,60	0	0	0.60	.0
(f) Unit Net Profit (ktac)		3	-				226 121		283,528	226,121		283 528	0		0	0		0
(g) Net Profit (Kt)				-			1 389 047 736		1,741,695,492	1 389 047 736		1 741 695 492	0		0	0		C
(h)Accumulated Net Profit (Kt)	1						1 389 047 736		1.741.695.492	2.7/8.095.472		3 483 390 984	2.778 095 472		3 483 390 984	2 778 095 472		3 483 390 984
Sub-Total Base Case, Financial	3,767,040,655		4.965.019.367	7 509 302 630		9 689 207 026	11,630,183,911		14 878 497 208	13,141,422,913		16 773 405 561	13 263 614 179		16 926 618 422	13 263 614 170		16 926 618 422

Benefit		2016			2017			2018			2019	
Road Improvement	Financial cost	Conversion	Economic cost	Financial cost	Conversion	Economic cost	Financial cost	Conversion	Economic cost	Financial cost	Conversion	Economic cost
1.1 North Nawin	1 manetal cost	Factor	Economic cost	i inancial cost	Factor	Economic cost	i manejaj cost	Factor	Economic cost	i manciai cost	Factor	Leonomic cost
1.1.1 Monsoon Paddy												
(a) Area Improved (ac)												
(b) Cost before Rehabilitation (kt) (c) Cost after Rehabilitation (Kt)												
(d) Net Profit (Kt)												
1.1.2 Summer Paddy								-				
(a) Area Improved (ac)	2,998		2,998	1,111		1,111	1,331		1,111	7,111		1,11
(b) Cost before Rehabilitation (kt)	179,906,400	0.99	178,107,336	66,631,800	0.99	65,965,482	66,631,800	0.99	65,965,482	66,631,800	0.99	65,965,48
(c) Cost after Rehabilitation (Kt)	63,515,955	0,99	62,880,795	23,524,357	0.99	23,289,113	23,524,357	0,99	23,289,113	23,524,357	0,99	23,289,11
(d) Net Profit (Kt)	116,390,445		115,226,541	159,497,888		157,902,910	159,497,888		157,902,910	159,497,888		157,902,91
1.1.3 Improvement of Trollergyi Driving												
(a) Monsoon Paddy Cultivation (kyat)	9,551,109	0.99	9,455,598	3,537,447	0.99	3,502,073	Į.					
(b) Summer Paddy Cultivation (kyat)	1,688,122	0.99	1,671,241	625,228	0.99	618,976						
(c) Black Gram Cultivation (kyat)	12,939,351	0.99	12,809,957	4,792,358	0.99	4,744,434						
(d) Sub-total of Trollergyl Driving (kyat)	24, 178, 582		23,936,796	8,955,033		8,865,483			0			
(e) Accumulation of Trollergyl (kyat)	24, 178, 582		23,936,796	33,133,615		32,802,279	33, 133, 615	7	32,802,279	33, 133, 615		32,802,27
1.2 South Nawin												
1.2.1 Monsoon Paddy												
(a) Area Improved (ac)		-		-								
(b) Cost before Rehabilitation (kt) (c) Cost after Rehabilitation (Kt)												
(d) Net Profit (Kt)												
1,2.2 Summer Paddy								-				
(a) Area Improved (ac)	2,245		2,245	1,464		1,464	1,464		1,464	1,464		1,46
(b) Cost before Rehabilitation (kt)	134,729,400	0.99	133,382,106	87,867,000	0.99	86,988,330	87,867,000	0.99	86,988,330	87,867,000	0.99	86,988,33
(c) Cost after Rehabilitation (Kt)	47,566,215	0.99	47,090,553	31,021,444	0.99	30,711,230	31,021,444	0.99	30,711,230	31,021,444	0.99	30,711,23
(d) Net Profit (Kt)	87,163,185		86,291,553	144,008,741		142,568,653	144,008,741		142,568,653	144,008,741		142,568,65
1.2.3 Improvement of Trollergyl Driving												
(a) Monsoon Paddy Cultivation (kyat)	13,488,602	0.99	13,488,602	8,796,914	0.99	8,708,945	0	0.99	0			
(b) Summer Paddy Cultivation (kyat)	1,264,211	0.99	1,251,569	824,485	0.99	816,240	0	0.99	0			
(c) Black Gram Cultivation (kyat)	28,326,064	0.99	28,042,803	18,473,520	0.99	18,288,785	0	0.99	0			
(d) Sub-total of Trollergyi Driving (kyat)	43,078,877		42,782,974	28,094,919		27,813,970	0		0			(
(e) Accumulation of Trollergyi (kyat)	43,078,877		42,782,974	71,173,796		70,596,944	71,173,796		70,596,944	71,173,796		70,596,944
1.3 Wegy												
1.3.1 Monsoon Paddy				13,413		13,413	5,412		5,412	5,412		5.412
(a) Area Improved (ac) (b) Cost before Rehabilitation (kt)				934,966,937	0.99	925,617,268	377,267,324	0.99	373,494,651	377,267,324	0.99	373,494,65
(c) Cost after Rehabilitation (Kt)				284,135,840	0.99	281,294,482	114,651,293	0.99	113,504,780	114,651,293	0.99	113,504,78
(d) Net Profit (Kt)				650,831,097	0.00	644,322,786	913,447,128	0.00	904,312,657	913,447,128	0.00	904,312,65
1.3.2 Summer Paddy				000,001,001		011,022,700	0//0//////		001,012,001	0.0,1.11,120		00 1,0 NE,000
(a) Area Improved (ac)				773		773	5,421		5,421	1,603		1,603
(b) Cost before Rehabilitation (kt)				46,358,400	0.99	45,894,816	325,233,000	0.99	321,980,670	96,174,600	0.99	95,212,85
(c) Cost after Rehabilitation (Kt)				16,366,833	0.99	16,203,165	114,823,511	0.99	113,675,276	33,954,443	0.99	33,614,899
(d) Net Profit (Kt)				29,991,567		29,691,651	240,401,056		237,997,045	302,621,213		299,595,000
1.1.3 Improvement of Trollergyi Driving												
(a) Monsoon Paddy Cultivation (kyat)				7,551,739	0.99	7,476,222	3,047,192	0.99	3,016,720	30,618,220	0.99	30,312,038
(b) Summer Paddy Cultivation (kyat)				434,996	0.99	430,646	3,051,770	0.99	3,021,252	5,878,593	0.99	5,819,80
(c) Black Gram Cultivation (kyat)				10,348,045	0.99	10,244,565	4,175,529	0.99	4,133,774	3,458,976	0.99	3,424,38
(d) Sub-total of Trollergyi Driving (kyat)				18,334,780		18, 151,433	10,274,491		10,171,746	39,955,789		39,556,23
(e) Accumulation of Trollergyi (kyat)				18,334,780		18, 151,433	28,609,271		28,323,179	68,565,060		67,879,41
1.4 Taung Nyo 1.4.1 Monsoon Paddy		- 0	0 //	1		-					Name .	
(a) Area Improved (ac)				16,500		16,500	10,234		10,234	0		
(b) Cost before Rehabilitation (kt)				1,150,099,271	0.99	1,138,598,278	713,320,066	0.99	706, 186, 865	0		
(c) Cost after Rehabilitat on (Kt)				349,514,416	0.99	346,019,272	216,777,501	0.99	214,609,726	0		
(d) Net Profit (Kt)				800,584,855		792,579,006	1,297,127,420		1,284,156,145	1,297,127,420		1,284,156,14
1.4.2 Summer Paddy												
(a) Area Improved (ac)				1,325		1,325	1,157		1,157	0		
(b) Cost before Rehabilitation (kt)				79,498,200	0.99	78,703,218	69,405,600	0.99	68,711,544	0	0.99	
(c) Cost after Rehabilitation (Kt)				28,066,840	0.99	27,786,172	24,503,647	0.99	24,258,611	0	0.99	
(d) Net Profit (Kt)				51,431,360		50,917,046	96,333,313		95,369,979	96,333,313		95,369,97
1.3.3 Improvement of Trollergyi Driving												
(a) Monsoon Paddy Cultivation (kyat)				9,289,365	0.99	9,196,471	5,761,494	0.99	5,703,879	0		
(b) Summer Paddy Cultivation (kyat)				745,958	0.99	738,498	651,256	0.99	644,743	0		
(c) Black Gram Cultivation (kyat)				19,507,666	0.99	19,312,589	12,099,138	0.99	11,978,147	0		
(d) Sub-total of Trollergyi Driving (kyat)				29,542,989		29,247,558	18,511,888		18,326,769	0		17.571.00
(e) Accumulation of Trollergyi (kyat)		-		29,542,989		29,247,558	48,054,877		47,574,327	48,054,877		47,574,32
Sub-total of Road Improve Beneft (kt)	270,811,089	J	268,237,864	1,988,530,688		1,968,780,266	3,031,787,105		3,001,604,118	3,133,963,051		3,102,758,30
Total (Base Case Financial)	4 037 851 744		5,233,257,231	9 497,833 318		11,657,987,292	14 661 971 016		17,880,101,326	16.275 385 964		19,876,163,86

Table 3.1.50 Cases for Sensitive Analysis (SA4) / Financial Cost and Benefit Analyses

						FIRR =	9.1%		B/C =	0.83	
V		04 (4)		Benefit	Benefit -Cost	Present	Presen	t Value	Present	Present	Value
Year		Cost (kyat)		(kyat)	(kyat)	Value Factor	Discout Rate	9.1%	Value Factor	Discout Rate	12.0%
	Investment	O & M	Total	Total			Cost	Benefit		Cost	Benefit
1	14,795,323,000		14,795,323,000	0	-14,795,323,000	0.91659	13,561,245,109	0	0.89286	13,210,152,094	0
2	22,753,580,000	40,140,000	22,793,720,000	3,767,040,655	-19,026,679,345	0.84014	19,149,915,921	3,164,841,536	0.79719	18,170,925,647	3,003,047,140
3	26,015,115,000	103,016,538	26,118,131,538	7,509,302,630	-18,608,828,908	0.77006	20,112,528,372	5,782,613,583	0.71178	18,590,363,666	5,344,971,426
4	26,015,117,000	171,118,524	26,186,235,524	11,630,183,911	-14,556,051,613	0.70583	18,483,030,620	8,208,932,710	0.63552	16,641,876,400	7,391,214,479
5	26,015,115,000	239,220,513	26,254,335,513	13,141,422,913	-13,112,912,600	0.64696	16,985,504,903	8,501,974,968	0.56743	14,897,497,600	7,456,837,604
6	17,429,706,000	239,220,513	17,668,926,513	13,263,614,179	-4,405,312,334	0.59300	10,477,673,422	7,865,323,208	0.50663	8,951,608,239	6,719,744,852
7	17,429,706,000	239,220,513	17,668,926,513	13,263,614,179	-4,405,312,334	0.54353	9,603,591,628	7,209,172,215	0.45235	7,992,538,908	5,999,795,874
8		239,220,513	239,220,513	13,263,614,179	13,024,393,666	0.49820	119,179,660	6,607,932,584	0.40388	96,616,381	5,356,908,495
9		239,220,513	239,220,513	13,263,614,179	13,024,393,666	0.45664	109,237,655	6,056,696,779	0.36061	86,265,309	4,782,991,909
10		239,220,513	239,220,513	13,263,614,179	13,024,393,666	0.41855	100, 125, 746	5,551,485,715	0.32197	77,021,829	4,270,485,857
11		239,220,513	239,220,513	13,263,614,179	13,024,393,666	0.38364	91,774,558	5,088,452,944	0.28748	68,771,113	3,813,023,804
12		239,220,513	239,220,513	13,263,614,179	13,024,393,666	0.35164	84,119,501	4,664,017,290	0.25668	61,403,121	3,404,504,487
13		239,220,513	239,220,513	13,263,614,179	13,024,393,666	0.32231	77,103,164	4,274,995,486	0.22917	54,822,165	3,039,622,461
14		239,220,513	239,220,513	13,263,614,179	13,024,393,666	0.29543	70,672,916	3,918,469,537	0.20462	48,949,301	2,714,000,733
15		239,220,513	239,220,513	13,263,614,179	13,024,393,666	0.27079	64,778,523	3,591,654,084	0.18270	43,705,588	2,423,262,311
16		239,220,513	239,220,513	13,263,614,179	13,024,393,666	0.24820	59,374,531	3,292,029,039	0.16312	39,021,650	2,163,560,745
17		239,220,513	239,220,513	13,263,614,179	13,024,393,666	0.22750	54,422,667	3,017,472,226	0.14564	34,840,076	1,931,712,769
18		239,220,513	239,220,513	13,263,614,179	13,024,393,666	0.20852	49,882,261	2,765,728,829	0.13004	31,108,236	1,724,800,388
19		239,220,513	239,220,513	13,263,614,179	13,024,393,666	0.19113	45,722,217	2,535,074,578	0.11611	27,775,894	1,540,038,242
20		239,220,513	239,220,513	13,263,614,179	13,024,393,666	0.17519	41,909,042	2,323,652,568	0.10367	24,799,991	1,375,038,882
21		239,220,513	239,220,513	13,263,614,179	13,024,393,666	0.16058	38,414,030	2,129,871,165	0.09256	22,142,251	1,227,680,128
22		239,220,513	239,220,513	13,263,614,179	13,024,393,666	0.14718	35,208,475	1,952,138,735	0.08264	19,769,183	1,096,105,076
23		239,220,513	239,220,513	13,263,614,179	13,024,393,666	0.13491	32,273,239	1,789,394,189	0.07379	17,652,082	978,722,090
24		239,220,513	239,220,513	13,263,614,179	13,024,393,666	0.12365	29,579,616	1,640,045,893	0.06588	15,759,847	873,806,902
25		239,220,513	239,220,513	13,263,614,179	13,024,393,666	0.11334	27,113,253	1,503,298,031	0.05882	14,070,951	780, 165, 786
26		239,220,513	239,220,513	13,263,614,179	13,024,393,666	0.10389	24,852,619	1,377,956,877	0.05252	12,563,861	696,605,017
27		239,220,513	239,220,513	13,263,614,179	13,024,393,666	0.09522	22,778,577	1,262,961,342	0.04689	11,217,050	621,930,869
28		239,220,513	239,220,513	13,263,614,179	13,024,393,666	0.08728	20,879,166	1,157,648,246	0.04187	10,016,163	555,347,526
29		239,220,513	239,220,513	13,263,614,179	13,024,393,666	0.08000	19,137,641	1,061,089,134	0.03738	8,942,063	495,793,898
30		239,220,513	239,220,513	13,263,614,179	13,024,393,666	0.07333	17,542,040	972,620,828	0.03338	7,985,181	442,739,441
Total	150,453,662,000	6,534,008,400	156,987,670,400		210,650,634,184		109,609,571,072	109,267,544,319		99,290,181,840	82,224,459,191
							NPV =	-342,026,753		NPV =	-17,065,722,649

Table 3.1.51 Cases for Sensitive Analysis (SA4) / Economic Cost and Benefit Analyses

						EIRR =	16.2%		B/C =	1.24	
Year		Cost (kyat)		Benefit	Benefit -Cost	Present Value	Prese	nt Value	Present Value	Presen	t Value
real		Cost (Kyat)		(kyat)	(kyat)	Factor	Discout Rate	16.2%	Factor	Discout Rate	12.0%
ĺ	Investment	O & M	Total	Total			Cost	Benefit		Cost	Benefit
1	14,795,323,000		14,795,323,000	0	-14,795,323,000	0.86059	12,732,707,021	0	0.89286	13,210,152,094	0
2	22,753,580,000	40,140,000	22,793,720,000	5,233,257,231	-17,560,462,769	0.74061	16,881,256,969	3,875,802,638	0.79719	18,170,925,647	4,171,900,332
3	26,015,115,000	103,016,538	26,118,131,538	11,657,987,292	-14,460,144,246	0.63736	16,646,652,317	7,430,334,780	0.71178	18,590,363,666	8,297,922,195
4	26,015,117,000	171,118,524	26,186,235,524	17,880,101,326	-8,306,134,198	0.54850	14,363,150,185	9,807,235,577	0.63552	16,641,876,400	11,363,161,995
5	26,015,115,000	239,220,513	26,254,335,513	19,876,163,865	-6,378,171,648	0.47203	12,392,833,992	9,382,145,629	0.56743	14,897,497,600	11,278,331,662
6	17,429,706,000	239,220,513	17,668,926,513	19,876,163,865	2,207,237,352	0.40622	7,177,471,328	8,074,095,285	0.50663	8,951,608,239	10,069,860,899
7	17,429,706,000	239,220,513	17,668,926,513	19,876,163,865	2,207,237,352	0.34959	6,176,880,020	6,948,508,126	0.45235	7,992,538,908	8,990,982,724
8		239,220,513	239,220,513	19,876,163,865	19,636,943,352	0.30085	71,969,491	5,979,743,899	0.40388	96,616,381	8,027,585,062
9		239,220,513	239,220,513	19,876,163,865	19,636,943,352	0.25891	61,936,583	5,146,137,586	0.36061	86,265,309	7,167,543,451
10		239,220,513	239,220,513	19,876,163,865	19,636,943,352	0.22281	53,300,723	4,428,608,071	0.32197	77,021,829	6,399,528,480
11		239,220,513	239,220,513	19,876,163,865	19,636,943,352	0.19175	45,870,533	3,811,254,421	0.28748	68,771,113	5,713,999,588
12		239,220,513	239,220,513	19,876,163,865	19,636,943,352	0.16502	39,476,169	3,279,964,561	0.25668	61,403,121	5,101,813,741
13		239,220,513	239,220,513	19,876,163,865	19,636,943,352	0.14201	33,971,705	2,822,614,030	0.22917	54,822,165	4,555,020,473
14		239,220,513	239,220,513	19,876,163,865	19,636,943,352	0.12221	29,235,139	2,429,065,986	0.20462	48,949,301	4,067,060,650
15		239,220,513	239,220,513	19,876,163,865	19,636,943,352	0.10517	25, 158, 821	2,090,376,154	0.18270	. , ,	3,631,375,138
16		239,220,513	239,220,513	19,876,163,865	19,636,943,352	0.09051	21,651,849	1,798,991,591	0.16312	39,021,650	3,242,199,850
17		239,220,513	239,220,513	19,876,163,865	19,636,943,352	0.07789	18,632,886	1,548,154,403	0.14564	34,840,076	2,894,764,505
18		239,220,513	239,220,513	19,876,163,865	19,636,943,352	0.06703	16,034,951	1,332,299,264	0.13004	31,108,236	2,584,696,349
19		239,220,513	239,220,513	19,876,163,865	19,636,943,352	0.05769	13,800,631	1,146,655,893	0.11611	27,775,894	2,307,821,386
20		239,220,513	239,220,513	19,876,163,865	19,636,943,352	0.04965	11,877,298	986,851,536	0.10367	24,799,991	2,060,561,908
21		239,220,513	239,220,513	19,876,163,865	19,636,943,352	0.04272	10,219,500	849,109,720	0.09256	22,142,251	1,839,737,727
22		239,220,513	239,220,513	19,876,163,865	19,636,943,352	0.03677	8,796,138	730,846,545	0.08264	19,769,183	1,642,566,182
23		239,220,513	239,220,513	19,876,163,865	19,636,943,352	0.03164	7,568,937	628,881,825	0.07379	17,652,082	1,466,662,132
24		239,220,513	239,220,513	19,876,163,865	19,636,943,352	0.02723	6,513,975	541,227,942	0.06588	15,759,847	1,309,441,675
25		239,220,513	239,220,513	19,876,163,865	19,636,943,352	0.02343	5,604,937	465,698,519	0.05882	14,070,951	1,169,115,959
26		239,220,513	239,220,513	19,876,163,865	19,636,943,352	0.02017	4,825,078	400,902,225	0.05252	12,563,861	1,043,896,126
27		239,220,513	239,220,513	19,876,163,865	19,636,943,352	0.01736	4,152,868	345,050,205	0.04689	11,217,050	931,993,324
28		239,220,513	239,220,513	19,876,163,865	19,636,943,352	0.01494	3,573,954	296,949,888	0.04187	10,016,163	832,214,981
29		239,220,513	239,220,513	19,876,163,865	19,636,943,352	0.01285	3,073,984	255,408,706	0.03738	8,942,063	742,971,005
30		239,220,513	239,220,513	19,876,163,865	19,636,943,352	0.01106	2,645,779	219,830,372	0.03338	7,985,181	663,466,350
Total	150,453,662,000	6,534,008,400	156,987,670,400	546,318,349,108	394,563,935,939	6	86,870,843,761	87,052,745,377		99,290,181,840	123,568,195,849
							NPV =	181,901,616		NPV =	24,278,014,00

Table 3.1.52 Cases for Sensitive Analysis (SA5) / Project Cost Estimation

Case	Cost	Benefit	Base Cost and Benefit	Remarks
SA 5 (O&M Cost up)		O&M Cos	t up to 3%	

North Naw		Frien	with the same of t																		
,			CASI	Conversion		Figancial		Comerción	Wines &	Figan	ial	Conversion	Was Taken	Financial		Conversion	Name of the last	Financ	nal	Conversion	
,		FC 94	(0	Factor	Economic	FC	I.C.	Factor	Economic	FC.	Le	Factor	Economic	PC PC	(C	Factor	Boondmic	FC	LC	Factor	Economic
	win	5,670,592		1,00	5,670,592	2041,824	6	1 00	2257825	925,100		100	92+,(00		-	9					
	Total	-	6,306,6)7		5,107,801	- 4	1937,539		1650,506		867,571		744,482		9	The state of the s	90		7		
	Material		1,000,000	.099	1,279,080		171,846	0.99	763 613		-552419	0.99	364,138		7		1				
	Skilled Labor	-	7048/6/4	1(4)	2,019,876	14	967(878)	1.00	=67 8 °E		7862	1.00	200 339					4			
1	Unskilled Labor	-	3,010,741	0.00	1,808,845		698,325	17 60	+18,995		199,013	0.60	1"9, 408				1				
South Naw	win	1,592,202		130	1,592,202	1,366,857		7.00	4,3714,83	4,569,561).06	→,169 26		-	4	3				
	Total		1,346,120		1,293,830		T. 1447,396		2,986,175		3880131		3,355,230								
LC	Material	-	214,266	0.39	508,153		1,507.478	0.99	1,281 503		176234	0.99	1 [44 620	1		5)					
200	Skilled Labor	-	419,491	100	414,491		70 (1007	±00	740,047		749.692	1.00	849,692			5)	1				
	Unskilled Labor	-	618,645	060	371,186		1,105,041	0.80	663,625		1,365797	580	760 9 18				- 1				
Wedy		-							19	9,945,782		.100	9 94* 784	8,539,760	-	100	8,499,769	3,449,172		1,00	7,449 1
	Total	-									83 707 19		= 245.691		6,381,854		5.684.890		5,387,825		4191
LC	Material	-		-	1 3		9		- 1		= 341,745	0.99	1,719 728		(6,116)	0.99	3,567,428		24140	099	.1919,0
LC -	Skilled Labor	-							1		11/6/63/9	1.06	2176.689		1.117.091	1.00	1.117.091		-57_43	1.00	991,2
	Unskilled Labor	-									3.248,790	(160)	1,949 274	- 1	1.667,300	6'60	1,000,380		1,453,055	0.50	8-8
Taung Nyo	yo	-							- 4	1,855,500		100	4(855,500)	¥,186.706		1.00	3,856,706	1726%		100	3 -77 6
	Total				-						3,927,821		5,764 619		4,531,598		4/369/841		5:81799		2,67,6
	Manenal			-	1	-			- 3		Jan 190	0.99	3,978,357		3,863,999	999	-04007		F.849(157)	0.99	820
te	Willed Labor	-							1-		573,090	1 00	\$1,000		105,169	1.00	375165		75,161	(100	378 (
	Unstalled Labor										885,372	0.60	513,923		361321	0.60	335,655		16(42)	0,60	338,6
5ab Ental(FC-	0-10	7,262,791	7,879,007		13.864.405	6,967,662	5,387,115		12,399,393	20.259.645	16852442		34,808,729	14,278,477	10.919.360		24.451.223	11171248	£169.580		18 183.5
Machinene	es	5,914,204		1.00	1,912,304	2871,366		100	8.571,306											0 1	
Flocureme			- J	4/99			147.855	0.99	146,371							- 4					
Engineering Se	Senice															-					
Engineering Seint						2838,000		1.00	2.833,640												
							*29,814	699	132,326					1							
Suprement Servi	vice ist i					1.142.140		100	1,132:13-07	1,147,146		100	1/142.140	1/14/2140		3.00	1/142140	1,142140		1100	2,542.1
7525-17500		1					297,710	099	290 = 3		293,710	0.99	290.771		293,710	0.99	290,773		299.5to	099	
Total		13,176,998	7.873.037		19,578,629	(9,3)9,535	6,557,504		1)6~4.979	21/137,785	17,126(15)	-	6, 48 640	25,618 637	17233.070	- 1	25864136	12373988	8,467.290		199193
notal		12.1.0.992	1.0 (3.107		19.5 8.0.29	04-14/1-8	0.222,504	-	:10~979	21-431-185	11.140.52		10, 218 040	15/610 837	transail	-	-530041.56	12,514,988	8,464,290		140,197
al Contingency	5%	668,850	292,652	-	978,931	970,951,400	327,675-300		108 146.950	1,071 889 250	8= 307 600		1841,932 000	80,930 850	260, 684		1.293,767	615,699,000	123, 164,500		9957193
(FU=LC)	NO PA	136,279	1811,304		1,366,443	656,766 200	538,211.500		1,120,434 300	2.029.564 500	± 685,2 ± 200		3, 80,513, 00	1,447.64 1 100	1 09 1,936		3 443,833	1/117.484 800	816,958000		848.259.50
Sub-Total		14,562,127	9,053,993		21:924:000	31,046,571,600	7,119,390,700		23 858,320	24 539 239	19,688,704		(1,531,145	17.84 7.195 350	12.865,660		39,600,765	14,0468 2 200	9 703 /12 500		22.759.5
and Total(FC=L©)			23,676,120				28,466,262				44,227,949				20 72856				23,750,287		
78M	9.5%					39.533	23,619	-	58,735.887	97,788,439	43,279/623		(23,700.7847)	162(101.79)	94,718.079		232416624	308.957.634	128,357,189		310,009,03

Table 3.1.53 Cases for Sensitive Analysis (SA5) / Project Cost and Benefit Estimation

Particula s		FC/LC	Total	Ratio %	2014	2015	2016	2017	2018	2019	2020	Remarks
Implementation									20.0			
1. Civil & Structure Construction												
1 1 North Nawin	-	FC	8 853 517,000	49	5,670,592,000	2,257,825,000	925,100,000					
7,7110101.11011.11		LC	9_131_937,000	51	6.326,617,000	1,937,549,000	867,771,000					
		(unskilled labors)	4 012 079,000	44	3 014 741 000	698 325 000	299 013 000					
				1.000000								
100 # 5		Sub Total (FC+LC)	17,985,454,000	100	11,997,209,000	4,195,374,000	1,792,871,000	0				
1 2 South Naw n		FC	10 471,300,000	54	1,592,202,000	4,309,837,000	4,569 261,000					
		LC	8,871,117,000	46	1 546 420 000	3,444,566,000	3,880 131,000					
		(unskilled labors)	2,992,881,000	34	618,643,000	1,106,041,000	1,268, 197,000					
Car.		Sub Total (FC+LC)	19,342,417,000	100	3 138 622 000	7.754,403,000	8,449,392,000	0				
1.3 Wegyi		FC	25,984,725,000	56	171 171		9,945,784,000	8,589,769,000	7,449,172,000			
		LC	20,352,398,000	44			8 576 719 000	6 38 7 854,000	5,387,825,000			
		(unskilled labors)	6,379,155,000	31			3,248,790,000	1,667,300,000	1,463,065,000			
34		Sub Total (FC+LC)	46 337 123,000	100			18 522 503 000	14,977,623,000	12 836 997 000			
1.4 Taung Nyo		FC	14 464 884 000	57			4 855 500 000	5.886.708.000	3 722 676 000			
		LC	10.841.082.000	43			3.527.821.000	4.531.506.000	2.781.755.000			
		(unskilled labors)	2 348 591 000	22			855 372 000					
		Sub Total (FC+LC)	25 305 966 000	100			8 383 321 000					
Total of Civil & Structure Construction		FC	59.774.426.000	55	7.262.794.000	6.567,662,000	20,295,645,330				-	
Total of Office Constitution		LC	49 196 534 000	45	7 873 037 000	5,382,115,000	16 852 442 000					
		(unskilled labors)	15,732,706,000	32	3 633 384 000	1,804,366,000	5,671,372,000					
		Total (FC+LC)	108 970,960,000	100	15,135,831,000	11,949,777,000		25 395 837,000				
2 Machineries Procurement							3/ 146 06 / 000	25 395 63 / 1000	19 34 1 428,000			
Z IVacninenes Procurement		FC	14,785,510,000	99	5,914,204,000	8,871,306,000						
		LC	147,855,100	1		147,855,100						
		Total (FC+LC)	14 933 365,100	100	5 914,204 000	9 0 19 161 100	.0	.0				
5 Engineering Service			0									
5.1 Engineering Service (DD)		FC	2 838 040 000	80		2,838,040,000						
		LC	729,824,000	20		729,824,000						
		Total (FC+LC)	3 567 864 000	100		3,567,864,000	0	0				
5 2 Engineering Service (SV)		FC	4,326,290,000	80		1,142,140,000	1,142,140,000	1,142,140,000	899,870,000			
- M		LC	1,112,540,000	20		293,710,000	293,710,000	293,710,000	231,410,000			
		Total (FC+LC)	5 438 830,000	100	i	1,435,850,000	1,435,850,000	1,435,850,000	1,131,280,000			
		1041110.507	0,100,000,000	,		1,100,000,000	1,100,000,000	1,100,000,000	1,101,200,000			
A STATE OF A PARTY												
1.1 Total of 1, 2, 5 (FC)		FC	81.724,266,000	61	13,176,998,000	19,419,148,000	21,437,785,000					
1.2 Total of 1.2.5 (LC)		LC	51.186.753,100	39	7,873,037,000	6,553,504,100	17,146,152,000	11 213,070,000	8,400,990,000			
1.3 Total of 1.2.5 (Unskilled Labors)		(unskilled labors)	15,732,706,000	31	3,633,384,000	1,804,366,000	5,671,372,000	2,596,094,000	2,027,490,000			
1.4 Total of 1.2.5 (Grand Total)		Total (FC+LC)	132 911 019,100	100	21,050,035,000	25,972,652,100	38,583,937,000	26,831,687,000	20,472,708,000			
					- /,,		,,,	,,,,				
2.1 Physical Contingency (5% of 1.1)	5%	FC	4 086 213,300	61	658,849,900	970,957,400	1,071,889,250	780,930,850	603,585,900		-	
2.2 Physical Contingency (5% of 1.2)	5%	LC	2,559,337,655	39	393,651,850	327,675,205	857,307,600					
	5%		786 635,300	39	181,669,200	90 218 300	283,568,600	129,804,700				
2.3 Physical Contingency (5% of 1.3)				100			1 929 196 850					
2.4 Physical Contingency (5% of 1.4)	5%	Total (FC+LC)	6 645 550,955	100	1,052,501,750	1,298,632,605	1,929, 190,850	1,341,364,350	1,023,635,400			
17.1.1.1.1.1.1.1			05 040 170 0		40.005.047.555	00 000 ADT	00 500 074 050	40.000.547.550	40.075.000.000			
3.1 Total of 1.1 & 2.1		FC	85 810 479,300	61	13,835,847,900	20,390,105,400			12,675,303,900			
3.2 Total of 1 1 & 2 2		LC	53,746,090,755	39	8,266,688,850	6,881,179,305	18,003,459,600					
3 3 Total of 1.1 & 2 3		(unskilled labors)	16,519,341,300	31	3,815,053 200	1,894,584,300	5,954,940,600					
3 4 Total of 1.1 & 2 4		Total (FC+LC)	139,556,570,055	100	22,102,536,750	27,271,284,705	40,513,133,850	28 173 271 350	21,496,343,400			
						17.64	-34					
4. Project Management (10% of 1)	10%	LC	10,897,096,000	100	1,513,583,100	1,194,977,700	3,714,808,700	2 539 583,700	1,934,142,800			
5. Others (Miscellaneous, 5% of 1-2)	5%	LC	5,744,258,200	100	1,052,501,750	597,488,850	1,857,404,350	1,269,791,850	967,071,400			
79.9	104							D. 77				
5.1 Grand Total Cost for Project Evaluation		FC	85,810,479,300	55	13,835,847,900	20,390,105,400	22,509,674,250	16.399.547 850	12,675,303,900			
6.2 Grand Total Cost for Project Evaluation		LC	70.387.444,955	45	10,832,773,700	8,673,645,855	23,575,672,650					
6,3 Grand Total Cost for Project Evaluation		Total (FC+LC)	156,197,924,255	100	24,668,621,600	29,063,751,255			24,397,557,600			
T. D. D. C.		TOWN TO TECT		(HOO)	27,000,021,000	23,003,131,233	.0,000,040,000	5,1502,040,300	2-4,001,001,000			
7.0	5 202	10				C2 450 105	42C 0EC 0 10	227 504 400	242 000 004	274 7+0 075		371.712.975
7 Operation and Maintenance	0.30%	LC				63,150,105	126,056,919	237,501,180	313,600,691	371.712.975		311112915

nefit	1 1					1	1		
igriculture Production 1 North Nawin									
1 North Nawin									
1.1.1 Black Gram (a) Increase of Sawn Area (ac)			10,192 16	15,178.42	0.00				
(b) Gross Profit (KVac)			328,000	328 000	328,000	328,000			
(c) Input Cost (kt/ac)			37,086	328,000 37,086 28,258	37 086 28 258	37.086	<u> </u>		
(d) Family Labor (kVac)			37,086 28 2 58	28.258	28 258	37,086 28,258			
(e) Hired Labor (kVac) (f) Unit Net Profit (kVac)			36 535 226 121 2 304 661 411	39.441 223.215 3.388.051.020	39,441 223,215	37,188 225,468			
		3	2 304 661 411	3 388 051 020	223 215	225,468			
(h) Accumulated Net Profit (lict)	+	2	2 304 661 411	5.692.712.431	5,692 712 431	5,692 712 431	5 692 712 431	5.692.712.431	
2 South Nawin									
1.2.1 Black Gram (a) Increase of Nawn Area (ac)									
(a) Increase of Sawn Area (ac) (b) Gross Profit (KVac)			17,608 66 250 167 38,684	22,141 91 250 167 38,684	18,705.22 250,167	0 00 250 167	0.00		
(c) Input Cos (kt/ac)			38 684	38 684	38,684	38,684			
(d) Family Labor (kVac) (e) Hired Labor (kVac)			26 176	26 176	26,176	26,176			
(e) Hired Labor (kVac)			26 176 36 535	26 176 36 535 148,772	26,176 36,535 148,772	26,176 36,535			
(f) Unit Net Profit (Vac)			148,772	148,772	148,772	148,772			
(g) Net Profit (Kt) (h) Accumulated Net Profit (Kt)		2,	2 619 675 566 2 619 675 566	3 294 096 235 5 913 771 801	2 782 812 990 8 696 584 791	8,696,584,791	8 696 584 791	8.696,584,791	
3 Wegy 1 3 1 Black Gram			1010,01000	3313777001	0.000.004.751	0.000,004,757	0,050,504,751,	0.000,004,751	
1 3 1 Black Gram									
(a) Increase of Sawn Area (ac) (b) Gross Profit (KVac)					2 268 72	0 00	433.17		
(b) Gross Profit (KVac) (c) Input Cost (kVac)					250,167	328,000	153 494		
(d) Family Labor (kVac)					250,167 38,684 26,176	328,000 37,086 28,258	26.644		
(e) Hired Labor (kVac)					36.535	39.441	37 188		
(e) Hired Labor (kVac) (f) Unit Net Profit (kVac)					36,535 148,772	39,441 223,215	153 494 15 476 26 644 37 188 74 186		
(g) Net Profit (kt) (h) Accumulated Net Profit (kt)					337 522,012 337 522,012	0	32 135 150 369,657 162		
(h) Accumulated Net Profit (K.t) I Taung Nyo	_				337 522,012	337,522,012	369,657,162	369,657,162	
4 1 Black Gram	-						-		
(a) Increase of Sawn Area (ac)					9.104.47	10,683 44	10 926 80		
(b) Gross Profit (KVac) (c) Input Cost (kVac)					250.167	328,000	153,494		
(c) Input Cost (kt/ac)					38,684	37,086	15,476		
(d) Family Labor (kVac)	-				26.176	28,258	26.644		
(e) Hired Labor (kVac) (f) Unit Net Profit (kVac)	_				148 772	223 215	74 186		
					1,354,490,211	2.384.704.060	810 615,585		
(h) Accumulated Net Profit (h.t)				Telegraphy and	1354,490,211	10,683 44 328,000 37,086 28,258 39,441 223,215 2,384,704,060 3,739,194,271 18,466,013,505	4,549,809,856	4,549,809,856	
		4,92/	24.336.977	11,606,484.232	16.081 309.445	18 466 013 505	19 308 764 240	19 308 764,240	
oad Improvement North Nawin									
1.1 Moneyon Paddy for three hing									
(a) Area Improved (ac) (b) Cost before Rehabilitation (kt)			0	0	0		0		
(b) Cost before Rehabilitation (kt)			0	0	0	0	0		
(c) Cost after Rehabilitation (Kt)			0	0	0		0		
1.2 Nummer Paddy for threehing	+ + + +			0	0.1	0	0		
(a) Area Improved (ac)	+		2,998 44	1,110.53	0,00	0.00	0.00	0.00	
(a) Area Improved (ac) (b) Cost before Rehabilitation (kt) (c) Cost after Rehabilitation (Kt)			179.906.400	66,631,800	0.50	0.50	0.50	0	
(c) Cost after Rehabilitation (Kt)			63,515,955	66,631,800 23,524,357 159,497,888	o o	0	0	0	
		1	116,390,445	159,497,888	159497888	159,497,888	159,497,888	159,497,888	
(a) Monsoon Paddy Cultivation (kyat) (b) Summer Paddy Cultivation (kyat)			9,551,109	3 5 3 7 4 4 7	_				
(b) Summer Paddy Cultivation (kyat)			1 688,122	625,228	0	_			
(c) Black Gram Cultivation (kvat)	+ + + + + + + + + + + + + + + + + + + +		12.939.351	4.792.358	0				
(d) Accumulation above (kvat)			12,939,351 24,178,582	4 /92 358 33 133 615	33,133,615	33 ,133 ,615	33,133,615	33.133.615	
2 South Nawin 1 2 1 Monsoon Paddy									
(a) Area Improved (ac)				0	0	0			
(a) Area Improved (ac) (b) Cost before Rehabilitation (kt)	-		- 0	0	0	0	0		
(c) Cost after Rehabilitation (Rt)	1		ő	Ö	0	0	0		
(d) Net Profit (Rt)			Ö	0	Ö	0	0		
2.2 Summer Paddy				4.400.00					
(a) Area Improved (ac) (b) Cost before Rehabilitation (kt)			2,245 49 134,729,400 47,566,215 87 163 185	1 464 45 87 867 000	0.00	0.00	0.00	0 00	
(b) Cost before Rehabilitation (kt) (c) Cost after Rehabilitation (Kt)	1	1	47 566 215	31,021,444	0	0	0	0	
			87 163 185	144 008 741	144 008 741	144 008 741	144 008 741	144 008 741	
2.3 Improvement of Trollergy Driving Condition									
			13,488,602 1.264,211	8,796,914	0				
(b) Summer Paddy Cultivation (kyat) (c) Black Gram Cultivation (kyat)			1 264,211	824 485	0				
(d) Accumulation above (kimt)			28 326 064 43,078 877	824 485 18,473 520 71 173 796	71,173,796	71,173,796	71,173,796	71,173 796	
Wegy 3 1 Monsoon Paddy			-3,070,077				r 1 1 r 4 / 30	, 50	
3 1 Monsoon Paddy							27.00		
(a) Area Improved (ac) (b) Cost before Rehabilitation (kt) (c) Cost after Rehabilitation (kt)					13,413 39 934,966 937	5,412.42	0.00	0 00	
(c) Cost after Rehabilitation (kt)					934 966 937 284 135 840	377 267 324 114 651 293	0	0	
(d) Net Profit (Kt)	_				650,831,097	913,447 128	913,447,128	913,447,128	
3.2 Summer Paddy (a) Area Improved (ac)									
(a) Årea Improved (ac)					772 64	5,420 55	1,602 91	0 00	
(b) Cost before Rehabilitation (kt)					46,358,400	325 233,000	96,174,600 33,954,443	0	
(c) Cost after Rehabilitation (kt) (d) Net Profit (kt)	_				16.366,833 29,991,567	114 823 511 240 401,056	33 954 443	302,621,213	
(a) Her Froit (M) 3.3 Improvement of Trollergy Driving Condition (a) Monsoon Paddy Cultivation (kyat) (b) Summer Paddy Cultivation (kyat)	-							302,021,213	
(a) Monsoon Paddy Cultivation (kyat)					7,551,739 434,996	3,047,192	30 618,220 5 878 593	1	
(b) Summer Paddy Cultivation (kyat)					434,996	3,047,192 3,051,770 4,175,529 28,609,271	5 878 593		
(c) Black Gram Cultivation (kyat)					10,348,045 18,334,780	4.175.529	3 458 976	5 m 4 E 4 D 7 T	
d) Accumulation above (kyat)					18,334,780	28 609 271	68 565 060	68 565 060	
to Accommunication above (syst) Taung Nyo 4.1 Mensoon Paddy a) Area Improved (ac) b) Cost before Rehabilitation (kt)	-								
a) Area Improved (ac)	1				16,499 76	10,233,56	0 00	0 00	
b) Cost before Rehabilitation (kt)					1,150,099,271 349,514,416	713 320 066	0	0	
(c) Cost after Rehabilitation (Kt)					349,514,416	216 777 501	0	0	A
(c) Cost after Refiabilitation (Kt) (d) Net Profit (kt) 4.2 Summer Paddy					800.584.855	1 297 127 420	1 297 127 420	1 297 127 420	
4.2 Summer Paddy						1 156 76		0 00	
(a) Area Improved (ac) (b) Cost be ore Rehab litation (*t)					1 324 97 79 498 200	69 405 600	0.00	0 00	
(c) Cost after Rehabilitation (kt)					28.066.840	69,405,600 24,503,647	0	0	
(d) Net Profit (Rt) 1.3 Improvement of Trollergy Driving Condition					51,431360	96 333 313	96,333,313	96.333,313	
1.3 Im provement of Trollergy Driving Condition					9,289,365	5,761 494	0		
1.3 Improvement of Trollergy Driving Condition (a) Monsoon Paddy Cultivation (kyat)					745.958	651 256	0		
1.3 Improvement of Trollergy Driving Condition (a) Monsoon Paddy Cultivation (kyat) (b) Summer Paddy Cultivation (kyat)									
(a) Monsoon Paddy Cultivation (kyat) (b) Summer Paddy Cultivation (kyat) (c) Black Gram Cultivation (kyat)					19.507,666	12 099 138	48.054.977	48 054 877	
1 3 Im provement of Trollergy Driving Condition (a) Minsoon Paddy Cultivation (kyat) (b) Summer Paddy Cultivation (kyat) (c) Black Gram Cultivation (kyat) (d) Accumulation abow (kyat) Sub-lotal of Road Improve Beneft (kt)			270 811 089	407 814 040	745.958 19.507.666 29.542.989	12 099 138 48 054 877 3 031 787 105	48,054,877 3 133 963 051		

Table 3.1.54 Cases for Sensitive Analysis (SA5) / Financial Cost and Benefit Analyses

						FIRR =	15.3%		B/C =	1.22	
Year		Cost (kyat)		Benefit	Benefit -Cost	Present	Presen	t Value	Present	Presen	t Value
I cai		Cost (Kyat)		(kyat)	(kyat)	Value Factor	Discout Rate	15.3%	Value Factor	Discout Rate	12.0%
	Investment	O & M	Total	Total			Cost	Benefit		Cost	Benefit
1	23,616,120,000		23,616,120,000	0	-23,616,120,000	0.86730	20,482,260,876	0		21,085,888,903	0
2	28,466,262,000	63,150,000	28,529,412,000	5,195,148,066	-23,334,263,934	0.75221	21,460,109,001	3,907,842,327	0.79719	22,743,361,952	4,141,520,087
3	44,227,943,000	141,068,061	44,369,011,061	13,595,014,920	-30,773,996,141	0.65240	28,946,342,816	8,869,387,734	0.71178	31,580,974,693	9,676,659,720
4	30,712,856,000	256,819,872	30,969,675,872	19,113,096,550	-11,856,579,322	0.56583	17,523,571,699	10,814,763,421	0.63552	19,681,848,410	12, 146, 755, 119
5	23,750,285,000	337,314,933	24,087,599,933	21,599,976,556	-2,487,623,377	0.49074	11,820,748,791	10,599,972,495	0.56743	13,668,026,830	12,256,474,697
6		337,314,933	337,314,933	21,599,976,556	21,262,661,623	0.42562	143,567,982	9,193,382,022	0.50663	170,893,865	10,943,196,123
7		337,314,933	337,314,933	21,599,976,556	21,262,661,623	0.36914	124,516,434	7,973,415,346	0.45235	152,584,410	9,770,749,395
8		337,314,933	337,314,933	21,599,976,556	21,262,661,623	0.32016	107,994,749	6,915,448,494	0.40388	136,234,755	8,723,798,531
9		337,314,933	337,314,933	21,599,976,556	21,262,661,623	0.27767	93,662,237	5,997,665,490	0.36061	121,639,138	7,789,167,546
10		337,314,933	337,314,933	21,599,976,556	21,262,661,623	0.24083	81,235,555	5,201,922,354	0.32197	108,605,289	6,954,544,452
11		337,314,933	337,314,933	21,599,976,556	21,262,661,623	0.20887	70,454,970	4,511,587,103	0.28748	96,971,297	6,209,561,260
12		337,314,933	337,314,933	21,599,976,556	21,262,661,623	0.18115	61,104,600	3,912,835,753	0.25668	86,581,997	5,544,281,982
13		337,314,933	337,314,933	21,599,976,556	21,262,661,623	0.15712	52,998,922	3,393,788,316	0.22917	77,302,463	4,950,066,627
14		337,314,933	337,314,933	21,599,976,556	21,262,661,623	0.13627	45,965,906	2,943,428,805	0.20462	69,021,382	4,419,787,203
15		337,314,933	337,314,933	21,599,976,556	21,262,661,623	0.11818	39,863,879	2,552,685,229	0.18270	61,627,438	3,946,315,717
16		337,314,933	337,314,933	21,599,976,556	21,262,661,623	0.10250	34,574,781	2,213,997,597	0.16312	55,022,812	3,523,388,176
17		337,314,933	337,314,933	21,599,976,556	21,262,661,623	0.08890	29,987,298	1,920,237,916	0.14564	49,126,547	3,145,820,586
18		337,314,933	337,314,933	21,599,976,556	21,262,661,623	0.07710	26,006,981	1,665,358,192	0.13004	43,864,434	2,808,860,951
19		337,314,933	337,314,933	21,599,976,556	21,262,661,623	0.06687	22,556,250	1,444,390,432	0.11611	39,165,637	2,507,973,278
20		337,314,933	337,314,933	21,599,976,556	21,262,661,623	0.05800	19,564,266	1,252,798,640	0.10367	34,969,439	2,239,269,570
21		337,314,933	337,314,933	21,599,976,556	21,262,661,623	0.05030	16,966,941	1,086,478,821	0.09256	31,221,870	1,999,293,830
22		337,314,933	337,314,933	21,599,976,556	21,262,661,623	0.04363	14,717,051	942,406,977	0.08264	27,875,706	1,785,022,063
23		337,314,933	337,314,933	21,599,976,556	21,262,661,623	0.03784	12,763,997	817,343,113	0.07379	24,890,469	1,593,862,270
24		337,314,933	337,314,933	21,599,976,556	21,262,661,623	0.03282	11,070,676	708,911,231	0.06588	22,222,308	1,423,006,456
25		337,314,933	337,314,933	21,599,976,556	21,262,661,623	0.02846	9,599,983	614,735,333	0.05882	19,840,864	1,270,510,621
26		337,314,933	337,314,933	21,599,976,556	21,262,661,623	0.02469	8,328,306	533,303,421	0.05252	17,715,780	1,134,430,769
27		337,314,933	337,314,933	21,599,976,556	21,262,661,623	0.02141	7,221,913	462,455,498	0.04689	15,816,697	1,012,822,901
28		337,314,933	337,314,933	21,599,976,556	21,262,661,623	0.01857	6,263,938	401,111,565	0.04187	14,123,376	904,391,018
29		337,314,933	337,314,933	21,599,976,556	21,262,661,623	0.01610	5,430,770	347,759,623	0.03738	12,608,832	807,407,124
30		337,314,933	337,314,933	21,599,976,556	21,262,661,623	0.01397	4,712,290	301,751,672	0.03338	11,259,572	721,007,217
Total	150,773,466,000	9,231,226,191	160,004,692,191		439,497,957,801		101,284,163,858	101,501,164,920		110,261,287,165	134,349,945,289
	•		1			•	NPV =	217,001,062	1	NPV =	24,088,658,124

Table 3.1.55 Cases for Sensitive Analysis (SA4) / Economic Cost and Benefit Analyses

					E RR =	22.2%		B/C =	1.66	
	Cost (kyat)		Benefit	Benefit -Cost	Present Value	Preser	nt Value	Present Value	Preser	t Value
	Cost (kyat)		(kyat)	(kyat)	Factor	Discout Rate	22.2%	Factor	Discout Rate	12.0%
Investment	O&M	Total	Total			Cost	Benefit		Cost	Benefit
21,924,003,000		21,924,003,000	0	-21,924,003,000	0.81833	17,941,069,375	0	0.89286	19,575,065,319	
23,858,120,000	63,150,000	23,921,270,000	6,684,353,535	-17,236,916,465	0.66966		4,476,244,188	0.79719	19,069,797,231	5,328,699,79
41,531,145,000	141,068,061	41,672,213,061	17,053,505,075	-24,618,707,986	0.54801	,	9,345,491,316	0.71178	29,661,447,813	12,138,343,84
29,600,465,000	256,819,872	29,857,284,872	24,053,704,606	-5,803,580,266	0.44845		10,786,883,831	0.63552	18,974,901,682	15,286,610,3
22,759,543,000	337,314,933	23,096,857,933	27,165,281,249	4,068,423,316	0.36698	, , , ,	9,969,114,913	0.56743	13,105,850,097	15,414,395,5
	337,314,933	337,314,933	27,165,281,249	26,827,966,316	0.30031	101,299,048	8,158,005,612	0.50663	170,893,865	13,762,746,43
	337,314,933	337,314,933	27,165,281,249	26,827,966,316	0.24575	82,895,145	6,675,867,867	0.45235	152,584,410	12,288,214,9
	337,314,933	337,314,933	27,165,281,249	26,827,966,316	0.20111	67,837,406	5,463,209,712	0.40388	136,234,755	10,971,513,7
	337,314,933	337,314,933	27,165,281,249	26,827,966,316	0.16457	55,511,919	4,470,590,335	0.36061	121,639,138	9,796,072,0
	337,314,933	337,314,933	27,165,281,249	26,827,966,316	0.13468	45,429,575	3,658,620,079	0.32197	108,605,289	8,746,405,6
	337,314,933	337,314,933	27,165,281,249	26,827,966,316	0.11021	37,175,479	2,993,885,646	0.28748	96,971,297	7,809,475,0
	337,314,933	337,314,933	27,165,281,249	26,827,966,316	0.09019	30,422,434	2,450,036,716	0.25668	86,581,997	6,972,784,3
	337,314,933	337,314,933	27,165,281,249	26,827,966,316	0.07380	24,893,842	2,004,797,756	0.22917	77,302,463	6,225,467,5
	337,314,933	337,314,933	27,165,281,249	26,827,966,316	0.06040	20,373,822	1,640,782,987	0.20462	69,021,382	5,558,559,8
	337,314,933	337,314,933	27,165,281,249	26,827,966,316	0.04942	16,670,104	1,342,508,199	0.18270	61,627,438	4,963,096,8
	337,314,933	337,314,933	27,165,281,249	26,827,966,316	0.04044	13,641,016	1,098,563,974	0.16312	55,022,812	4,431,200,6
	337,314,933	337,314,933	27,165,281,249	26,827,966,316	0.03310	11,165,124	899,170,809	0.14564	49,126,547	3,956,351,5
	337,314,933	337,314,933	27,165,281,249	26,827,966,316	0.02708	9,134,488	735,635,816	0.13004	43,864,434	3,532,573,1
	337,314,933	337,314,933	27,165,281,249	26,827,966,316	0.02216	7,474,899	601,982,632	0.11611	39,165,637	3,154,160,8
	337,314,933	337,314,933	27,165,281,249	26,827,966,316	0.01814	6,118,893	492,778,202	0.10367	34,969,439	2,816,224,7
	337,314,933	337,314,933	27,165,281,249	26,827,966,316	0.01484	5,005,754	403,132,774	0.09256	31,221,870	2,514,418,4
	337,314,933	337,314,933	27,165,281,249	26,827,966,316	0.01215	4,098,376	330,058,167	0.08264	27,875,706	2,244,938,8
	337,314,933	337,314,933	27,165,281,249	26,827,966,316	0.00994	3,352,910	270,022,896	0.07379	24,890,469	
	337,314,933	337,314,933	27,165,281,249	26,827,966,316	0.00813	2,742,370	220,853,737	0.06588	22,222,308	1,789,648,7
	337,314,933	337,314,933	27,165,281,249	26,827,966,316	0.00666	2,246,517	180,920,773	0.05882	19,840,864	1,597,861,8
	337,314,933	337,314,933	27,165,281,249	26,827,966,316	0.00545	1,838,366	148,050,783	0.05252	17,715,780	1,426,720,5
	337,314,933	337,314,933	27,165,281,249	26,827,966,316	0.00446	1,504,425	121,157,154	0.04689	15,816,697	1,273,780,0
	337,314,933	337,314,933	27,165,281,249	26,827,966,316	0.00365	1,231,200	99,153,277	0.04187	14,123,376	1,137,410,3
	337,314,933	337,314,933	27,165,281,249	26,827,966,316	0.00298	1,005,199	80,952,538	0.03738	12,608,832	1,015,438,2
	337,314,933	337,314,933	27,165,281,249	26,827,966,316	0.00244	823,048	66,283,286	0.03338	11,259,572	906,777,0
139,673,276,000	9,231,226,191	148,904,502,191	747,404,522,155	605,184,373,499	4	79,216,452,207	79,184,755,975		101,888,248,519	169,064,417,
						NPV =	-31,696,232		NPV =	67,176,168,6

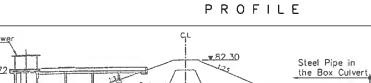
APPENDIX-V

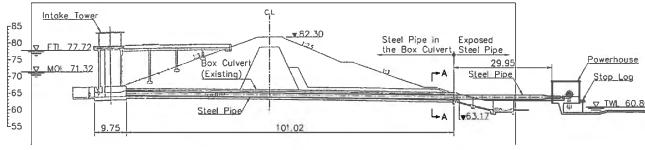
SMALL HYDROELECTRIC GENERATION

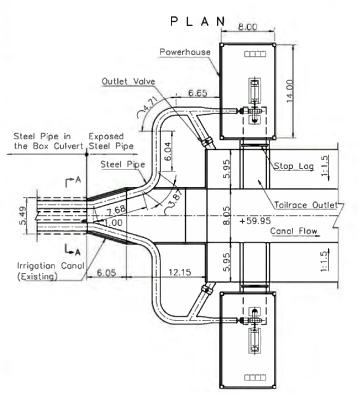
APPENDIX V: SMALL HYDROELECTRIC GENERATION

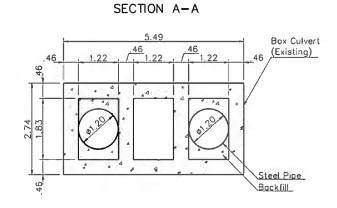
TABLE OF CONTENTS

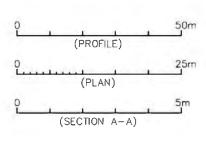
5.1	Conceptual Arrangement of Hydroelectric Power Plant at Taung Nyo Dam	V-1-1
5.2	Conceptual Arrangement of Distribution Facility in the Hydroelectric Power	
	Development in Taung Nyo Dam	V-1-2
5.3	Conceptual Arrangement of Hydroelectric Power Plant at Wegyi Dam	V-1-3
5.4	Conceptual Arrangement of Hydroelectric Power Plant at No.1 Drop Structure	
	in Wegyi Right Main Canal	V-1-4
5.5	Conceptual Arrangement of Distribution Facility in the Hydroelectric Power	
	Development in Wegyi Dam And Wegyi Right Main Canal	V-1-5











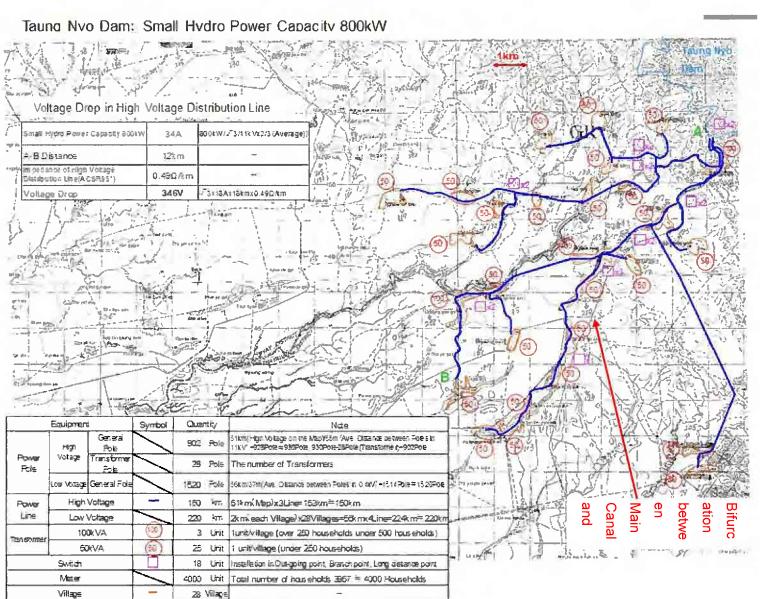
Appendix 5.1 Conceptual Arrangement of Hydroelectric Power Plant at Taung Nyo Dam

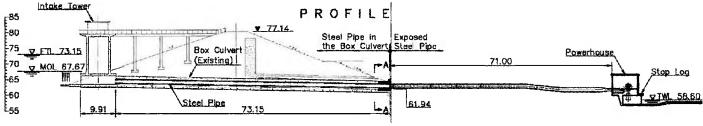
Source: Final Report of Feasibility Study on Small Scale Hydropower Development with Existing Irrigation Dams

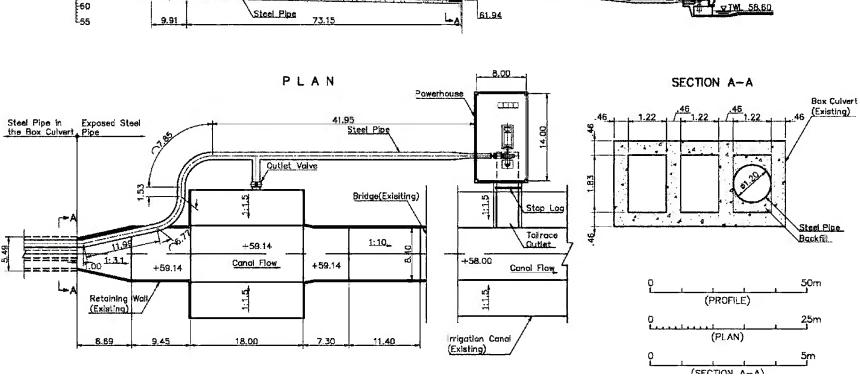
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Appendix 5.2 Conceptual Arrangement of Distribution Facility in the Hydroelectric Power Development in

Source: Final Report of Feasibility Study on Small Scale Hydropower Development with Existing Irrigation Dams Taung Nyo Dam

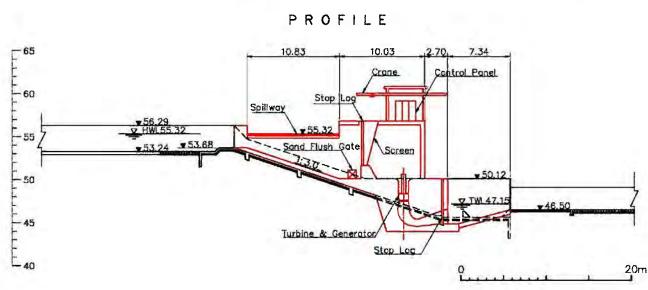






Source: Final Report of Feasibility Study on Small Scale Hydropower Development with Existing Irrigation Dams Appendix 5.3 Conceptual Arrangement of Hydroelectric Power Plant at Wegyi Dam

PLAN 4.56 1.83 1.83 1.52 10.83 10.03 2.70 7.34 +56.29 1:1.5 Sand Flush Gate Spillway Stop Log Screen +50.12 To the last 1:3.0 +46.50 Conal Flow/ +53.24 +46.50 Canal Flow Spillway/ +50.12 Turbine & Generator Retaining Wall (Existing) +56.29 ______



Main Canal

Appendix 5.4 Conceptual Arrangement of Hydroelectric Power Plant at No.1 Drop Structure in Wegyi Right

Appendix 5.5 Wegyi Dam: Small Hydro Power Capacity 500kW betwe ation en Bifurc mall Hydro Power Capacity 500kV 18A 500kW/√3/11kVx2/3(Average A-B Distance 18km Impedance of High Voltage Distribution Line(ACSRSF) $0.49\Omega/km$ Voltage Drop 275V √3x18Ax18kmx0.49Ω&m Equipment Symbol Quantity Note 31km(High Voltage on the Map)/55m(Ave. Distance between Poles in General itkV)=564Fcle=570Fole, 570Fole-15Fole(Transformer Fale)=555Fole High Pole Power Voltage Transforme The number of Transformers Pole Low Voltage General Pole 810 Pole 30km/37m/Ave. Distance between Poles in 0.4kV)=811Pole \$10Pole High Voltage 100 km 31km(Map)x3Line=93km\= 100km **Power** Line Low Voltage 2km(each Village)x15Villages=30kmx4Line=120km 100kVA (100) 1unit/village (over 250 households under 500 households) rans for me 50kVA 12 Unit 1 unit/village (under 250 households) Switch nstallation in Out-going point, Branch point, Long distance point Meter 2800 Unit Total number of households 2766 = 2800 households Village 15 Village

Wegyi Dam and Wegyi Right Main Canal

Source: Final Report of Feasibility Study on Small Scale Hydropower Development with Existing Irrigation Dams

V-1-5

APPENDIX-VI

PROCUREMENT OF MACHINERIES

APPENDIX VI: PROCUREMENT OF MACHINERIES

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CHAPTER 1 PROCUREMENT OF MACHINERIES

1.1 Procurement of Construction Machines

The equipment list is prepared, as shown below, for the required construction machineries for the rehabilitation works in Wegyi and Taung Nyo Irrigation Schemes. For North Nawin and South Nawin Irrigation Schemes, the Irrigation Department shall allocate the existing machineries. The following table shows; i) the necessary machineries, ii) their specifications and quantities, iii) necessary units by site, and iv) necessary arrangement of the existing machineries owned by the Irrigation Department.

Table 1.1.1 Equipment List for Construction Machineries

			Quantity described in			Necessa Inits by	-		Quantity described	Arranged By ID for		
No.	Equipment Name	Specifications	the Minutes of Discussion on 30 October, 2013	NN	SN	WG	TN	Road	in New Request on 17 July, 2014	1-2 Year for NN/SN		
1	Hydraulic Excavator, Standard	20-25 ton class, long crawler type, 1.0m3 bucket, 120-150kW, Tier-2	16 units	3	4	4	4	1	9	7		
2	Hydraulic Excavator, Long Arm	23-28 ton class, long crawler type, 0.45m3 bucket, 130-160 kW, 15m long arm & boom, Tier-2	8 units	-	4	2	2	-	4	4		
3	Hydraulic Excavator, Small Size	6-7 ton class, crawler type, 0.19-0.28 m3 bucket, 45-50 kW, Tier-2	20 units	5	5	8	2	-	20	10		
4	Hydraulic Breaker/Hammer with Base Machine	20-25 ton class, long crawler type, 120-150kW, Tier-2, equipped with 1300 kg Breaker and Vibro-Hammer	1 unit	-	-	-	-	1	1	-		
5	Tracked Dozer, Class II	21ton class, 150kW output, Tier-2	8 units	1	2	2	2	1	-	3		
6	Tracked Dozer, Class III	9-10 ton class, 75-100kW, Tier-2	8 units	1	2	2	2	1	6	3		
7	Wheel Loader	10-13 ton class, standard type, 2.3m3 teeth excavating bucket, 120-150 kW, Tier-2	andard type, 2.3m3 eth excavating ucket, 120-150 kW,		1		1 1			-	2	1
8	Earth Work Vibration Roller	10-12 ton class, steering type, single drum roller, 80-110kW, Tier-2	4 units	1	1	1	1	(1)	2	2		
9	Agitator Truck (Concrete Mixer Truck)	6×4 drive, drum capacity 9.0m3, 230-250kW, Tier-2	8 units	2	2	2	2	(2)	8	4		

10	Lowbed Semi-Trailer Truck	Trailer maximum loading capacity 25 ton, 230-250kW, Tier-2	2 units	1	1	1	1		2	2
11	Dump Truck	4×4 drive, maximum loading capacity 6-7t, 165kW	10 units	2	2	3	3	-		10
12	Concrete Pump Truck	Boom type, 15m boom length, 80m3/hr concrete pumping capacity, 230-250kW, Tier-2	2 units 1			P .		1	1	
13	Mobile Workshop	4×4 drive, 170-200kW, Tier-2, equipped with tools in aluminum van body	1 lot	1			1			

Note: Note: The numbers in parentheses mean the units for access road rehabilitation to be utilized also for irrigation rehabilitation works.

Abbreviations:

NN: North Nawin Irrigation Scheme SN: South Nawin Irrigation Scheme WG: Wegyi Irrigation Scheme TN: Taung Nyo Irrigation Scheme

1.2 Procurement of Agricultural Machines

The agricultural machineries shall be procured by the strong request by MOAI. The tilling and harvesting services are conducted by Agricultural Mechanization Stations (AMS) of Agricultural Mechanization Department (AMD) in township level. However, AMD does not provide presently the services to Paungde Township in Wegyi Irrigation Scheme. Therefore, AMD will establish a new sub-station at Paungde. Therefore, total five (5) AMSs and Sub-AMS will provide the services for four irrigation schemes. All existing tractors will be replaced by new machineries. The following table shows the machineries and the implements for each AMS. The 15 units of tractors procured under 2012FY 2KR project are not included.

Table 1.2.1 Equipment List for Agricultural Machineries

Sr.No.	Description	No.30 AMS (Pyay Tsp)	No.58 AMS (Paukkhaung Tsp)	No.45 AMS (Nattalin Tsp)	No.94 AMS (Thegone Tsp)	SUB AMS (Paungde Tsp)
1	Tractor Set, 47 HP					
1-1	Tractor, 47 HP	20	29	29	29	13
1-2	Plough Type Disc Harrow (6 discs, for 47 HP)	20	29	29	29	13
1-3	Rotavator (for 47 HP)	20	29	29	29	13
1-4	Front Dozer (for 47 HP)	6	6	5	5	3
2	Tractor Set, 68 HP					
2-1	Tractor, 68 HP	18	18	18	18	8
2-2	Disc Plough (4 discs, for 68HP)	6	6	5	5	3
2-3	Plough Type Disc Harrow (7 discs, for 68 HP)	7	7	9	9	3
2-4	Offset Harrow (18 discs, for 68 HP)	5	5	4	4	2
2-5	Rotavator (for 68 HP)	18	18	18	18	8

Myanmar

2-6	Front Dozer (for 68 HP)	5	5	4	4	2
3	Combine Harvester Set					
3-1	Combine Harvester, 68HP	5	5	5	5	5
3-2	Low Bed Trailer and Tractor	1	1	1	1	1
4	Mini Excavator	1	1	1	1	1
5	Workshop Tools					
5-1	Engine-driven Air Compressor	1	1	1	1	1
5-2	Hydraulic Floor Jack	1	1	1	1	1
5-3	Engineering Tool Set	1	1	1	1	1

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CHAPTER 2 BIDDING DOCUMENTS

The Bidding shall be conducted in two (2) lots or more. The Bidding Documents (Draft) for Construction Machineries and the Bidding Documents (Draft) for Agricultural Machineries are attached hereto.

2.1 Bidding Documents (Draft) for Construction Machineries
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2.2 Didding Document (Diant) for Agricultural Machineriesv	2.2	idding Document (Draft) for Agricultural MachineriesVI	I-2	2-	1.5
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JICA VI-2-1 ID

2.1 Bidding Documents (Draft) for Construction Machineries

Section II. Bid Data Sheet BDS-1

BIDDING DOCUMENTS

for

Procurement of Construction Machineries

Purchaser: Ministry of Agriculture and Irrigation

Country: Republic of the Union of Myanmar

Project: Project for Rehabilitation of Irrigation Facilities in Bago (West) Region

Loan No.: [insert number of Loan Agreement]

BDS-2 Section II. Bid Data Sheet

Section II. Bid Data Sheet

Bid Data Sheet

	C. Preparation of Bids						
ITB 14.8 (a)(iii) and (b)(ii)	"Final destination (Project Site)": Mechanical Circle (3) Workshop of Irrigation Department, Pyay Township, Pyay District, Bago (West) Region						
ITB 14.8 (b)(i)	"Place of destination (Delivery Site)": CIP Yangon at Specified Warehouse in Mechanical Circle (1) Procurement Store of Irrigation Department, 8-1/2 miles, Mayangon Township, Northern District, Yangon						
ITB 18.3	Period of time the Goods are expected to be functioning for operation and maintenance of tractors with implements, combine harvesters and excavators: One (1) Year after issue of complete certificate						
ITB 19.1 (a)	Manufacturer's Authorization is: required for all Goods.						
ITB 19.1 (b)	The Bidder is required to be represented by an agent in the country equipped and able to carry out the Supplier's maintenance, repair and spare parts-stocking obligations.						

Section VI. Schedule of Requirements

Section VI. Schedule of Requirements

Notes for Preparing the Schedule of Requirements

The Schedule of Requirements shall be included in the Bidding Documents by the Purchaser, and shall cover, at a minimum, a description of the Goods and Related Services to be supplied and the Delivery Schedules.

The objective of the Schedule of Requirements is to provide sufficient information to enable Bidders to prepare their Bids efficiently and accurately, in particular, the Price Schedule, for which a form is provided in Section IV. In addition, the Schedule of Requirements, together with the Price Schedule, should serve as a basis in the event of quantity variation at the time of award of contract pursuant to ITB 41.

The date or period for delivery should be carefully specified, taking into account (a) the implications of delivery terms stipulated in the Instructions to Bidders pursuant to the *Incoterms* rules (i.e., EXW, or CIF, CIP, FOB, FCA terms—that "delivery" takes place when goods are delivered to the carriers), and (b) the date prescribed herein from which the Purchaser's delivery obligations start (i.e., notice of award, contract signature, opening or confirmation of the letter of credit).

Section VI. Schedule of Requirements

Line	Description of Goods	Qua	Physical	Final destination	Deliv	ery (as per Inco	terms) date
Item No		ntity unit		(Project Site) as specified in BDS	Earliest delivery date	Latest delivery date	Bidder's offered delivery date [to be provided by the Bidder]
1	Hydraulic Excavator, Standard		9 units	Mechanical Circle (3) Workshop of Irrigation Department, Pyay, Township, Pyay District, Bago (West) Region	[insert the number of days following the date of effectiveness the Contract]	[insert the number of days following the date of effectiveness the Contract]	[insert the number of days following the date of effectiveness the Contract]
2	Hydraulic Excavator, Long Arm		4 units				
3	Hydraulic Excavator, Small Size		20 units				
4	Hydraulic Breaker/ Hammer with Base Machine		1 unit				
5	Tracked Dozer, Class III		6 units				
6	Wheel Loader		2 units				
7	Earth Work Vibration Roller		2 units				
8	Agitator Truck (Concrete Mixer Truck)		8 units				

2. List of Related Services and Delivery Schedule

[This table shall be filled in by the Purchaser. The required delivery dates of Services should be realistic, and consistent with the required Goods delivery dates (as per Incoterms).]

Item No	Description of Service	Quantity	Physical unit	Place where Services shall be delivered	Final delivery date(s) of Services
1	Product Test participated by ID engineers in Japan or other manufacturing country borne by the Supplier	1 lot	3 persons for 8 days	Manufacturer's factories	
2	Dispatch of engineer (s) for Quantity Inspection for the Goods	1 lot	1 person or more	The Delivery Site at Mechanical Circle (1) Procurement Store of Irrigation Department, 8-1/2 miles, Mayangon Township, Northern District, Yangon	

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3	Dispatch of engineer(s) for Test-run, Initial Instruction and Final inspection for the Goods without spare parts	1 lot	3 persons for excavators, tracked dozers and heavy vehicles, or more	The Project Site at Mechanical Circle (3) Workshop of Irrigation Department, Pyay Township, Pyay District, Bago (West) Region
4	Dispatch of engineers for training	1 lot	2 days for excavators, 2 days for tracked dozers 1 day for heavy vehicles	Mechanical Circle (1) Training Center of Irrigation Department, 8-1/2 miles, Mayangon Township, Northern District, Yangon
5	Supply of repairing advices and arrangement of spare parts after the warranty period	1 lot	I qualified engineer for excavator, I for tracked dozer and I for heavy vehicles, or more, of the agents appointed by the Manufacturers	Each agent should be located at Pyay District, Bago (West) Region or Yangon.

3. Technical Specifications

Notes on Technical Specifications

The purpose of the Technical Specifications (TS) is to define the technical characteristics of the Goods and Related Services required by the Purchaser. The Purchaser shall prepare the detailed TS by taking into account that:

- The TS constitute the benchmarks against which the Purchaser will verify the technical responsiveness of Bids and subsequently evaluate the Bids. Therefore, well-defined TS will facilitate preparation of responsive Bids by Bidders, as well as examination, evaluation, and comparison of the Bids by the Purchaser.
- The TS shall require that all Goods and materials to be incorporated in the Goods be new, unused, and of the most recent or current models, and that they incorporate all recent improvements in design and materials, unless provided for otherwise in the contract.
- The TS shall make use of best practices. Samples of specifications from successful similar procurements in the same country or sector may provide a sound basis for drafting the TS.
- The use of metric units is encouraged.
- Standardizing technical specifications may be advantageous, depending on the complexity of the Goods and the repetitiveness of the type of procurement. The TS should be broad enough to avoid restrictions on workmanship, materials, and equipment commonly used in manufacturing similar kinds of goods.
- Standards for equipment, materials, and workmanship specified in the Bidding Documents shall not be restrictive. Recognized international standards should be specified as much as possible. Reference to brand names, catalogue numbers, or other details that limit any materials or items to a specific manufacturer should be avoided as far as possible. Where unavoidable, such item description should always be followed by the words "or substantially equivalent." When other particular standards or codes of practice are referred to in the TS, whether from the Borrower's or from other eligible source countries, a statement should follow other authoritative standards that ensure at least a substantially equal quality, then the standards mentioned in the TS will also be acceptable.
- The TS shall be fully descriptive of the requirements in respect of, but not limited to, the following:
 - (a) Standards of materials and workmanship required for the production and manufacturing of the Goods.

- (b) Detailed tests required (type and number).
- (c) Other additional work and/or Related Services required to achieve full delivery.
- (d) Detailed activities to be performed by the Supplier, and participation of the Purchaser thereon.
- (e) List of detailed functional guarantees covered by the Warranty and the specification of the liquidated damages to be applied in the event that such guarantees are not met.
- The TS shall specify all essential technical and performance characteristics and requirements, including guaranteed or acceptable maximum or minimum values, as appropriate. Whenever necessary, the Purchaser shall include an additional ad-hoc Bidding Form (to be an Attachment to the Letter of Bid), where the Bidder shall provide detailed information on such technical performance characteristics in respect to the corresponding acceptable or guaranteed values.

When the Purchaser requests that the Bidder provides in its Bid a part or all of the TS, technical schedules, or other technical information, the Purchaser shall specify in detail the nature and extent of the required information and the manner in which it has to be presented by the Bidder in its Bid.

"Summary of Technical Specifications. The Goods and Related Services shall comply with following Technical Specifications and Standards:

Item No	Name of Goods or Related Service	Technical Specifications and Standards
1	Hydraulic Excavator, Standard	20-25 ton class, long crawler type, 1.0m³ bucket, 120- 150kW, Tier-2
2	Hydraulic Excavator, Long Arm	23-28 ton class, long crawler type, 0.45m ³ bucket, 130- 160 kW, 15m long arm & boom, Tier-2
3	Hydraulic Excavator, Small Size	6-7 ton class, crawler type, 0.19-0.28 m ³ bucket, 45-50 kW, Tier-2
4	Hydraulic Breaker/ Hammer with Base Machine	20-25 ton class, long crawler type, 120-150kW, Tier-2, equipped with 1300 kg Breaker and Vibro-Hammer
5	Tracked Dozer, Class III	9-10 ton class, 75-100kW, Tier-2
6	Wheel Loader	10-13 ton class, standard type, 2.3m ³ teeth excavating bucket, 120-150 kW, Tier-2
7	Earth Work Vibration Roller	10-12 ton class, steering type, single drum roller, 80- 110kW, Tier-2
8	Agitator Truck (Concrete Mixer Truck)	6×4 drive, drum capacity 9.0m ³ , 230-250kW, Tier-2

Section VI. Schedule of Requirements

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9	Lowbed Semi-Trailer Truck	Trailer maximum loading capacity 25 ton, 230-250kW, Tier-2
10	Concrete Pump Truck	Boom type, 15m boom length, 80m ³ /hr concrete pumping capacity, 230-250kW, Tier-2
11.	Mobile Workshop	4×4 drive, 170-200kW, Tier-2, equipped with tools in aluminum van body

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4. Inspections and Tests

The following inspections and tests shall be performed:

Inspection and Test	Description	Place
1. Product Test	Tested by the Manufacturer(s) for assembled machineries	Manufacturers' factories
2. Pre-shipping Inspection	Inspected by the third party	Shipping warehouse(s) in the exporting countries of the final products
3. Quantity Inspection	Inspected by the Purchaser and the Consultant	The Delivery Site at Mechanical Circle (1) Procurement Store of Irrigation Department, 8-1/2 miles, Mayangon Township, Northern District, Yangon
4. Test-run, Initial Instruction and Final Inspection	Inspected by the Purchaser and the Consultant	The Project Site at Mechanical Circle (3) Workshop of Irrigation Department, Pyay Township, Pyay District, Bago (West) Region

Section VIII. Particular Conditions (PC)

Particular Conditions (PC)

GC 1.1(l)	The Project Site/final destination are: Mechanical Circle (3) Workshop of Irrigation Department, Pyay Township, Pyay District, Bago (West) Region	
GC 1.1(m)	The Purchaser is: Irrigation Department, Ministry of Agriculture and Irrigation.	
GC 1.1(n)	The Purchaser's Country is: Republic of the Union of Myanmar.	
GC 5.1	The language shall be: English.	
GC 11.1	Details of Shipping and other Documents to be furnished by the Supplier are a negotiable bill of lading, a non-negotiable sea way bill, (an airway bill, a railway consignment note, a road consignment note, if necessary), insurance certificate, Manufacturer's product inspection reports, Supplier's shipping lists, pre-shipping inspection certificate issued by nominated inspection agency, Manufacturer's or Supplier's warranty certificate and necessary technical documents.	
	The above documents shall be received by the Purchaser before arrival of the Goods and, if not received, the Supplier will be responsible for any consequent expenses.	
GC 14.1	The method and conditions of payment to be made to the Supplier under this Contract shall be as follows: Payment for the Goods and Related Services supplied from outside Purchaser's Country: Payment of foreign currency portion shall be made in [insert foreign currency of the Contract Price] in the following manner:	
	(i) Advance Payment: Ten (10) percent of the Contract Price shall be paid, upon signing of the Contract, within forty-five (45) days after receipt of invoice and a bank guarantee for the equivalent amount valid until the Goods and Related Services are delivered and in the form provided in the Bidding Documents or another form acceptable to the Purchaser.	
	(ii) On Shipment: Eighty (80) percent of the Contract Price shall be paid through an irrevocable letter of credit opened in favor of the Supplier against the documents specified in the letter of	

Invitation for Bids

	credit.	
	(iii) On Acceptance: Ten (10) percent of the Contract Price shall be paid within forty-five (45) days after receipt of invoice and a certificate from the Purchaser declaring that the Goods and Related Services have been delivered and accepted.	
	Payment for the Goods and Related Services supplied from the Purchaser's Country:	
	Payment for local currency portion shall be made in Myanmar Kyat (MMK) in the following manner:	
	(i) Advance Payment: Ten (10) percent of the Contract Price shall be paid, upon signing of the Contract, within forty-five (45) days after receipt of invoice and a bank guarantee for the equivalent amount valid until the Goods and Related Services are delivered and in the form provided in the Bidding Documents or another form acceptable to the Purchaser.	
	(ii) On Delivery: Eighty (80) percent of the Contract Price shall be paid within forty-five (45) days after receipt of invoice and the documents specified in GC Clause 11.	
	(iii) On Acceptance: Ten (10) percent of the Contract Price shall be paid within forty-five (45) days after receipt of invoice and a certificate from the Purchaser declaring that the Goods and Related Services have been delivered and accepted.	
GC 16.1	A Performance Security shall be required.	
	The amount of the Performance Security shall be: ten percent (10%) of the contract price.	
GC 22.1	The insurance coverage shall be as specified in the Incoterms.	
GC 23.1	Responsibility for transportation shall be as follows:	
	The Supplier is required under the Contract to transport the Goods to the Delivery Site at specified Warehouse in Yangon with transport insurance. The related costs shall be included in the Contract Price.	
	The Purchaser shall be responsible for custom clearance, store at the Delivery Site and transport from the Delivery Site to the Project Sites within the Purchaser's Country, defined as the Project Site, transport to such place of destination in the Purchaser's Country.	

Section VI. Schedule of Requirements

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GC 24.1	The inspections and tests shall be: 1) product tests by the Manufacturers, 2) pre-shipping inspection by the third parties for all goods, 3) quantity inspection for all Goods including spare parts and 4) final inspection for all Goods excluding spare parts.
GC 24.2	The inspections and tests shall be conducted at: 1) at the Manufacturer's Factory(ies) for product tests, 2) at shipper's warehouse(s) for preshipping inspection, and 3) at the Delivery Site for quantity inspection and 4) at the Project Site for final inspection.
GC 25.1	The liquidated damage shall be: zero point five percent (0.5 %) per week.
GC 25.1	The maximum amount of liquidated damages shall be: ten percent (10 %) of the Contract Price.
GC 26.3	The period of validity of the warranty shall be: three hundred sixty five (365) days.
GC 26.3	For the purposes of the warranty, the place of final destination shall be: at Mechanical Circle (3) Workshop of Irrigation Department, Pyay Township, Pyay District, Bago (West) Region

2.2 Bidding Documents (Draft) for Agricultural Machineries

Section II. Bid Data Sheet BDS-1

BIDDING DOCUMENTS

for

Procurement of Agricultural Machineries

Purchaser: Ministry of Agriculture and Irrigation

Country: Republic of the Union of Myanmar

Project: Project for Rehabilitation of Irrigation Facilities in Bago (West) Region

Loan No.: [insert number of Loan Agreement]

BDS-2 Section II. Bid Data Sheet

Section II. Bid Data Sheet

Bid Data Sheet

	C. Preparation of Bids					
ITB 14.8 (a)(iii) and (b)(ii)	a)(iii) and Stations of Agricultural Mechanization Department at Pyay, Paukkhaung,					
ITB 14.8 (b)(i)	Place of destination (Delivery Site): CIP Yangon at the Warehouse in the Base Store Depot (A) of Agricultural Mechanization Department, Kyaik Kalawt, Mingaladone Township, Northern District, Yangon					
ITB 18.3	Period of time the Goods are expected to be functioning for operation and maintenance of tractors with implements, combine harvesters and excavators: One (1) Year after issue of complete certificate					
ITB 19.1 (a)	Manufacturer's Authorization is: required for tractors, combine harvesters and excavators					
ITB 19.1 (b)	The Bidder is required to be represented by an agent in the country equipped and able to carry out the Supplier's maintenance, repair and spare parts-stocking obligations.					

Section VI. Schedule of Requirements

Notes for Preparing the Schedule of Requirements

The Schedule of Requirements shall be included in the Bidding Documents by the Purchaser, and shall cover, at a minimum, a description of the Goods and Related Services to be supplied and the Delivery Schedules.

The objective of the Schedule of Requirements is to provide sufficient information to enable Bidders to prepare their Bids efficiently and accurately, in particular, the Price Schedule, for which a form is provided in Section IV. In addition, the Schedule of Requirements, together with the Price Schedule, should serve as a basis in the event of quantity variation at the time of award of contract pursuant to ITB 41.

The date or period for delivery should be carefully specified, taking into account (a) the implications of delivery terms stipulated in the Instructions to Bidders pursuant to the *Incoterms* rules (i.e., EXW, or CIF, CIP, FOB, FCA terms—that "delivery" takes place when goods are delivered to the carriers), and (b) the date prescribed herein from which the Purchaser's delivery obligations start (i.e., notice of award, contract signature, opening or confirmation of the letter of credit).

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Project for Rehabilitation of Irrigation Systems

1. List of Goods and Delivery Schedule

[The Purchaser shall fill in this table, with the exception of the column "Bidder's offered delivery date" to be filled by the Bidder.]

Line	Description of Goods	Quantit		Final destination	Deliv	ery (as per Inco	terms) date
Item No		y	unit	(Project Site) as specified in BDS	Earliest delivery date	Latest delivery date	Bidder's offered delivery date [to be provided by the Bidder]
1	Tractor Set, 47hp	1 lot	120 units and implements	Agricultural Mechanization Stations at Pyay, Paukkhaung, Thegone and Paungde Townships, Pyay District and	[insert the mumber of days following the date of effectiveness the Contract]	[insert the number of days following the date of effectiveness the Contract]	[insert the number of days following the date of effectiveness the Contract]
2	Tractor Set, 68hp	1 lot	100 units and implements	Nattalin Township, Ayeyawaddy			
3	Combine Harvester Set	1 lot	25 units	District, Bago (West)			
4	Mini Excavator	5 units	5 units	Region			
5	Workshop Tools	1 lot	5 sets				
	Spare Parts	1 lot	1 lot	Base Store Depot (A) of Agricultural Mechanization Station, Kyaik Kalawt, Mingladone Township, Northern District, Yangon			

Myanmar

Item No	Description of Service	Quantity	Physical unit	Place where Services shall be delivered	Final delivery date(s) of Services
1	Product Test participated by AMD engineers in Japan or other manufacturing country borne by the Supplier	1 lot	3 persons for 8 days	Manufacturer's factories	
2	Dispatch of engineer (s) for Quantity Inspection for the Goods with spare parts	1 lot	1 person or more	The Delivery Site at Base Store Depot (A) of Agricultural Mechanization Department, Kyaik Kalawt Mingladone Township, Yangon	
3	Dispatch of engineer(s) for Test-run, Initial Instruction and Final inspection for the Goods without spare parts	1 lot	1 person or more	The Project Sites at Agricultural Mechanization Stations at Pyay, Paukkhaung, Thegone and Paungde Townships, Pyay District and Nattalin Township, Thayawaddy District, Bago (West) Region	

Project for Rehabilitation of Irrigation Systems

4	Dispatch of engineers for training	1 lot	3 days for tractors 5 days for combine harvesters 2 days for excavators	Agricultural Mechanization Training Center, Meikhtila Township, Meikhtila District, Mandaley Region	
5	Supply of repairing advices and arrangement of spare parts after the warranty period	1 lot	1 qualified engineer, or more, of the agent(s) appointed by the Manufacturer for tractors and combine harvesters	The agent(s) shall be located at Pyay District, Bago (West) Region	

3. Technical Specifications

Notes on Technical Specifications

The purpose of the Technical Specifications (TS) is to define the technical characteristics of the Goods and Related Services required by the Purchaser. The Purchaser shall prepare the detailed TS by taking into account that:

- The TS constitute the benchmarks against which the Purchaser will verify the technical responsiveness of Bids and subsequently evaluate the Bids. Therefore, well-defined TS will facilitate preparation of responsive Bids by Bidders, as well as examination, evaluation, and comparison of the Bids by the Purchaser.
- The TS shall require that all Goods and materials to be incorporated in the Goods be new, unused, and of the most recent or current models, and that they incorporate all recent improvements in design and materials, unless provided for otherwise in the contract.
- The TS shall make use of best practices. Samples of specifications from successful similar procurements in the same country or sector may provide a sound basis for drafting the TS.
- The use of metric units is encouraged.
- Standardizing technical specifications may be advantageous, depending on the complexity of the Goods and the repetitiveness of the type of procurement. The TS should be broad enough to avoid restrictions on workmanship, materials, and equipment commonly used in manufacturing similar kinds of goods.
- Standards for equipment, materials, and workmanship specified in the Bidding Documents shall not be restrictive. Recognized international standards should be specified as much as possible. Reference to brand names, catalogue numbers, or other details that limit any materials or items to a specific manufacturer should be avoided as far as possible. Where unavoidable, such item description should always be followed by the words "or substantially equivalent." When other particular standards or codes of practice are referred to in the TS, whether from the Borrower's or from other eligible source countries, a statement should follow other authoritative standards that ensure at least a substantially equal quality, then the standards mentioned in the TS will also be acceptable.
- The TS shall be fully descriptive of the requirements in respect of, but not limited to, the following:
 - (a) Standards of materials and workmanship required for the production and manufacturing of the Goods.

- (b) Detailed tests required (type and number).
- (c) Other additional work and/or Related Services required to achieve full delivery.
- (d) Detailed activities to be performed by the Supplier, and participation of the Purchaser thereon.
- (e) List of detailed functional guarantees covered by the Warranty and the specification of the liquidated damages to be applied in the event that such guarantees are not met.
- The TS shall specify all essential technical and performance characteristics and requirements, including guaranteed or acceptable maximum or minimum values, as appropriate. Whenever necessary, the Purchaser shall include an additional ad-hoc Bidding Form (to be an Attachment to the Letter of Bid), where the Bidder shall provide detailed information on such technical performance characteristics in respect to the corresponding acceptable or guaranteed values.

When the Purchaser requests that the Bidder provides in its Bid a part or all of the TS, technical schedules, or other technical information, the Purchaser shall specify in detail the nature and extent of the required information and the manner in which it has to be presented by the Bidder in its Bid.

"Summary of Technical Specifications. The Goods and Related Services shall comply with following Technical Specifications and Standards:

Item No	Name of Goods or Related Service	d Technical Specifications and Standards			
1.	Tractor Set, 47hp	Net output power 47hp, equipped with plough type disc harrow, rotavator and front dozer			
2.	Tractor Set, 68hp	Net output power 68hp, equipped with disc plough, plough type disc harrow, offset harrow, rotavator and front dozer			
3.	Combine Harvester Set	Net output power 68hp and semi-trailer tractor			
4.	Mini Excavator	4.7 ton, net output power 39hp,bucket 0.16 m ³			
5.	Workshop Tool	Engine driven air compressor, Hydraulic floor jack and Engineering tool set			

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4. Inspections and Tests

The following inspections and tests shall be performed:

Inspection and Test	Description	Place
1. Product Test	Tested by the Manufacturer(s) for assembled machineries	Manufacturers' factories
2. Pre-shipping Inspection	Inspected by the third party	Shipping warehouse(s) in the exporting countries of the final products
3. Quantity Inspection	Inspected by the Purchaser and the Consultant	The Delivery Site at Base Store Depot (A) of Agricultural Mechanization Department, Kyaik Kalawt Mingladone Township, Yangon
4. Test-run, Initial Instruction and Final Inspection	Inspected by the Purchaser and the Consultant	The Project Sites at Agricultural Mechanization Stations at Pyay, Paukkhaung, Thegone and Paungde Townships, Pyay District and Nattalin Township, Thayawaddy District, Bago (West) Region

Section VIII. Particular Conditions (PC)

Particular Conditions (PC)

GC 1.1(l)	The Project Sites/final destinations are: Agricultural Mechanization Stations at Pyay, Paukkhaung, Thegone and Paungde Townships, Pyay District and Nattalin Township, Thayawaddy District, Bago (West) Region.
GC 1.1(m)	The Purchaser is: Irrigation Department, Ministry of Agriculture and Irrigation. The Goods shall be used and managed by Agricultural Mechanization Department.
GC 1.1(n)	The Purchaser's Country is: Republic of the Union of Myanmar.
GC 5.1	The language shall be: English.
GC 11.1	Details of Shipping and other Documents to be furnished by the Supplier are a negotiable bill of lading, a non-negotiable sea way bill, (an airway bill, a railway consignment note, a road consignment note, if necessary), insurance certificate, Manufacturer's product inspection reports, Supplier's shipping lists, pre-shipping inspection certificate issued by nominated inspection agency, Manufacturer's or Supplier's warranty certificate and necessary technical documents.
	The above documents shall be received by the Purchaser before arrival of the Goods and, if not received, the Supplier will be responsible for any consequent expenses.
GC 14.1	The method and conditions of payment to be made to the Supplier under this Contract shall be as follows: Payment for the Goods and Related Services supplied from outside Purchaser's Country: Payment of foreign currency portion shall be made in [insert foreign currency of the Contract Price] in the following manner: (i) Advance Payment: Ten (10) percent of the Contract Price shall be paid, upon signing of the Contract, within forty-five (45) days after receipt of invoice and a bank guarantee for the equivalent amount valid until the Goods and Related Services are delivered and in the form provided in the Bidding
	Documents or another form acceptable to the Purchaser. (ii) On Shipment: Eighty (80) percent of the Contract Price shall be paid through an irrevocable letter of credit opened in favor

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	of the Supplier against the documents specified in the letter of credit.				
	(iii) On Acceptance: Ten (10) percent of the Contract Price shall be paid within forty-five (45) days after receipt of invoice and a certificate from the Purchaser declaring that the Goods and Related Services have been delivered and accepted.				
	Payment for the Goods and Related Services supplied from the Purchaser's Country:				
	Payment for local currency portion shall be made in Myanmar Kyat (MMK) in the following manner:				
	(i) Advance Payment: Ten (10) percent of the Contract Price shall be paid, upon signing of the Contract, within forty-five (45) days after receipt of invoice and a bank guarantee for the equivalent amount valid until the Goods and Related Services are delivered and in the form provided in the Bidding Documents or another form acceptable to the Purchaser.				
	(ii) On Delivery: Eighty (80) percent of the Contract Price shall be paid within forty-five (45) days after receipt of invoice and the documents specified in GC Clause 11.				
	(iii) On Acceptance: Ten (10) percent of the Contract Price shall be paid within forty-five (45) days after receipt of invoice and a certificate from the Purchaser declaring that the Goods and Related Services have been delivered and accepted.				
GC 16.1	A Performance Security shall be required.				
	The amount of the Performance Security shall be: ten percent (10%) of the contract price.				
GC 22.1	The insurance coverage shall be as specified in the Incoterms.				
GC 23.1	Responsibility for transportation shall be as follows:				
	The Supplier is required under the Contract to transport the Goods to the Delivery Site at specified Warehouse in Yangon with transport insurance. The related costs shall be included in the Contract Price.				
	The Purchaser shall be responsible for custom clearance, store at the Delivery Site and transport from the Delivery Site to the Project Sites within the Purchaser's Country, defined as the Project Site, transport to such place of destination in the Purchaser's Country.				

GC 24.1	The inspections and tests shall be: 1) product tests by the Manufacturers for tractors, combine harvesters and excavators, 2) pre-shipping inspection by the third parties for all goods, 3) quantity inspection for all Goods including spare parts and 4) final inspection for all Goods excluding spare parts.
GC 24.2	The inspections and tests shall be conducted at: 1) at the Manufacturer's Factory(ies) for product tests, 2) at shipper's warehouse(s) for preshipping inspection, and 3) at the Delivery Site for quantity inspection and 4) at the Project Sites for final inspection.
GC 25.1	The liquidated damage shall be: zero point five percent (0.5 %) per week.
GC 25.1	The maximum amount of liquidated damages shall be: ten percent (10 %) of the Contract Price.
GC 26.3	The period of validity of the warranty shall be: three hundred sixty five (365) days.
GC 26.3	For the purposes of the warranty, the places of final destinations shall be: at Agricultural Mechanization Stations at Pyay, Paukkhaung, Thegone and Paungde Townships, Pyay District and Nattalin Township, Thayawaddy District, Bago (West) Region

APPENDIX-VII

FARM LAND CONSOLIDATION

APPENDIX VII: FARM LAND CONSOLIDATION

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VII.1 List of the Beneficiary Farmers for Land Consolidation Project

List of the Beneficiary Farmers for Land Consolidation Project (1/2)

Sr	Village Teret	Village	Name of Householder	-			ma (Acr		-
No.			7,552 11,154 15,155	(1)	(2)	(3)	(4)	(5)	Total
1	Anng Zabu	Aung Zabu		0.38	3.97				435
2	Aung Zabu	Aung Zabu		2.71			0		2.71
3	Aung Zabu	Aung Zabu		2.10	1.02				3.12
4	Aung Zabu	Aung Zabu		3.35	2.09				5.44
5	Aung Zabu	Aung Zabu		1.29	-				1.29
6	Anng Zabu	Aung Zabu		2.10					2.10
7	Anng Zabu	Aung Zabu		1.67	7				1.67
8	Aung Zabu	Aung Zabu		1.35	1.13				2.48
9	Aung Zabu	Aung Zabu		2.12				1	2.12
10	Aung Zabu	Aung Zabu		0.40					0.40
11	Anng Zabu	Amog Zabu		1.00					1.00
12	Aung Zabu	Anng Zabu		1.00	1.00				2.00
13	Anng Zabu	Aung Zabu		0.75	1.53				2.31
14	Aung Zabu	Aung Zabu		3.38	2.17				5.55
15	Anng Zabu	Amag Zabu		0.58	0.90				1.48
16	Aung Zabu	Aung Zabu		11.19	2.26				13.45
17	Aung Zabu	Aung Zabu		0.32	2.24				0.32
18				1.53			-	-	1.53
19	Aung Zabu	Aung Zabu		10.54	_				10.54
	Aung Zabu	Aung Zabu			-		-	_	_
20	Aung Zabu	Aung Zabu		3.92					1.92
21	Aung Zabu	Aung Zabu		1.17	_	_			1.17
22	Aung Zabu	Aung Zabu		2.39					2.39
23	Aung Zabu	Amng Zahu		2.70		-			2.70
24	AungZabu	Aung Zabu		0.74					0.74
23	Aymio	Ayinic		0.12					0.12
26	Aymlo	Ayinlo		0.73	-		1	- 1	0.73
27	Aymlo	Ayinlo		2.95	1.05				4.00
28	Aymlo	Aymlo		1.00	1531	7.5			1.00
29	Aymlo	Ayinlo		1.02	2.92	1.96			3.90
30	Aymlo	Ayinlo		0.90	7				0.90
31	Aymlo	Avinlo		1.13	0.40				1.53
32	Aymio	Ayınlo		2.05					2.05
33	Aymlo	Ayinlo		0.58				-	0.58
34	Ayinlo	Ayinlo		0.05					0.03
35	Aymlo	Ayinlo		1.12					1.12
36	Aymlo	Avialo		3.15	1.73				4.88
37	Ayalo	Ayinlo		1.46	-				1.46
38	Aymlo	Avialo		1.20					1.20
39	Ayaslo	Ayialo		0.79					0.79
40	Aymlo	Ayinlo		1.00	1.72				2.72
41	Aymlo	Avialo		2.75					2.75
42	Ayalo	Ayinlo		0.75					0.75
43				1.03					1.03
44	Aymlo	Ayinlo		1.96	_		_	_	1.96
	Aymlo	Ayinlo			0.30				
45	Ayinlo	Ayinle		1.01	0.49			-	1.50
46	Aymlo	Ayinlo		0.45					0.45
47	Aymlo	Ayinlo		2.46	0.15				2.46
48	Aymlo	Ayanlo		0.66	0.37				1.03
49	Aymlo	Ayinlo		1.00	1.25	-		-	2.25
50	Aymio	Ayialo		3.47	1.75	0.67	1.28		7.17
51	Ayunlo	Aviale		0.03		-			0.03
52	Aymlo	Ayinlo		1.57	H		1		1.57
53	Aymlo	Ayinlo		0.72	0.61			()	1.40
54	Aymlo	Ayinlo		3.26	0.07		1 7		3.33
35	Aymlo	Ayinlo		3.75					3.75
56	Aymlo	Ayinlo		0.71	V				0.71
57	Kan Oo (pym ma nar)	Kan Oo		0.52	1 7		T T		0.52
58	Kan Oo (pym ma nar)	Kan Oo		5.99	1.14				7.13
19	Kan Oo (pyin ma nar)	Kan Oo		1.43			7		1.43
60	Kan Oo (pyin ma nar)	Kan Oo		1.47					1,47
61	Kan Oo (pyin ma nar)	Kan Oo		1.90					1.90
62	Kan Oo (pyin ma nar)	Kan Oo		0.52					0.52
63	Kan Oo (pyin ma nar)	Kan Oo		1.24	100				1.24
64	Kan Oo (pyin ma nar)	Kan Oo		1.88					1.88
65	Kan Oo (pyin ma nar)	Kan Oo		0.81					0.81
66	To Gyri Gome	Gone Min Ein		3,76					3.76
		Gone Min Ein		1.00					1.00
67	Te Gyri Gome						-	-	
68	Te Gyr Gome	Good Min Ein		2.05					2.05
69	Te Gyr Goza	Gone Min Ein		1.00		-	/	2 0	1.00
70	Te Gys Gode	Gone Min Ein		5.56					3.36
	Te Gyi Gone	Gone Min Ein		0.61					0.

List of the Beneficiary Farmers for Land Consolidation Project (2/2)

Sr. No.	Village Turct	Village	Name of Householder	(1)	(2)	(3)	arsa (Acr	(5)	Total
72	Te Gyi Gone	Gone Min Em	*	1.87	100	37	17	- 67	1.87
73	Te Gyr Gone	Goes Min Ein		7.76					7.76
74	Ta Gyi Gona	Gone Min Ein		2.06					2.06
75	Te Gyi Gone	Gone Min Ein		0.46					0.46
76	Te Gyr Gone	Gena Min Ein		1.67					1.57
77	Te Gyr Gone	Gone Min Ein		2.00					2.00
78	Te Gya Gone	Gone Min Ein		2.38					2.38
79	Te Gy: Gone	Gons Min Em		0.49					0.49
80	Te Gyri Gone	Gone Min Fin	0	1.09					1.09
51	Te Gyr Gone	Goss Min Ein		1.67					1.87
82	Te Gyi Gone	Goss Min Ein		0.40					0.40
\$3	Te Gyr Gone	Gens Min Ein		0.52					0.52
84	To Gyr Gone	Gone Min Ein		1.24					1.24
85	Te Gyr Gone	Gone Min Ein		1,00					1,00
66	Te Gyr Gone	Gone Min Ein		0.78					0.78
87	Te Gyr Gone	Gone Min Ein		0,50					0.50
\$8	Te Gyr Gone	Gone Min Ein	1	12.16					12.16
89	Te Gyr Gone	Gone Min Em		1.10					1.10
90	Te Gys Gone	Gons Min Ein		2,61					2.61
91	Te Gyi Gone	Goss Min Em		3.60	2				3.60
92	Te Gyi Gone	Goas Min Ein	2	0.99					0.99
93	Te Gyi Gone	Gone Min Ein		1.02					1.02
94	Te Gyr Gone	Gene Min Em		2.27		_			2.27
95	Te Gyr Gone	Gons Min Ein	3	3.86	-				3.86
96	Te Gyi Gone	Gone Min Ein		0,80					0.80
97	Te Gyri Gone	Goas Min Ein		1.17				_	1.17
98	Te Gyr Gone	Gone Min Ein Gone Min Ein		5.15					5.15
100	Te Gyri Gone	Gone Min Ein	-	0.80					2.69
101	Te Gyr Gone Te Gyr Gone	Gons Min Em	-	2.06		_		-	2.06
102	Te Gyi Gone	Gone Min Ein	-	3.50					3.50
103	Te Gyr Gone	Gone Min Ein		2.24		_		_	2.24
104	To Gyi Gone	Gone Min Ein	-	0.73					0.73
105	Te Gyi Gone	Goes Min Ein		0.99		_			0.99
106	Te Gyi Gone	Gone Min Ein	7	2.74					2.74
107	Te Gyi Gone	Gons Min Em	-	0.92					0.92
105	Te Gy: Gone	Gone Min Ein		1.84					1.84
109	Te Gyr Gone	Gone Min Ein		2.94					294
110	Te Gyi Gone	Goze Min Ein	-	1.09					1.09
111	Tu Gyi Gone	Goes Min Ein	-	5.85					5.85
112	Te Gyi Gone	Gone Min Ein		1.68					1.68
113	Ta Gyr Gone	Gons Min Fin	3.	11.48					11,48
114	Te Gyi Gone	Gose Min Ein		0.30					0.30
115	Te Gyr Gone	Gone Min Ein		1.06					1.06
116	Te Gyi Gone	Gone Min Ein		0.86					0.86
117	Te Gyi Gone	Gone Min Ein		1.36					1.36
118	Ta Gyri Gome	Gone Min Ein	3	0.95					0.95
119	Te Gyr Gone	Shar Taw		1.59					1.59
120	Te Gyi Gone	Shar Taw		2.62					2.62
121	Te Gyi Gone	Shar Taw		0.30	0.94				1.24
122	Te Gyr Gone	Shar Taw		1.04	-57	1 1	-		1.04
123	Tu Gyri Gone	Shar Taw		0.59		-	1		0.59
24	Te Gyr Gone	Shar Taw		0.78					0.78
125	Te Gyr Gone	Shar Tare		1.82	1.39				3.20
126	Te Gyri Gone	Shar Taw		1.27	1.00				2.27
27	Te Gyri Gome	Shar Taw		1.00		-			1.00
28	Te Gyri Gone	Shar Taw		0.52					0.52
29	Te Gyri Gone	Shar Taw		0.91					0.91
30	Te Gyi Gone	Shar Taw		3.14		-			3,14
31	Te Gyr Gone	Shar Taw		2.01	0.08			_	2.09
32	Te Gyi Gene	Shar Taw		3.66			_		3.66
133	Te Gyr Gone	Shar Taw	3	1.00					1.00
134	Te Gys Gone	Shar Taw	3.	1.48					1.48
135	Te Gy: Gone	Te Gyr Gons		2.54					2.84
136	Te Gyr Gone	Te Gyi Gane		0.48					0.48
137	Te Gyi Gona	Te Gyri Gone	2.	0.97					0.97
138	Te Gyr Gone	Te Gyi Gone		1.82					1.52

VII.2 Record of 1st Farmer Meeting

Explanation of Model Farmland Consolidation 20^{th} July 2013

About construction period

Question.1) Is there any plan to inform the farmer when the construction of farm land consolidation will start exactly? If government can inform farmer about that in advance, it will be very good for us because we can decide/ adjust the time when we should cultivate the crop or not.

Answer.1) We will inform all the concerned farmers the construction period after we fixed it.

About farm land area which Nay Pyi Taw city bought before

Comment from farmer.1) I would like to request you regarding with the land area which was bought by the Government for Nay Pyi Taw Council road construction. As your explanation, these farm lands will be used for construction of farm road, irrigation and drainage canal, but it should be given back to the original owners, who sold out those to the Government. Owning of that area is just by around 30 farmers but those which will be used for 138 farmers is unfair.

Explanation.1) Government just bought and paid for those lands, not taking by force. And now, these land will be given back to implement the farmland consolidation project. So, please do not think only for yourself but just think for other farmers. And also, you better discuss with the rest farmers also who used to own farmlands within the area which was bought by Government. You better try to know what their decisions are.

Comment from farmer.2) Yes, Government bought but they paid only 350,000 Kyat per acre which is not the reasonable and the prevailing price at that time.

Comment from farmer.3) I am also one of the farmers who used to own the farmland within that area. For me, I just sold out those farmlands by my own decision. I just thought that it was donation for road construction which can make our village develop though I know the price given by the Government was not reasonable. So now, the same condition, those lands were given back to implement the Farmland Consolidation Project a kind of developing plan. I don't want those lands back. I just want to say those land should be considered just only for the project under an arrangement of related Government Departments.

Explanation.2) That is why I recommend you to form a farmer organization. Then, those kinds of things can be solved within your organization. For every kind of problems, you have to obey what the most people want to be. Nobody can consider only for themselves, they must fallow and pay respect to what the most people decide.

Explanation.3) As cooperative department explained to you, JICA side also has been assisting to form a farmer organization. Again, we strongly would like to recommend for forming a farmer organization first. As we explained you that organization will be legal entity so you can own and manage by your arrangement for the total area of the project and also you can request for the assistance from the Government Departments if necessary. Anyway, we would like to remind two things to you, 1) kindly accept that Nay Pyi Taw council will give those lands to the project, not for individual farmers. 2) JICA can continue preparation for this project by the reason that total area of farm road and canal construction is smaller than the area of Nay Pyi Taw council road construction. We can say Nay Pyi Taw council gives that land to the organization to utilize for road and canal construction. If those lands are taken back by individual farmers, every farmer will have to lose few percentage of their farmland.

VII.3 Record of 2nd Farmer Meeting

Establishment of Farmer organization

1st September 2013

Objective of establishment of farmer organization

Question.1) What are the benefits for being a member of farmer organization?

Answer.1) What we can tell exactly now is you all will be considered to reduce the difficulties of agriculture sector by being a member of famer organization. Our government wants this project to be a model of land consolidation projects in Myanmar. Because our government has been planning to implement land consolidation activities country-wise but we have not enough experience up to now. That is why JICA was requested to find perfect ways starting from the time before project (preparing stage) to the time after project (maintaining stage for sustainability).

According to those explained conditions, the following step is coming out; concerned government departments are also deeply collaborating with JICA Team to gain the objectives. As one best way we have find out is; preparing, implementing and maintaining activities of the Project are more effective with the management of farmer organization participating by all the farmers of the project.

So, forming farmer organization becomes the most important activity of our project and we all believe that it will be the strongest stand for project's success. A management committee which will be supervising body of famer organization is also tried to form by volunteer farmers from each and every village benefited under the project. After forming a management committee by that kind of persons, management committee will consider for a better condition of all farmers, the whole farmer organization.

And also, by representing farmer organization, management committee is able to request supports from concerned government departments if necessary. Concerned departments will not hesitate to take respond for what you request because, as I explained, this project is supported to be a model of farmland consolidation projects in Myanmar. I hope you can now have emerging changes and opportunities for being a member of farmer organization.

Question.2) What are responsibilities of MC?

Answer.2) Firstly, for current condition, management committee has to prepare necessary and important tasks for both of forming and registration of farmer organization and implementing land consolidation works by linking with Cooperative department. JICA Team will mainly do assistance for farmer organization and concerned departments will be conditional supporters. Secondly, after Project period, may be 4 or 5 year later, I cannot tell exactly what management committee has to supervise at that period, it may also be changed year by year since it depends on the objectives set by general assembly held at least once a year.

Support for farmer organization

Question.3) How government departments will help and support the farmer organization?

Answer.3) It will depend on what you request and they will respond as necessary. Management committee can request to related expertise department through cooperative department of Zabu Thiri Township office.

Question.4) What are limitations of JICA for the post of management committee member?

Answer.4) There is no limitation from JICA if other villagers agreed with the selected person(s) of their village but selected person should be a beneficiary of this project and actively participate in

non-profit activities.

Question.5) Are Rules and Regulations of farmer organization already prepared?

Answer.5) As I explained, that should be done by the management committee. Now, JICA Team has been checking a draft rule and regulation based on a reference which is coop department commonly used in the case of establishing new farmer organizations under their entire arrangement. This rule and regulation should have been modified by inputting some items for respective sectors by discussing with concerned departments.

After that, farmer organization will use it for reference of management committee. If there are some comments from farmer organization member(s), management committee has to check and edit if necessary. After checking within farmer organization, management committee has to set it up and call a meeting to get approval from concerned departments.

Answer.6) Under cooperative department, this is the first organization established for farmland consolidation project. Also this organization will be recorded as the first organization different from others established for the purpose of developing small and medium industry/enterprise by the government. I believe farmer organization and management committee will successfully be established after this event and as soon as after this, I will apply to get some government loan for this organization. According to the prioritization of Ministry of Agriculture and Irrigation and hard efforts of JICA Team, we can say this is one of the national level projects and I believe your organization also will be a good model for other organizations. If your organization can reach to the target as we want, I will arrange regular study tour for other organizations under cooperative department to study this farmer organization in Nay Pyi Taw.

VII.4 Population Census and Property Ownership Survey

\neg	Village		LI			State	n of famil	r-						Land				, liv	reliteoil	_			Awarersa
No.	Village Tract	Village	Name of householder	Sex of Inholder (M or F)	Widow Hoolder † (YBI)	Ethinic	Age of Hholder		Educational status of householider	Number of tamily members	Number of reals family	Number of formula turnity member	Area of familiand under project (acre)	Land terrore, have title dood? (YN)	Arna to be lost due to loadican al construi cted (acre)	Main locome source	tal Main collivated crop	2nd Main cultivated crop	3rd Main cultivated crop	Islam many strees of puddy cultiva ficen' year		nousenoid	Answer abox the Project (YM)
de				1					c				0	1				-		K	L		10
	Aprile	Aprillo		F	W-	Banar			3	3	-2	- 11	0.12	. 4		Agrobut	Monsoon Pedity	Back Green		r	- 11	1,200,000	9
	April	Ayele		F	Y-	Berar			- 4	1.	2	- 1	0.75	4		Agriculture:	Morsoon Pasity	Back-Gram	- 1	1	-60	129,000	- 5
	Aprile	Ajobb		F	T	Barrier			4	3	2 .	31	4 00	. 4.		Agrothus	Summer Paytry	Monteon Palddy	Black Stem	2	76	1,200,000	y y
	Aprile	Ayres		ŧ	8	Berry			74	4	0		100	17:		Agroutum	Summer Paddy	Miceose Paddy	Black Gran	2	80	1 500,000	4
	Aprile	Alinks		ŧ	N.	Barrier			4	8	4	.2	5.90	y		Appointme	Sunmer Paddy	Microson Friddy	Black Gram	4	80	2.000,000	O Y
	April	Asimo		Ŧ.	16	Seven			4 1	13	-3	- 1	0.00	9		Agroulture	Monoson Paddy	Black Grains	100	1	.75	1,000,000	Y
	Apple	Ayino		1.6	16	Serie	ľ		. 4	1			1.53			Agrouture	Survive Piddy	Monagon Pyddy	Black Gram	.2	- 80	450 000	7
	April	Ayess		F	N.	Same			4	1	.5	10.	2.05		1	Applica	Moneyon Paddy	Black Gram		j	40	1,000,000	9
đ	Aprile	Ayrio			N.	lies	1		10	2	1.9	4	9.58			Appater	Surrey Feddy	Monsoon Padity	Black Sram	7	80	900,000	y -
6	April	Ayres.		F	8.	Sime			1	1.5	7	1	0.05	1		Cotage Worker	Minsoon Feddy	Black Gram	-	1	60	V 200,000	F
Ū	Byerlo -	Aprilo		1 10	(N-	Benir			Morestry	-1	T	41	1.12	· y		Agrouture	Summer Paddy	Moneoon Pieddy	Wick Gren	2	60	1.780,000	Y
2	Aprile	Aprilo		14	. 16	Bente			4	- 4	2	10	4.88	Ŧ		Agrouture	Merecon Faddy	Black Glam		1	80	1,500,000	y .
3	Aprile	Aprelo		1.34	4	Berne			14	1	1	2	106	¥.		Архили	Morecon Padity	Back Gram	- 0		(tri	5,000,000	4
4	A/mis	Ayes		. M	N.	lies			. 4	- 7	. 6	1	120	Ψ.		Agnosture	Mirreson Faddy	Black Green	-	1	ė0	1 000,000	y.
5	Aprile .	Ajrelu		W.	18	Same			19	4	2	4	0.79	· V.		Apolive	Summer Paddy	Morecon Faddy	Black Green	2	10.	1,200,000	9
5	Aprill	Ayrilo		. W.	A	Benor			. 4	. 4	00	.147	271	4		Agroube	Marsoon Paddy	Black Goes		1	80	1,700,000	Y
7	April	Ayrilo		M.	-N	Barrie			5	2		1	275	1/4		Agriciture	Surviver Paddy	Monsoon Paddy	Black Gram	2	85	1,200,000	4
é	April	Ayera		- M	n	Barrai			- 18	7	4	10	3/3			Agricultura	Monsoon Paddy	Black Grant		1	80	1,300,000	
6	Apric	Agrilo		- 11	-M.	Birra			- 37	7	- 3	1	103	4		Agroduse	Workson Feddy	Black Crare	-2-	-15	80	4 500,000	
0	April	Ayelo		- M.	W	Banks				4	3	2	198	4		Agolan	Summer Paidly	Managan Paddy	Black Gram	2	80	3,500,000	9
1	Ayres	Ajrido		· W	N	Barin			- 3	-8	4	2	150	4		Agriculus	Moreosh Paddy	Back Gram		T	80	Y 700 000	y
2	Aprile	Eginio		u	78	Bene			Nie	+	3	4.1	345	15		Cottage Worker	Moreove Patity	Back Shirt		£.	78	5 072 990	Y
3.	Aprillo	Aginto		W.	4	Barrier			4	4	ď	1	241			Agrouture	Moreon Paddy	Black Green	Sesame	t	160	1300,000	¥
4	have:	Agola		M	16	Bew			7	4	2	.1	108	Υ.		Agriculture	Symme Paddy	Microson Fields	Black Gren	2	90	5,300,000	9
9	April	Agres		- W-	N	Beer			13	181	2.	261	2.25	17.		Agrouture	Summer Paddy	Myreson Pasty	Black Gram	2	100	1,300,000	y y
6.	Aprile	Ayres		16.1	N.	Savar	1		. 4	3	4	111	7.17			Agnitution	Surcret Paddy	Vonecon Fyddy	Black Gravi	2	65	2,100,000	Y
7	White	Ayrio		u	· %	Same			Monastry	1	- 1		9703	7		Canua Later	Monsoon Paggy	Black Gram	+	-1	TS	16,005,600	e +
8	Aprile	Ayida		- 11	N.	Eanac	1		7	1	2	11	1.57			Aprodus	Summer Fieldly	Mossoon Pyddy	Black Gram	2		1,200,000	- 1
9	April	Ayeza		- 14	- A	Serve	1		- 4	-1	1	1:	140	1		Apolive	Mineson Padily	Stack Gram	Searce	1	63	4,000,000	W .
0	Ayeric	Ayerin		- 94	19.	Betic			- 4	- 4	1	1	3.33	Ψ.		Agreeme	Summer Paddy	Monaton Patriy	Disch Com	- 2	90	2.000,000	T
11	Aprile	Agrito		- W.	16	Bank			- 1	4	1	1	1.76	T-		Agrosture	Summer Paddy	Minneson Peddy	Black Gram	3	60	2,000 000	Y
2	Ages	Aprilo		it.	- 26	Banas			- 4	4	1	111	471		13	Carpettel	Morsoon Paddy	Back Gram	-	1.6	16	100.000	1

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	Villag			_		State	n of family	Y				- 1		Land			_	Lh	wikeed				Ansrenes
No	Village Tract	Village	Name of householder	Sex of Healder (M or F)	Widow Hholder 7 (YAQ	Ethings rearns	Age of Mislder	Telephona number	Educational status of householder	Number of family receptions	Humber of male family mander	Number of female family marries	Area of familiand under project (scre)	Land tenare, have title deed? (7%)	Area to be lost due to read/can al constru cled (acre)	Main income source	tel Heis mittrated crop	2nd Main cultivated crop	3rd Main cultivated crop	How many times of gaddy cultiva tions year	Average yield of paddy (basketracre)	Annual household cash income (Kyate)	
Mate				n					1 .				b	E	F	0	6	K-	4	*	- K		*
п	Te Dyl Gore	Shar Tax		F	N	Banar			6	1	1	2	195	Y		Cmultiple	Manager Paddy	Black Gram		1	76	1,300,000	T 10
34	Te Ga Gime	9er7ee		J.F.	14	Barras			19	-	1	.4	247	Ť	1	Agrador	Mintdon Pathly	Black Grant	- 1	15	Pi.	Z,000,000	0 Y
36	Te Gyl Gime	StarTes		ŧ	4	Bans			4	4	25	1	1.24	Ŷ	11.	Agrichies	Minnson Patriy	Black Gram	400	1	96	1,500,000	W 4
ж	To Opt Gover	She fac		4.	4	Banar				. 4	1	7	1.04	4		Cantal Labor	Mirromy Parkly	Stack Gram		1	H	800,000	0 4
37	Ta Gyr Gome	Sharten		4.	14	Barrar			-6	- 1	1.0	4	8.54	+		Agriculture	Momosii Patdy	Black Gram	-	2	70	3.000 poo	0 4
31	Tar Gyr Gone	She Tae		F	H	Berner			1	2	1.0	2	0.75	Y		Agrouture	Monaton Pathy	Black Gram	-	X	56	1,000,000	o y
\mathbf{n}	Tir Gyl Good	Shar Tax		Ú.	14	Bierre			14	5	3	4.	3.79	Y		Agriculture	Moreson Paddy	Black Gran	-	T	72	2,000,000	10 V
46	Te Oye Gone	Shall Tay		- 40	N	Bance			- 0	23	1.	1	2.27			Agroulture	Monsion Paddy	Black Gram	C. T.	X	70	1.500,000	o Y
41	Te Opt Good	She Tax		u.	N	Sanar			+	1	1	2	3.00	4		Agriculture	Monteon Paddy	Stack Gram		1	16	1.500.000	(A)
42	Ta Gyl Gene	Shirt fee		286	и	Baron			- 3	_ L	1.6	1	0.52	- W		Agruative	Moneton Paddy	Black Goars		1	75	L200,000	v 0
43	Te Gyl Gores	Mar Tax		- 16	- 14	Barton	ĺ		- 1	4	2	. 2	0.91	9	-	Agiostore	Monazon Paddy	Black Gram	-	1	96	1,000,000	0 4
4	To Gyr Gorns	Shar Ton		- 11	- 14	Barrie			1	- 4	11.0	1.	3.14	ÿ		Agriculture	Memoon Paddy	Black Gram	100	1.	75	1,100,000	0 7
48.	Te Gyl Gome	Shar Tex		- 44	74	Banar			- 4	1	2	1	0.09	y		Agriculture	Memoon Paddy	Black Gram	-	2.0	60.	1,399,000	0 4
46	Le Gyl Gone	Star Tea		H.	100	Barrie			- A	5	2	3	5.86	ŷ		Agisture	Monison Padily	Black Grant		4	76	2,500,000	0 Y
47	Ta Gyl Gare	Shar Tun		II.	M	Barrier			A	1	1	2	1.00	Ÿ		Agriculture	Minsoon Paddy	Black Gram	-	Y	75	1,200,000	V 7
48	Te Gy Gere	Swite		10.	*	Sww			- t-		2		1.68	-W		Vendor	Monscon Paddy	Black Gram-	- 4	Ť	76	1,000,000	0 T
49	Te Gyl Gore	Fe Gyl Gove		+	N	Barnar			-3		5.	9	294	٧		Agriculture	Summer Paddy	Morsoon Faddy	Baks Grant	2	96	2,000,000	W 4
56	Te Gyl Gore	fa Gyl Cince		- 11	N	Barnar			5		1		144	4		Agriculture	Summer Paddy	Microson Paddy	Balak Grant	2	16	1,500,000	W
51	Te Gyl Gone	Te Gyi Gone		I M	H	Biroir			1	3	Ac	1	3.07	8		Kpiciture	Summer Paddy	Monteon Paddy	Balck Gram	2	66	950,500	10 Y
42	Te Gu Gore	To Cyl Gone		W	N	Barrar			10	3 :	7	9	16	- 90		Grocery Stop	Samene: Paddy	Monson Paddy	Balck Gram	2	66	44.000 not	v 0
53	Tar Gyl Germ	Gors Min Ex		F	44.	Beron	į		A.	5	- 6	2	1.76	V -		lynotire	Microson Paddy	Black Gram		- (75	2,000,000	(v)
54	Te Gyr Gome	Gane Min Ein		1	- N.	Bans	Ī			7-	- 4/	3-	1.00	- y -		Agriculture	Moneton Paddy	Black Gram		1	75	1,000,000	V o
58	Te Ge Gooe	Gorre Mer. Ein		+	N.	Benn			6.	4 :	1	n.	205	· V		Agriculture	Monsoon Paddy	Black Gram		0	86	700,000	9 Y
54	Te Gyr Good	Sone Min Ein		-	- N	Same			- 8	-5	2	- 3	1.00	· y -		Agriculture	Monsoon Paidy	Black Green	-	. 1	10	1,000,000	0 V
57	Te Gyl Gone	Gore Min Ein		7	.9	Same			- 1	8	- 2	2	5,56	-y		Agriculture	Monsoon Paddy	Stock Gram	-	Y .	- 8	2,480,000	9 Y
SE	To Gyl Girle	Gone Met Ein		1 3	N	Same			- (2.	2	3.	0.61	Y		Agriculture	Monsoon Paddy	Black Gram	-	L	75	1,000,000	ю у
:58	Ta Gyi Goine	Gone Mrt En		E	- 14	Same			5.	.2	0	2	187	Y		Agiculture	Mansoon Paddy	Back Gram	-	t	75	1,300,000	V 0
100	Tie Gyr Gorea	Goral Albe Ele		8	-14	Saran				- 6	2	- 1	2.76	Y		Agriculture	Monsoon Paddy	Black Gram	>	1	75	3,000,000	ν ν
101	Te Oyi Gone	Gore Min Ein		F	- 14	Same			- 6	4	1	1	2.06	Y		Agriculture	Minson Paddy	Black Green	-	1	85	520,400	Y 0
12:	Te Gyl Gone	Gons Alls Ein		F	18	Barre			4	4	. 0	4	0.46	Ψ.		Agrouture	Monsoon Peddy	Black Gram		1	86	800,000	0 7
63	Ta Gyl Gone	Disco Min Equ		F	.20	Barrier			5	3	3	1	187	¥		Apodus	Montour Paddy	Black Over	-	1	75	1,200,000	v +
64	Ta Gyi Game	Gora Ma Em		4	.0	Barrier			Monastry	*	- 9	1	2.00	- y-		Agrichite	Moneous Paddy	Flack Grass	-	1	8	2,200,000	6 4
65	Ta Oyl Germ	Gera Ma Em		1 #	-31	Baros			Monastry	4	2	2	2.33	¥		Agriculture	Mensoon Paddy	Black Gram		1	25	2,900,000	0 4

Myanmar

	Villag			_		State	n of famil	V					-	Land				Lis	althood				Amaroness
840	Village Tract	Village	Name of householder	Sex of Hholder (M or F)	Widow Hisolder 7 (YM)	Ethiniz	Age of Modder	Telephone rustriber	Educational status of householder	Mansher of family members	Humber of male Twelty member	Mumber of formin Tendly margber	Actes of Fermiand under project (acce)	Land terrare, have 6the deed? (Y/M)	Ares to be lost due to read/can al constru- cied (acre)	Main income source	fut Main cultivated crop	2nd Main cultivated crop	2rd Main cultivated crop	Hon- many times of paddy cultiva- tions year	Average yield of paddy (banket/acre)	Armusi household cash income (Kyata)	An are about the Project 7 (Y/N)
Fretz				8					c				p	E	•	0	н	- 1	4	K	T.		W
88.	Te Gyi Bone	Gone Min Em	4 1	1	N	Barwi		- 3		1.5	2	1	0.4%	y-		Appellure	Micson Paddy	Black Gram	-	1.1	80	700 000	0 9
H.	Ta Gyl Gorse	Goni Mi Ein		1	y	Baywi				1.	1	1	1.09	y		Agriculture	Microson Paddy	Black Gram		1	.80	2,000,000	Y .
44	Ta Gyi Gone	Gone Min Em			N.	Best				7	- 2	9-1	00	γ.		Agriculture	Monson Paddy	Black Grant		1	26	500,000	e - Y
11	Te Gyl Gone	Carse Mr. Ear			·V	Barne			- 4	7		1	0.40	γ		Agrichia	Moneam Paddy	Black Gram			90	790,000	4
73	Te Oyi Gorse	Gone Min Est		1	N.	Bahar				- 10	1	3	0.07	Υ-		Agrashira	Minson Paddy	Black Grant			80	7,690,000	e v
77	Te Gyi Gone	Green May Ext		. 10	H	Sales			Mostry	- h	3	7	134	- γ		Agendary	Moreom Paddy	State Grant	1	1	75	300,000	9
172	Te Gyi Gooe	Good Min Est		M	N	Sent			16	- 1	-5	4	150	Y		Cottage Worker	Moreoon Paddy	Elack Grant		7.	100	3,519,700	Y'
71	Te Oyi Gone	Gaze Min Eer		N	N	Serve			4.1	+	1	7	0.79	y		Agroutine	Minwoon Paddy	Block Gram	4-	7	100	1,500,000	у
74	Tar Cityl Gone	Gone Ma En		M	N-	Sene				1		1	040	- y	-	Agriculture	Minoroon Paddy	Black Gram	4		- 65	\$50,000	9
75	Te Gyt Gone	Gove Mir En			No.	Berei			Morastry.		7	- At .	1210	¥	1	Agriculture	Minimum Paddy	Black Gram		J. P.	100	4,600,000	o Y
76	Ta Gyi Gone	Gons Mrs.En		M	(N)	fiere					2	7	1.0	4		Agriculture	Moreston Passty	Back Gran		747	- 66	2,400,000	6 Y
77	Te Gyi Clone	Good Mar Evo		M	N	Berue			12)	2	1	26	4		Agricultur	Monaton Foodly	Black Gram		147	89	L 106 000	6 V
78	Te Oyi Gana	Gree Min En		M	-19	Barne			10	- 5	1	15	180	9		Agricultury	Manuson Fuddy	Black Grave		4	60	1,800,000	o Y
79	Te Gyi Gane	Give Mir En		. Al	W.	Same				1.5	1.	4.	0.96	19		Agricultury	Minneson Paddy	Black Gran		4.	80	£200.000	9 4
88	Te Gyi Goog	Gore Me Est		M	14	Same					2	3	1.02	9		Agriculture	Ministern Paddy	Back Gran	100	1	80	2,409,900	9 Y
81	Te Gyi Gone	Gove Mor En		, M	y	Seur)?	1	4.	227	. 4		Agrichin	Monton Paddy	Black Grant	- 42	4:	80	1,200,000	6 4
62	Te Gyi Gorea	Gena Me Ear		0	.8	Berne				- A	3	1	38.	4		Agriculture	Manager Paddy	Black Grant		1	80	1,500,000	e v
85	Te Gyi Gorea	Cone Ma Ear		W	N	Baros				3.6	7	2	160	Ψ.		Agriculture	Seami	Black Gram	-	0		1,200,000	e v
14	Te Gyl Gana	Gone Mo En		- II	- 6	Barrier			6	34	2	2	1.07			Agriculture	Minnacot Peddy	Black Grant	36		76	500,000	6 Y
終	Ta Gyi Gone	Gone Mis En		, M	- 91	Barrai			- 16	1.	7	.4.	5.15	Ψ.		Agriculture	Monsoon Parkty	Black Grant	4.1	-1-	85	8,600,000	0 Y
88	Te Gyi Gone	Gora Mr. Ein		W	- 8	Banut			181	4	- 3	1	289	ν		Agriculture	Moneson Paddy	Black Grater	40.0	1	70	E 641,000	V .
ET	Te Gyi Gone	Gone Mar Ein		и	N	Batrust				2	-1	7.	0.80	Υ.		Coltage Worker	Monsoon Paddy	Black Gram	-	-1-	75	1,765,000	y .
58	Te Qyi Gove	Girin Min En		W	N	Batter			9	- 1-	- 4	12.	2.06	Y-		Agriculture	Minson Paddy	Stack Gram		1	70	/ 712.000	y -
10	Te Gy Gove	Goria Min Est		u	.14	Bess			- 7	3	1	16	350	4		Agriculture	Minister Paddy	Black Grant	-	4	75	1,300,000	y Y
10	Te Oct Good	Signe Min Em		- 10	N	Batter			4	5	4	2	2.34	7		Agrodies	Minnes Paddy	Black Corn	-	9	105	1,800,000	9 Y
31	Tir Gyr Glone	Goral Martin		10	:N	Beser			91	. 5	- 5	32	0.73	1 Y.		Agriculture	Minson Paddy	Black Gram	E.	10.1	70	900,00	e y
37	Te Gyi Gone	Goné Ma Ein		W.	eN-1	Bene			1500	1.45	1	4	0 69	*		Agriculture	Minopole Paddy	Black Gren	1	3.	70	800,00	y .
93	Ta Gyi Gone	Gory Mrs. Ein		N	N	Bene			1		19	(8)	274	Ψ.		Agricultura	Mineson Puddy	(Sack Gran	2	1911	75	1,914,50	e Y
94	Te Gyl Gone	Gerne Mer Ein		M	N.	Samu			5	3	2	3	11.02	Y		Agoshire	Managain Paddy	Black Gram	181	9.	- 66	1.200.000	W. Y.
95	Te Qyi Gione	Gone Mr. En		11	:8	Synar				4	2	15	LBI	٧		Agricultura	Surmeri Padity	Mirroson Paiddy	Black Gram	1	80	1,500,000	O Y
*	Te Cyl Sone	Gore Min En		0	N	Bene			Graduate	- 81	3.	7	294	Y	11	Agriculture	Microsom Paddy	Stack Gram		76.	85	2,500,000	0 Y
10.	Te Gyt Gooe	Gore Mr En		U	N	Ben			16	1	1	- 6	1.03	Y		Agmillus	Moneom-Paddy	Stack Grant	1.00	1	19	700,900	9
59	Te Gyt Gone	Google Mar Em		. 0	A	Barran			NE		9	-5	565	. *		Agricultura	Samuel Paddy	Mereson Paddy	Black Cries	. 2	- 35	3,700.900	9

VII-4-3

	Village			-		State	es of famil	y .						Land		2		Liv	without				Awarenes
No	Village Tract	VWage	Harve of householder	Sex of Hisolaur (M or F)	Widow Hholder 7 (YM)	Ethinis	Age of Hholder	Telephone number	Educational status of householder	Number of family manbers	Number of male family mamber	Number of femulo family member	Area of families under project (acre)	Land terure, have site deed? (Y/M)	Area to be lost due to road/can all constru- cted (scre)	Main income source	1 of Main multivated crop	2nd Main cultivated erop	3rd Main cultivated crup	How many terres of paddy cultiva tion year	Average yield of paddy (hasket/acre)	Armusi Reuschold sash income (Kyata)	Amere about the Project (Y/N)
Mata									¢				0	2		0	н.	. (4	6	L.		
39	Te Gyi Goni	Gone Mis Ein		N.	N.	Barcar				9	-3	4	166	- Y-		Fato labor.	Minnoon Paddy	Black Gram	7	X	80	1,721,600	Y.
106	Ta Gyi Gone	Gont Min Ein		, M	4	Barrier			- 1	- 3.	7	1	11.48	Y		Agriculture	Maracon Paddy	Black Gram	- I	4	46	3,506,000	Y
601	Te Gyl Gitne	Göre Min Ein		M	N.	Bancar			5	4	4	7	6.30	Ψ.		Wage Weker	Minsoon Paddy	Black Gram		4	70	1,800,000	y .
102	To Gyl Gine	Gore Mrs Ein		M	N.	Barner			Grechate	- 1	7	T.	100	4		Agricultura	Mirmoon Paddy	Black Gram	- T-	1	70	1,000,000	Y
103	Ter Gyr Grove	Gone Mer Ein		M	N.	Barrier			Monatry	5	t	- f	9 100	Ψ.		Agriculture	Monsoon Paddy	Black Gram	- 6	*	70	680,000	9 Y
104	Te Gyi Gine	Gone Min En		M	N.	Bancar			10		i t	4	134	4		Agriculture	Maraonn Paddy	Black Gram	1	1	Mi.	3,000,000	0 Y
666	Ter Gyr Gorne	Gore Min En		M	10	Barcar			-10	- 6	4	4	0.95	Ψ.		Agreigure	Moreone Pasity	Black Gram	1 8	t	70	1,300,000	0 Y
198	Aung Zabu	Aug Zies		F	N.	Barner			3	5	100	- 2	4.95	Ψ.		Agriculture	Summer Paddy	Morseout Paddy	Black Gran	2	66	1,400,000	N N
107	Asing Zabu	Aing Zabe			4	Barcar			10.	1	4	1	271	Y		Agriculture	Summer Paddy	Morrison Paddy	Black Grant	2	66	1,860.066	N O
tot	Aurig Zobu	Aung Ziels		J.F.	10	Barner			10	24.	3	16	119	- y		Agriculture	Surmov Paddy	Morseous Paddy	Black Gram.	2	76	7,200,000	N N
606	Aving Zabu	Aing Zoba		1	H	Barnar			Grachiste	4	Tr.	7	544	y		Grecery Step	Sammer Passy	Morsoon Paddy	Black Gram	2	N	3,000,000	N N
312	Autig Zabu	Aung Zide		A.E.	. 10	Barrier			4	4.	8	3	129	Y		Agriculture	Supreyeer Paddy	Monsoon Paddy	Black Gram	2	M	1,600,000	· Y
m	Aung Zubu	Aing Zaisc			H	Barrar			Graduste	- 3	i i	-7	2:10	¥		Government Stuff	Sammer Pandy	Monsoon Paddy	Black Grant	2	66	1,500,000	o N
112	Aving Zabu	Aung Zabu		F	.14	Barnar			4	5	8	2	1.67	Υ.		Agriculture	Supryor Paddy	Monsoon Paddy	Black Gram	2	46	1,700,000	o N
112	Aung Zabu	Airig Zabic			H	Barner			- 4	- 1	30	1	4.74	Y		Agriculture	Monsoon Paddy	Black Gram		1	76	1,000,000	o +
114	Airig Zabu	Aung Zabio		F	¥	Barnar			.4	A.	. 0	4	7.48	Y .		Agriculture	Summir Paddy	Monsoon Paddy	Black Gram	/2	AS.	100,000	0 14
115	Aung Zubu	Aing Zabu			. Ir	Barrier			Graduate	. 2	7	1	2.12	9		Government Stuff	Sommer Paddy	Moreoon Paddy	Black Gripp	2	66	800,960	O N
116	Aling Zabu	Jung Zabo		F	14	Barner			1	1	10.	10	0.60	Y		Agriculture	Summer Pandy	Monsoon Paddy	Black Grant	2	35	2,000,000	0 14
117	Averg Zubu	Aing Zabu		1	. 11	Barnar			Graduste	- 1	4:	3	100	Υ.		Agriculture	Statemen Paddy	Morecon Paddy	Blex Gran	2	76	1,300,000	0 1
138	Auto Zabu	AugZeu		M	N	Barner			4	5		4	2.00	4		Agriculture	Summer Paddy	Morseon Paddy	Black Grien	2	80	1,300,060	o N
118	Aurig Zabiu	Aing Zobic		M	H	Banar			- 1	- 5	7	4	231	8		Agriculture	Sienmer Paddy	Morecon Paddy	Black Gram	2	16	1,200,000	0 4
120	Aving Zaby	Aung Zabu		M	H	Barnar			10.	1.	.0	15	5.55	Ψ.		Agriculture	Supremor Paddy	Morssoon Paddy	Black Gram	/2	60.	1,500,000	N 0
427	Aung Zabu	Aung Zobii		M	. Hr	Barner			Graduate	1	i i	1	1.00	y.		Agriculture	Moreoon Paddy	Black Gram		T.	75	1,500,000	0 4
122	Aung Zabu	Aung Zubu		W	.N	Berar			10	1	4	1	13.45	Ψ.		Agreidure	Supremer Paddy	Morreon Paddy	Black Gram	2	80	4,900,960	N N
123	Averg Zabir	Aung Zaba		M	W	Bernar			1	4	1	2.	6.32	Y		Agriculture	Moreson Paddy	Black Gram	80	T.	65	900,000	6
124	Aveg Zabu	Aung Zabu		M.	- 9:	Barran			1	1		- 11.	1.53	· y		Trader	Saterne Paddy	Moreson Paddy	Black Grant	2	- 40	1,200,600	N.
125	AvegZebu	Aung Zabu		M	N	Barrier			Gredale	-16-		.1	10.54	Y.		Agriculture	Morecon Paddy	Black Grant	Padds	2	76	3,340,060	Y
126	Aung Zabu	April Table		M	W.	Bancar			1	9	4	-3	102	y-		Agriculum	Signerer Paddy	Monsoon Paddy	Black Gram	2	75	2,800,000	N N
127	Averg Zebu	Aung Zubu		M	14	Barrier			5	4	8	1	1.17	y		Agriculture	Sammer Paddy	Morecon Paddy	Black Gram	ż	M-	1,300,960	o N
178	Aving Zabu	Aurig Zoba		M	W	Barcar			4	4.		1	230	1		Agriculum	Suremer Paddy	Monsoon Paddy	Black Gram	2	M	2,500,000	0 8
129	Averg Zato	Aing Ziess		M	.Nr.	Bener			1	4	- 1	12	2.70	Υ.		Agriculture	Samuel Paddy	Moreous Paddy	Black Gram	2	70	2,000,000	o N
130	Kan Oo (pylo pra nar)	Kan Oo		F	W	Bancar			- 8	- 6.		3	6.52	4		Tradec	Morroon Paddy	Black Gram	1 8	ij.	76	106.000	0 у
131	Kan Co (pyro ma nar)	Kan Ge		F	. Nr.	Barner			4	1		1	7.13	Y		Agriculture	Moreson Paddy	Black Grant	8	1	70	4,500,000	0 4

	Village			-		Stat	es of family	-						Land				Lis	elihoed				Awareness
No	Village Tract	Villege	Name of hooseholder	Sex of History (M or F)	Widow Histolder 7 (Y/N)	Ethiose name	Age of Hysider	Tolephono marities	Educational status of householder	Number of family instrikers	Number of male family recentor	Number of female family member	Area of fermional under project (scre)	Land terrors, tave title deed? (Y/M)	Area to be feet due to read/care al constitu clock (atre)	Main income source	1st Blanc cultivated crop	2nd Blain cultivated crop	2rd Main cultivated crop	tion trany times of paddy cultiva tion/ year	Average yield of paddy (besket/scre)	Annual household cash income (Kysta)	Americabout the Project (Y.N)
liety									c				0	Ė		a		T	1	K	L	0	4
132	Fact On (pyremin sur)	Kan De		F	N.	Bater			7.	-4	7	2	1.40	Y-		Agriculture	Somme Paddy	Memoon Paldy	Black Grant	2	95	2,260,000	N
133	Kan Qa (pyn ma na)	Ken Ov		- 10	19	Same			10.	4	- (17	1.04	77		Agriculture	Morecon Páddy	Black Chars	100	10	(80	1.600,000	Y
134	Kan Qo (pyromia rus)	Kan Di-		M.	N	Same			10.	-3	1.	1.3(.)	1,47	1		Agriculture	Moreon Paddy	Block Grave		f.	11	2:000,000	N
135	Kara Oo (pyro mia nar)	Ken 0e		M.	N	Senr					i.	3:	1.00			Apiculare	Monsoon Paddy	Black Grave		0.	10-	1,900.000	Y
136	Kee Oo (pyrama ree)	Kan On-		M.	N.	Same				14.1	4	(P)	042	1.4		Carperso	Monsoon Paddy	Back Gran	1.75	0.0	10	150,000	8
197	Ken Co (pyryma mr)	Kan On		M.	N.	Server			4.	4	7.	1	1.88	1.0		Agredon	Sammer Packty	Morseon Faddy	Black Street	2	90	3,509,000	9
138	Kart Qu (pyroma ren)	Kan Ge		M	- N	Barrar				1.0	4	4.	0.81	7.		Agriculture	Normon Paidy	Back Gram	: ×	10	16	1,000,000	Y
	Total				+					825	361	324	308.47	-	5-17					-		258787199	

New A pid if the interviewee was additionally asked by structured socio-economic household questionnaire.

B indicate the sex of the bossemold by 44 (male) or 7 (female)

C. Indicate the last gradefined of the education the householder undertook.

O Indicate the farmand area (acre) which is to be covered by the land consolidation Project

E tridicate if the householder has the official land blage right or eachly Y (yes) or N (no.)

F. If tending land is affected but by a farm road and/or carel to be revely constructed under the Project, indicate the cine (acre).

G habitate the main recome source is a policillane, hardest, cottago eldustry, employment, etc.

At Indicate the most expedient corp culti-sted in the Territord to be covered by the Project.

A findingle the The more important crop outbrailed in the familiarid to an opviored by the Project

J. Indicate, 6 any, the 3-5 most important using sufficient in the farmland to be solvered by the Project

K. Indicate how many cultivation of paddy is correct and in the farmfund to be covered by the Project.

L. Indicate the everage post of paddy in the farmland to be covered by the Project

6. Undicate the amount household cush income.

At Il formine has been informed about land correlatation Present or mix, referant Y (yes) or otherwise N (no.).

VII.5 Ho	ouse Hold	is Survey	y		.			
					Intervie	ewer's Name	:	
Farm House	ehold Qu	ıestionna	aire (Only	for Farmer	rs under the L	and Consol	idation Proje	ct)
Carry out th	his Quest	tionnaire	e form surv	vey for at l	east 20% of tl	he Project B	eneficiaries.	
Date:			Far	mer's Nam	e:		Tel:	
Village Nam	e:		Vil	lage Tract N	Name:	_	TS:	
1. Family St	ructure,			re those wl	ho eat in your	· house.		
Member	1 1 00	S	ex		1	Education	T	
Member	Age	Male	Female	None Tick	Monastery Tick	Last Standard	Matriculation Passed? Y/N	Higher Education, Y/N
Husband		√						
Wife			√					
Children								
			+ +		+			
Parents					<u> </u>			
					<u> </u>			
			+				-	
Others	-		+				-	
Others					+			
			1		†			
2. Children	who are	now awa	ay from yo	ur house d	ue to marriag	ge, schooling	g, migrant wo	rk, etc.
Member	Age		ex			Education	<u></u>	
		Male	Female	None Tick	Monastery Tick	Last Standard	Matriculation Passed? Y/N	Higher Education, Y/N
Children			1		<u> </u>			
					<u> </u>			
					<u> </u>			
					<u> </u>			
3. What pro	perties d	lo you ha	ave?					
□Radio		□TV se	 et	☐ Electri	ic Light \Box	Sewing mac	hine Tube	e well

☐Others (

 \square Pond/dam

☐ Cattle Plough	☐Bull cart	□Bicycle	□Motorcycle	□Car
☐ Hand tractor	☐Engine pump	□Thresher	Sprayer for pesticide	☐Rice miller
4. What water source	ce for drinking/cooki	ing do you use ?		
Dug well	Oven tuboveall	Noighbor's tubayyall	Canal	Diver/streem

□Others (

JICA VII-5-1 ID

5. How much acre farms do you have by type?

Trmo	A ovo	Wha	at crops do you cultiv	ate?
Туре	Acre	Pre-monsoon	Monsoon	Winter
Low land (le)				
Upland (ya)				
Kaincun				
Others()				
Total				

5.1 Out of the low land (paddy area), how many acres of land are located in the Land Conso	olidation
Project Area (how many acres of the paddy land will be land-consolidated) ?	Acre

6. How have you got the farm land?

How you have got?	Acre	Remarks
☐ Inherited from your farther		
☐ Inherited from your farther in law		Brought by your wife
☐ You bought		If You bought, When Year
☐ As mortgage for loan		
☐ Others, please specify in Remarks		

7. Out of last 10 years, how many years have you had by following production for the farmland?

Crops	Almost nothing (less than 20%)	Worse (20 – 80%)	Average (80 – 120%)	Better (Over 120%)	Total
Paddy					10
Pulses (if cultivated)					10

7.1 How much are the crop yield in <u>Basket per Acre</u> by crop situation for the farm land?

Crops	Almost nothing (less than 20%)	Worse (20 – 80%)	Average (80 – 120%)	Better (Over 120%)					
Paddy									
Pulses (if cultivated)									

7.2 What were the reasons for above Worse and Almost Nothing Harvest?

No.	Reasons
1.	
2.	
3.	

8. What difficulties/ problems do you have in agriculture production/income improvement?

Items	Tick
Small farm size to feed your family	
Water shortage for irrigation	
Low rainfall	
Unstable rainfall (fluctuating rainfall year by year)	
Flood Occurrence	
Lack of agriculture finance(loan)	
High price of agriculture input	
Lack of agriculture input	
Lack of farm labors and/or lack of draft animal	_
Low fertility of the soils	

Othora (amagifu	ortation re	ad to m	narket											
Others (specify	:)				
O. If you have	heen doir	ıo farn	ning s	ince l	long t	ime ago	. nle	ase answ	er the t	rend:				
l: Very Bad, 2:		_	_		_						bood.			
•				ears a	-	u, just a		ge), 4. Go 20 years ag				years ag	70	\neg
NOW	V			ind 20			(around 199	3)			und 198		
f the 'NOW' is	s better th	an befo	re. wł	ıv?						1				
If the 'NOW' is				•										_
Tule NOW IS	s worse ur	an bere	ne, wi	11y :										-
10. Where do	vou obtai	n infor	matio	n for	new	agricul	ture	technolog	gies ?					
☐MAS extens						_		_		specif	v:			
								•	`-		-			
l1. If you hav blease describ													arvest	er)
Type of M					n, me hased			at that tim				uı. Rent oı	ıf	
Type of M	aciiiic		Tear	1 urci	iascu	1	TICC	at that thin	c, ixyai	3		Yes/ N		
												Yes/ N		
												Yes/ N		
												Yes/ N		
						<u> </u>				<u> </u>				
12. What crop project?	ps did yo	u plar	nt last	t yea	r in 1	the fari	nlan	d to be o	covered	by t	the lai	nd cor	isolida	tioi
Please describe	the cropp	oing cal	lendar	by c	rop pl	aned in	the i	rrigated fa	rmland.	•				
Mon	th	1	2	3	4	5	6	7	8	9	10	11	12	
Area					·		Ů				10		12	-
Paddy (area:	acre)													
(area.	acre)													
(area:	acre)													
(area:	acre)													-
(area:	acre)													
Example	s													
Paddy (dry se	ason)			→									4	
(0.6 acre)														-
Paddy (rainy so (0.8 acre)	· II					←				→				
Chick pea														
(0.8 acre)				→									←	ı
(0.0 acre		•	,		4 6.	4 1	•	,		41 6		1 4 1		•
				noun	t of 11	nputs by	y cro	op do you	use <u>in</u>	the fa	armla	nd to I	be cove	rec
13. What kind		n nroi												
13. What kind by the land co	nsolidatio	on proj Seed		Ure	ea	Compo	ınd	TSP	Con	npost	Insec	cticide	Fungi	cide
13. What kind			i	Ure (Ba		Compou		TSP (Bag)		npost of cart)	1	cticide Lit.)	Fungi (Lit	
13. What kind by the land co	nsolidatio	Seed	i			_				-	1		_	
13. What kind by the land co	nsolidatio	Seed	i			_				-	1		_	
13. What kind by the land co	nsolidatio	Seed	i			_				-	1		_	

Project for Rehabilitation of Irrigation Systems

Myanmar

Lack of market

Low farm-gate price of crops

13.1 How much does it cost for each input in relation to above table?

Crop	Acre	Seed (Kyats)	Urea (Kyats)	Compound (Kyats)	TSP (Kyats)	Compost (Kyats)	Insecticide (Kyats)	Fungicide (Kyats)	Total (Kyats)

13.2 How much does labor/animal/machine cost for <u>one paddy farming in the farmland to be covered</u> by the land consolidation project?

Size of cultivated (acre)

Item	Farm labor (Kyats)	Rental Animal (Kyats)	Rental Machine (Kyats)	Total (Kyats)
Land Cleaning	(11)titis)	(11) tito)	(12) 413)	(11)465)
Plowing				
Soil Pudding				
Seeding				
Transplanting				
Fertilizer Application				
Pesticide/fungicide Application				
Herbicide Application				
Weeding				
Harvesting				
Threshing				
Transporting (farm to dry yard)				
Drying/Packing				
Transporting (dry yard to market)				
Water Fee				
Total				

Total

13.3 How much does labor/animal/machine cost for other farming than paddy <u>in the farmland to be covered by the land consolidation project?</u>

Crop (Size of cultivated (), acre) Farm labor Rental Animal Rental Machine Total Item (Kyats) (Kyats) (Kyats) (Kyats) Land Cleaning Plowing Soil Pudding Seeding Transplanting Fertilizer Application Pesticide/fungicide Application Herbicide Application Weeding Harvesting Threshing Transporting (farm to dry yard) Drying/Packing Transporting (dry yard to market) Water Fee

INCOME PART

21.1 How much are the agriculture gross profit by crop in an average (normal) year?

Crop	Acre harvested	Production (basket) A(=a+b+c)	Yield (basket/ac)	Home consumption (Basket) (a)	Seed (Basket) (b)	Selling (Basket) (c)	Farm gate price, Kyats/basket (B)	Gross Profit Kyats AxB
Total								Kyats

21.2 If you or your family members work as Farm Labors, please answer the following:

Who works ?	Food/snack Provision?	Wage Kyats/ half or full day	Working Days in a Year	Total Kyats/ year
		□full day □half day		
		□full day □half day		
		□full day □half day		
		□full day □half day		
		□full day □half day		
Total				Kyats/

Who works:	1. Husband, 2.	Wife, 3. Son, 4. Daughter,	5. Parent, 6. Others (specify)
Food/snack:	1. Breakfast, 2.	Lunch, 3, Supper, 4, Space	ck (1 time), 5. Snack (2 times)

21.3 What livestock do you have, and how much do you earn from livestock per year?

Livestock type	How many you have?	How many/much you sell a year?	Average selling unit price, Kyats		Total Kyats/ year
Local cow		selling			
		Milk: □viss/day	Total Milk, viss	Unit price	
		Months			
		From lending oxe	n:		
Sheep					
Goat					
Pig					
Chicken					
Eggs					
Duck					
Quail					
Dairy Cow (cross)		Milk □viss	Total Milk, viss	Unit price	
		Months .			
Others()					
Total					Kyats

C

В

D

 \mathbf{E}

F

G

21.4 Do you have any family members who are employed as wage worker?

What Job ?	Food/snack Provision?	Wage Kyats/ day	Working Days in a Year	Total income Kyats/ year
				Kyats
	What Job ?	What lob 7	What lob 7	

Who employed: 1. Husband, 2. Wife, 3. Son, 4. Daughter, 5. Parent, 6. Others (specify) Food/snack: 1. Breakfast, 2. Lunch, 3. Supper, 4. Snack (1 time), 5. Snack (2 times)

21.5 Does your family run any cottage industry or <u>broker</u> (here, not employed)?

Who does ?	What Products?	How many employed	Gross sale, Kyats/ day	Expenses, Kyats/ day	Net Profit, Kyats/ day	Working days a year	Net Profit, Kyats/year
Total							Kyats

Who does: 1. Husband, 2. Wife, 3. Son, 4. Daughter, 5. Parent, 6. Others (specify)

21.6 Apart from farming, farm labor, cottage industry & livestock, what other incomes you have a supplied of the contraction of the contractio	?
--	---

21.6 Apart from farming, i	arm lab	or, cottage industry & livestock, what other incomes you
☐Migrant work:		Kyats in total per year (within Myanmar)
☐Remittance:		Kyats in total per year (within Myanmar & from abroad)
□Others 1():	Kyats in total per year
☐ Others 2():	Kyats in total per year
□ Others 3():	Kyats in total per year
Total of Other Incomes		Kyats in total per year

21.7 Total Income

Туре	Туре	Kyats per year
A	Farming (Gross)	
В	Farm labor (Net)	
C	Livestock (Gross)	
D	Cottage (employed), Net	
E	Cottage/ broker (self-running), Net	
F	Other Incomes, Net	
Total		

22.1 Do you know about Land Consolidation Project?	□Yes	□No
--	------	-----

- 22.2 Do you accept to change your farmland with other farmer's farmland if the purpose is to consolidate fragmented piece of farmlands? **□**Yes \square No
- 22.3 Can you agree to donate a part of your farmland for the construction of farm roads and/or canals within the Project area? **□**Yes \square No
- 22.4 Up to how much percentage of the farmland, can you agree to donate for the construction of farm roads and/or canals within the Project area? % (or acre)

VII-5-7 JICA ID 1. Family Structure

			Num	ber					Ag	e			
Village	Family	number	/HH	CI	nildren / H	H	- 1	lusband		Wife			
	Ave	Min	Max	Male	Female	Total	Ave	Min	Max	Ave	Min	Max	
Gone Min Inn	5	2	11	1.9	1.3	3.2	55	36	84	49	33	68	
Sha Taw	5	3	7	2	0.8	2.8	53	37	67	53	34	60	
Ayinlo	6	4	8	1.8	2.1	3.9	56	38	91	52	33	87	
Aungzabu	4	3	7	0.7	2	2.7	61	32	86	53	32	65	
Total	5	3	8.25	1.6	1.55	3.15	56.25	35.75	82	51.75	33	70	

2. Family education Father's Education

Village	No	Monast					Gra	de					Subtot	Higher Educat ion	Total
village	educati on	ery	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	al		
Gone Min Inn		3				3	2	2	2	7	1	5	25	2	27
Sha Taw		1				1	1		1				4		4
Ayinlo	1	2				2	2		2	2	2		13		13
Aungzabu	1											3	4	1	5
Total	2	6	0	0	0	6	5	2	5	9	3	8	46	3	49

Mother's Education

1/31222	No	Monast					Gra	de					Subtot	Higher	Total
Village	educati on	ery	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	al	Educat ion	
Gone Min Inn	4	2				12	3	3	2	2	1	1	26		26
Sha Taw		3			-	1		1					5		5
Ayinlo	1	2				5	3		1	1			13		13
Aungzabu		1							1	1		1	4	- 1	5
Total	1	8	0	0	0	18	6	4	4	4	1	2	48	- 1	49

Children's Education

Village	No	Monast					Gra	de					Subtot	t Higher Educat	Total
Village	educati on	ery	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	al	ion	lotai
Gone Min Inn	8		4		4	4	11	6	7	12	4	21	81	17	98
Sha Taw		1			1	4	4	1	1	1			13	2	15
Ayinlo	5	1			1	6	4		9	5	5	4	40	8	48
Aungzabu	1					1			1			4	7	9	16
Total	14	2	4	0	6	15	19	7	18	18	9	29	141	36	177

3.Farmer's Properties

Village	Radio	TV set	Electric Light	Sewing machin e	Tube well	Cattle Plough	Bull cart	Bicycle	Motorcy cle	Car	Hand tractor	Engine pump	Threshe r	Slayer for pesticid	Rice mill
Gone Min Inn	24	24	21	4	9	6	4	21	19	1	5	5	6	21	1
Sha Taw	4	5	5	1	1			1	2	-	- P	1	-	5	9
Ayinlo	10	12	13	200	9	1	4	10	8	1	5	2	1	10	-
Aungzabu	6	6	6	2	4	3.0	1911	2	6		-	li ber i		5	- 3
Total	11	12	11	2	6	2	2	9	9	1	3	2	2	10	0

4.Water Resource

Village	Dug well	Own tubewell	Neighbor's tubewell	Pond/dam	Others
Gone Min Inn	1	8	21	0	4
Sha Taw	2	1	1	0	1
Ayinlo	1	7	6	0	0
Aungzabu	0	5	1	0	0
Total	4	21	29	0	5

5. Cropping area

DATE OF THE OWNER.				L	ow Land				- E	Upland							
Village Tract	Monsoon paddy			Winter blackgram			Pre Monsoon Paddy			Moi	nsoon pa	addy	V	Vinter cro	р		
	Ave	Min	Max	Ave	Min	Max	Ave	Min	Max	Ave	Min	Max	Ave	Min	Max		
Gone Min Inn	3.51	0.30	18	3.09	0.80	18	0.42	1.20	5.7								
Sha Taw	2.09	1.00	3.60	2.09	1.00	3.60											
Ayinlo	5.69	0.48	25.00	6.82	0.48	25.00	6.12	2	25.00								
Aungzabu	0.55	1.20	2.10	2.33	0.97	5.57	1.398	0.97	5.57	-							
Total	2.96	0.30	25	3.58	0.48	25	6.12	2.00	25								

5.1. Paddy land area in consolidation area

Village Tract	Acerage
Gone Min Inn	3.28
Sha Taw	2.04
Ayinlo	7.34
Aungzabu	2.33
Total	3.75

6. The way got the farm land

Village Tract	Inherited from father	Inherited from father in law	Bought
Gone Min Inn	17	7	3
Sha Taw	2		4
Ayinlo	9	2	5
Aungzabu	6	1	- 1
Total	34	10	13

7. Yield in last 10 years

Village	Number of Years (Paddy)						
	Almost nothing (Less than 20%)	Worse (20-80%)	Average (80-120%)	Better (Over 120%)	Total		
Gone Min Inn	0.00	2.07	7.70	0.23	10.00		
Sha Taw	0.20	3.20	6.60		10.00		
Ayinlo	0.08	0.85	9.08		10.00		
Aungzabu			10.00	-	10.00		
Total	0.07	1.53	8.35	0.06	10.00		

Village	Black Gram						
	Almost nothing (Less than 20%)	Worse (20-80%)	Average (80-120%)	Better (Over 120%)	Total		
Gone Min Inn	0.50	3.13	5.76	0.60	10.00		
Sha Taw	2.20	3.40	4.40	4	10.00		
Ayinlo	0.54	2.77	6.69	-	10.00		
Aungzabu		0.83	9.17	-	10.00		
Total	0.81	2.53	6.51	0.15	10.00		

7.1Yield in basket per acre by crop for the farm land

	Paddy (bsk)					
Village	Almost nothing (Less than 20%)	Worse (20-80%)	Average (80-120%)	Better(Over 120%)maximu m		
Gone Min Inn	2	30.17	79.00	6.67		
Sha Taw	2-	22.00	58.00	-		
Ayinlo	-	27.31	90.54	-		
Aungzabu		24.17	81.67	-		
4 Villages Total		26.49	75.85	6.67		

Village	Black Gram (bsk)					
	Almost nothing (Less than 20%)	Worse (20-80%)	Average (80-120%)	Better(Over 120%)maximu m		
Gone Min Inn	(a)	5.17	13.27	2.33		
Sha Taw	-	3.00	10.00	-		
Ayinlo	22	1.77	16.38	i.		
Aungzabu	-	9	12.50	-		
4 Villages Total		3.31	13.04	2.33		

8.Difficulties/ problems in agriculture production/ imcome improvement

Items	Number
Small farm size to feed your family	22
Water shortage for irrigation	40
Low rainfall	21
Unstable rainfall (fluctuating rainfall year by year)	22
Flood Occurrence	
Lack of agriculture finance(loan)	21
High price of agriculture input	37
Lack of agriculture input	19
Lack of farm labors and/or lack of draft animal	26
Low fertility of the soils	29
Low farm-gate price of crops	26
Lack of market	20
Bad/poor transportation road to market	7

9. The trend for farming since long time ago

	NOW	10 years ago	20 years ago	30 years ago
Very bad	1 1	0	0	1
Bad	17	10	2	1
Just OK	29	30	17	17
Good	7	12	16	15
Very Good	0	0	0	0

9.1 The reason why farming is better than before

Items	Number	Percentage	
Disease	2	7 %	
Pests	2	7 %	
Bad weather	1	4 %	
Lack of fertilizer	3	11 %	
Lack of labor	4	14 %	
Lack of irrigation water	5	18 %	
Low price of crop	3	11 %	
High cost of imput	7	25 %	
repeated cultivation	111	4 %	

Items	Number	Percentage	
More skilled labors	1	10 %	
Enough fertilizer	1	10 %	
Using advanced machineries	4	40 %	
High price of crop	1	10 %	
Management improving	1	10 %	
Government improvement programe	1	10 %	
New technology	1	10 %	

10. Information source of agriculture technologies

Items	Number
MAS Extension Staff	28
From other farmers	22
Book	5
TV	3
Others	13

Others: Company(6), Advertisement(3), Radio(3), Own(1)

11. Agricultural machinery

	Ppurchased year	Number	Average cost (Kyat)	For rental	For oun use
Tractor	1,998	1	260,000	1	
Hand tractor	1,998	2	375,000		2
	2,000	4	702,500	1	3
	2,001	1	600,000		1
	2,002	1	800,000		1
	2,003	1	350,000	1	
	2,008	1	650,000		1
Thresher	1,995	2	400,000	2	
	2,006	1	1,300,000		1
Water pump	2,001	1	150,000		1
	2,010	1	60,000		1

12. Cropping season

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Summer paddy		- 12	/		1 farmer	s	/	1				
Monsoon paddy	1 = 1 1					7	/		4 farmer	5	/	
Black gram		54 fa	rmers		/						/	

13.Kinds and amount of inputs

	Urea	Compound	TSP	Compost	Insecticide	Fungicide	Herbicide Amount/ac (1lit)	
Village	Amount/ac (bag)	Amount/ac (50kg)	Amount/ac (50kg)	Amount/ac (cart No)	Amount/ac (1lit)	Amount/ac (g)		
Gone Min Inn	0.35	0.21	0.03	0.31	0.12	4.83	0.14	
Sha Taw	0.54	0.39	0.10	0.98	0.20	100	0.29	
Avinlo	0.14	0.11	4	0.10	0.07		0.06	
Aungzabu	0.47	0.29	0.04	0.21	0.09		0.36	
Average	0.37	0.25	0.04	0.40	0.12	1.21	0.21	

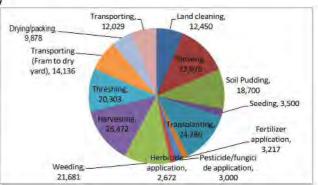
	Insecticide	Fungicide	Herbicide	Hormone	
Village	Amount/ac (lit)	Amount/ac (g)	Amount/ac (lit)	Amount/ac (kg)	
Gone Min Inn	0.25	6.91	0.04	0.11	
Sha Taw	0.34	0.10	100	0.20	
Ayinlo	0.05	0.05	- 4	0.08	
Aungzabu	0.98	0.11		0.76	
Average	0.41	1.79	0.01	0.29	

13.1 Cost for inputs (Kyat)

Village	Urea(bag)	Compound (50kg)	T-super(50kg)	Compost (No.of cart)	Insecticide(1lit/ 1000g)	Fungicide (1000g)	Herbicide (1lit/ 1000 g)	Hormone (kg)
Gone Min Inn	19,009.66	13,140.91	28,173.08	2,703.13	15,161.29	9,000.00	12,387.54	8,790.70
Sha Taw	19,636.36	8,750.00	15,000.00	3,150.00	13,000.00	10,000.00	11,833.33	10,000.00
Ayinlo	22,031.25	12,650.00	24,000.00	3,000.00	13,083,33	14,750.00	12,500.00	11,333.33
Aungzabu	20,461.54	22,375.00	30,000.00	2,666.67	7,200.00	8,000.00	12,800.00	7,142.86
Average	20,284.70	14,228.98	24,293.27	2,879.95	12,111.16	10,437.50	12,380.22	9,316.72

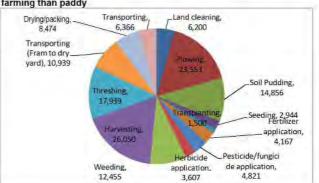
13.2 Average cost for labor/ animal/ machine for paddy

Items	Average input (Kyat)
Land cleaning	12,450
Plowing	23,926
Soil Pudding	18,700
Seeding	3,500
Transplanting	24,286
Fertilizer application	3,217
Pesticide/fungicide application	3,000
Herbicide application	2,672
Weeding	21,681
Harvesting	26,472
Threshing	20,303
Transporting (Fram to dry yard)	14,136
Drying/packing	9,878
Transporting	12,029



13.3 Average cost for labor/ animal/ machine for other farming than paddy

Items	Average input (Kyat)
Land cleaning	6,200
Plowing	23,553
Soil Pudding	14.856
Seeding	2,944
Transplanting	1,500
Fertilizer application	4,167
Pesticide/fungicide application	4,821
Herbicide application	3,607
Weeding	12,455
Harvesting	26,050
Threshing	17,939
Transporting (Fram to dry yard)	10,939
Drying/packing	8,474
Transporting	6,366



21. Amount of income in a yaer (Kyat)

Village	Farming	Farm Labor	Livestock	Cottage (Net)	Cottage	Other Incomes	Total
Gone Min Inn	40,091,300	3,780,000	1,930,000	4,050,000	5,267,250	6,402,500	61,521,050
Sha Taw	2,838,500	780,000	350,000	240,000	765,000	×	4,973,500
Ayinlo	46,534,600	337,500	3,200,000	3,833,999	4,987,500	16,941,600	75,835,199
Aungzabu	6,789,600	de la companya della companya della companya de la companya della		3,240,000	•	5,178,000	15,207,600
Average	24,063,500	1,632,500	1,826,667	2,841,000	3,673,250	9,507,367	39,384,337