# Poders in Labutta Township

# <u>Labutta North Polder</u>

## Shansu Sluice Gate



- Shansu sluice locates in Labutta (North) polder, it is about 1.5 km north direction from Labutta town.
- Sluice gate is composed of total 3 openings, upstream side is slide gate, downstream side is flap gate system.
- The said sluice has received no damage by Nargis Cyclone.

Gate No.	1	2	3
	Slide Gate	Slide Gate	Slide Gate
Land Side It may be good but to be checked because corrosion was observed at the guide frame		It may be good but to be checked because corrosion was observed at the guide frame	It may be good but to be checked because corrosion was observed at the guide frame
	Flap Gate	Flap Gate	Flap Gate
River Side	Does not function well and saline water intrued when tide rises up. Required to be repaired	Does not function well and saline water intrued when tide rises up. Required to be repaired	Does not function well and saline water intrued when tide rises up. Required to be repaired

By inspection with site engineer, the condition of sluice is as follow;

- Polder construction project "Paddy I" constructed 3m height above sea level dike but ECL (existing crest level) is only 2.1m so 0.9m of dike embankment from the top has been eroded due to water and wind erosion within last 30 years.

## Kyaukchaung Sluice Gate



- Kyaukchaung sluice locates at northern part of Labutta (North) polder and it has 2 numbers of openings with relatively narrow leading and outfall channels.
- There was no damage due to Nargis cyclone according to the site engineer of Irrigation Department By inspection with site engineer, the condition of sluice is as follow;

Gate No.	1	2		
Land Side	Slide Gate	Slide Gate		
	It may be good but to be checked	It may be good but to be checked		
	Flap Gate	Flap Gate		
River Side	Does not function well and required to be repaired	Does not function well and required to be repaired		

- Existing crest level of dike is about 2m and the original crest elevation after Paddy I project was 3m.

#### Labuttalok Sluice Gate



- Labuttalok sluice locates at west side of Labutta (North) polder, where is 1.5km inside from confluence between Thetkelthaung river and Labuttalok river.
- There is no damage due to Nargis cyclone.
- Total 9 openings have been installed, upstream side is slide gate system and downstream side is flap gate system and condition of each gate was checked with site engineer as follows;

Gate No.	1	2	3	4	5	6	7	8	9
	Slide Gate								
	lt may be	It may be	It may be						
	good but								
Land Side	corrosion								
	was observed								
	at the guide								
	frame								
	Flap Gate								
	Leakage of								
River Side	water due to								
	sealing								
	trouble								

- Accessibility of Labuttalok sluice is about 6km from Labutta town it will take about 15 minutes by car.
- Labuttaok village has total 106 households with 239 females and 212 males total 451 peoples.
- Water in upstream (fresh water) side is utilized by villagers for domestic purpose, such as cloth washing, bathing, and swimming as a recreation at late afternoon so it may be suitable for model rehabilitation project site.

<Model rehabilitation contents at Labuttalok sluice>

- Bank rehabilitation is recommended at both sides of leading channel embankment 300m from the sluice at

upstream, at both sides of outfall channel bank embankment 200m at downstream side from the sluice.

- Masonry steps shall be provided at the upstream of sluice for community utilization such as bathing and cloth washing where deep embankment erosion is observed, and gabion works are not recommended because the location has risk of saline water intrusion from downstream side.
- Existing crest level at the sluice is about 2.7 3.0m at this moment so execution of model embankment is considered not so difficult.
- Dike embankment length at right side will be about 300m, that of left side will be about 2.3km.
- After left side embankment, about 1km (from a jetty in Labuttalok to the above mentioned dike) of pavement improvement will be required for the purpose of rock transportation from the river side.
- Reinforcement of the jetty is also recommended because the present structure width is only 3m for small cargo, 4.5m width for heavy cargo is proposed.
- Approach pass from village road to the jetty also shall be improved.
- Village power supply line, about 250m length, shall be shifted to opposite side of road because it will disturb damp track transportation.
- One (1) drainage canal structure shall be strengthened because of heavy load of dump truck passing.



#### Nyaunglain water retention gate

- Nyaunglain water retention gate locates along the branch river of Labuttalok river, near the confluence of the said both rivers (Labutta (North) polder).
  - There is no sluice damage due to Nargis cyclone. condition of each gate was checked with site
  - engineer as follows;

Gate No.	1	2	3
	Slide Gate	Slide Gate	Slide Gate
	RC concrete base was broken.	RC concrete base was broken.	RC concrete base was broken.
	Hoisting assembly to be repaired.	Hoisting assembly to be repaired.	Hoisting assembly to be repaired.

- Those gates are utilized especially in dry season for maize and sunflower cultivation at small area.

### Latwaikwe Sluice Gate



- Latwaikwe sluice locates at southern side of Labutta (North) polder and it consist of five (5) openning.
- According to the site engineer of Irrigation Department, there is no damage of sluice due to Nargis cyclone.
- By inspection with site engineer, condition of sluice is as follows;

Gate No.	1	2	3	4	5
	Slide Gate	Slide Gate	Slide Gate	Slide Gate	Slide Gate
Land Side	RC base for Hoisting assembly is damaged. Hoisting assembly to be replaced.	RC base for Hoisting assembly is damaged.	RC base for Hoisting assembly is damaged. Hoisting assembly to be replaced.	RC base for Hoisting assembly is damaged.	RC base for Hoisting assembly is damaged.
	Flap Gate	Flap Gate	Flap Gate	Flap Gate	Flap Gate
River Side	Need to repair due to sealing trouble.	Need to repair due to sealing trouble.	Need to repair due to sealing trouble.	Need to repair due to sealing trouble	Need to repair due to sealing trouble.

- "Save the Children" had their activity to purify canal water up to the end of January 2009 and delivered water to 10 villages near by about 4,500 peoples but salt content of the canal water became high so they have abandoned this place for water purifying and shifted to another place.
- Existing crest level of dike around the sluice was about 1.8m and implemented dike height was 3.0m so 1.2m of soil erosion had occurred.
- About 0.3m depth of flood water overtopping (saline water) was observed by a gate keeper at Nargis cyclone.

## Mayan (south) Sluice Gate



- Mayan (south) sluice locates along Mayan river at southwest side of Labutta (north) polder, consist of five (5) numbers of openings.
- There is no sluice damage due to Nargis cyclone.
- By inspection with site engineer, condition of the sluice gate is as follows;

Gate No.	1	2	3	4	5
	Slide Gate	Slide Gate	Slide Gate	Slide Gate	Slide Gate
Land Side	Hoisting assemblyIt may be good, butto be repaired.to be checked.		It may be good, but to be checked.	Hoisting assembly to be repaired.	It may be good, but to be checked.
	Flap Gate	Flap Gate	Flap Gate	Flap Gate	Flap Gate
River Side	Seal portion to be repaired due to leakage of water.	Seal portion to be repaired due to leakage of water.	Seal portion to be repaired due to leakage of water.	Seal portion to be repaired due to leakage of water.	Seal portion to be repaired due to leakage of water.

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- Existing crest level of dike around sluice is 1.8m, original height of it is 3.0m after implementation of Paddy I project.

# Mayan (north) Sluice Gate



- This sluice locates just north side of Mayan (south) sluice and is composed of 5 openings.
- By inspection with site engineer, condition of the sluice gate is as follows;

Gate No.	1	2	3	4	5
	Slide Gate				
Land Side	Hoisting assembly to be repaired.	It may be good, but to be checked.	Hoisting assembly to be repaired.	Hoisting assembly to be repaired.	It may be good, but to be checked.
	Flap Gate				
River Side	Seal portion to be repaired due to leakage of water.	Seal portion to be repaired due to leakage of water.	Seal portion to be repaired due to leakage of water.	Seal portion to be repaired due to leakage of water.	Seal portion to be repaired due to leakage of water.

- Existing crest level of dike is 1.75m but there was no flood water overtopping during Nargis cyclone passing.
- Some portions of dike neat this sluice was damaged by Nargis cyclone and emergency repairing was carried out by Irrigation Department.

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## **Phope Sluice Gate**



- Phopea sluice locates northern side of Labutta (north) polder, along Kyauk Phyu river with wide width.
- The sluice consists of ten (10) numbers of openings.By inspection with site engineer, condition of the sluice gate is as follows;

Gate No.	1	2	3	4	5	6	7	8	9	10
	Slide Gate	Slide Gate	Slide Gate	Slide Gate						
Land Side	It may be good but to be checked.	lt may be good but to be checked.	lt may be good but to be checked.	lt may be good but to be checked.	It may be good but to be checked.	It may be good but to be checked.	RC base and Hoisting assembly are damaged	RC base and Hoisting assembly are damaged	RC base and Hoisting assembly are damaged	RC base and Hoisting assembly are damaged
	Flap Gate	Flap Gate	Flap Gate	Flap Gate						
River Side	Leakage of water and to be checked	Leakage of water and to be checked	Leakage of water and to be checked	Leakage of water and to be checked						

- Stop logs between two (2) gates made by iron are all rusted and it can not be used.
- In stead of iron stop logs, stop logs with concrete piers are recommended.

Location	Items	Feet (ft)	Meter (m)
Land Side	Temporary coffer dam length	148	45
	Temporary coffer dam height	6	1.8
River Side	Temporary coffer dam length	197	60
Kiver Side	Temporary coffer dam height	11	3.3

- There is no sluice damage by Nargis cyclone.

## Labutta South Polder

#### Gantate Sluice Gate



- Gantate sluice located at west side of Labutta (south) polder and consist of 3 openings.
- There is no damage by Nargis cyclone in this sluice.
- By inspection with site engineer, condition of the sluice gate is as follows;

Gate No.	1	2	3
Land Side	Slide Gate	Slide Gate Slide Gate	
Land Side	It may be good but to be checked.	It may be good but to be checked.	It may be good but to be checked.
	Flap Gate	Flap Gate	Flap Gate
River Side	To repair seal to reduce the water leakage	To repair seal to reduce the water leakage	To repair seal to reduce the water leakage

- No flood overtopping was observed at the time of Nargis cyclone passing.
- Existing crest level of dike around sluice is about 1.8m, it is considered to be eroded from 3.0m after Paddy I project implementation.

### Kwaklake Sluice Gate



- Kwaklake sluice locates at the northern side of Gantate sluice in Labutta (south) polder and is composed of six (6) numbers of openings.
- There is no damage due to Nargis cyclone and any flat water over topping.
- By inspection with site engineer, condition of the sluice gate is as follows;

Gate No.	1	2	3	4	5	6
	Slide Gate	Slide Gate	Slide Gate	Slide Gate	Slide Gate	Slide Gate
Land Side	Hoisting assembly to be repaired or replaced	It may be good, but to be checked.	It may be good, but to be checked.	Hoisting assembly to be repaired or replaced	Hoisting assembly to be repaired or replaced	It may be good, but to be checked.
	Flap Gate	Flap Gate	Flap Gate	Flap Gate	Flap Gate	Flap Gate
River Side	Leakage of water and seal to be repaired	Leakage of water and seal to be repaired	Leakage of water and seal to be repaired	Leakage of water and seal to be repaired	Leakage of water and seal to be repaired	Leakage of water and seal to be repaired

- "Save the Children" worked at Latwaikwe sluice has shifted to this place for purifying water, targeting 46 villages, 20,000 people, 3 liter per day per capita, and their water purifying capacity is about 2,400liter per day at this moment.
- Drinking water activities by "Save the Children" are planned up to the end of May 2009, it is not sure their schedule after May.
- Existing crest level of dike around sluice is 2.1m, which has been eroded from 3.0m height after completion of Paddy I project.

## Mi U Sluice Gate



- Mi U Sluice locates at south of Labutta (South) polder and consist of 8 openings.
- By inspection with site engineer, condition of the sluice gate is as follows;

Gate No.	1	2	3	4	5	6	7	8
	Slide Gate							
	It may be good							
Land Side	but to be							
	checked. RC							
	concrete base							
	to be repaired.							
	Flap Gate							
River Side	Seal were to be							
	repaired							

- The dike was overlapped by 0.3m during Nargis and erosion occurred at that time was repaired by Irrigation Department as emergency repairs. At the time of inspection, the dike was repair as communication road from Labutta to Pyinsalu.
- There was a temporary coffer dam at Downstream channel made by "Save the children" to purify the water for drinking of villagers near by the purifying machine are still installing and not yet functioning.

# Alekyun 3 Polder

### Tawgaung Sluice Gate



- Tawgaung sluice gate locates in Alekyun No. 3 polder.
- There are four (4) openings at this sluice, No. 1 and No. 4 gates at upstream side are stop log system, No. 2 and No. 3 at upstream side are slide gate system.
- Four (4) numbers of flap gates are installed at downstream side openings.
- By inspection with site engineer, condition of the sluice is as follows;

Gate No.	1 2		3	4
	Stop log	Stop log	Stop log	Stop log
Land Side	de Slide should be Shaft is to be installed replaced		Damaged by Cyclone Nargis. Gear assembly shaft, Guide frame are to be repaired.	Slide should be installed
	Flap Gate	Flap Gate	Flap Gate	Flap Gate
River Side Leakage of water an need to repair seal		Leakage of water and need to repair seal	Leakage of water and need to repair seal	Leakage of water and need to repair seal

- Temporary cofferdam for the said repairing will be 30m with 2.7m height at upstream and 45m with 4.6m width at downstream side.

# Bitud 3 Polder Kaingtaw Sluice Gate



Kaingtaw Sluice locates at west of Betud (3) polder.

- Total numbers of upstream side gates are 6 numbers.
- Out of six 6 gates, Number 1 and Number 6gates are composed of stop log system.
- From No.2 to No.5 gates are composed of slide gate system..
- By inspection with site engineer, condition of sluice is as follows.

Gate No.	1	2	3	4	5	6
	Stop log	Slice Gate	Slice Gate	Slice Gate	Slice Gate	Stop log
Land Side	Damaged by Nargis New Slide gate should be installed.	Shaft to be repaired.	Shaft to be repaired.	Damaged by Nargis.	Damaged by Nargis.	New slide gate should be installed.
	Flap Gate	Flap Gate	Flap Gate	Flap Gate	Flap Gate	Flap Gate
River Side	To be repaired to seal for water tightness.	To be repaired to seal for water tightness.	To be repaired to seal for water tightness.	Gate leave was broken to be replaced.	To be repaired to seal for water tightness.	To be repaired to seal for water tightness.

Location	Items	Feet (ft)	Meter (m)
Land Side	Temporary coffer dam length	80	24
	Temporary coffer dam height	6	1.8
River Side	Temporary coffer dam length	120	36
River Side	Temporary coffer dam height	18	5.2

- About 1.2m in depth of overtopping was observed at the time of Nargis cyclone.
- Irrigation Department has executed emergency recovery embankment works around this area especially at water breaching dike portion.
- Constructed dike height at Paddy I was implemented with 3.05m in height.
- ECL (existing crest elevation) is 1.2m so 1.85m has been eroded by water and wind affects after thirty

years period of embankment of Paddy I project.

- A gate keeper, U Than Tun, has lost his mother and his 4 children at the time of Nargis cyclone.
- There is a drinking water pond with 30m by 30m at water surface area as of  $2^{nd}$  March 2009.
- Water of the said drinking water pond was pumped out once by using engine pump funded by villagers.
- Water quality is not so good comparing to before but it can be used for drinking.
- There is no donor organization in this area but "Save the children" came to opposite side within this polder and constructed drinking water pond, but impounding is not yet started because it is before rainy season.
- According to U Than Tun, 45 baskets was average yield per acre around this area before Nargis cyclone.
- After Nargis cyclone, average yield goes down to 15 baskets per acre.

### Kadauksat Sluice Gate



Kadauksat Sluice locates at North of Betud (3) polder.

- There is only 1 sluice gate system at this portion.
- After Paddy I project implementation, there was no sluice gate system at this portion.
- After the said implementation, Irrigation Department has prepared one sluice gate for summer paddy cultivation.
- The sluice gate has 4 feet and 4 feet square cross section of concrete barrel.
- The said sluice gate system is composed of 1 flap gate at downstream side and also 1 flap gate at upstream side by inspection with site engineer, the sluice condition is as follows.

Gate No.	1			
Land Side	Flap Gate			
	Damaged due to long time operation.			
River Side	Flap Gate			
River Side	Damaged due to long time operation.			

Location	Items	Feet (ft)	Meter (m)
Land Side	Temporary coffer dam length	55	17
	Temporary coffer dam height	9	2.74
River Side	Temporary coffer dam length	100	30
Kiver Side	Temporary coffer dam height	12	3.66

- Existing crest level is 1.22m, original height after dike completion by Paddy I project is 3.05m, and planned dike height after Nargis by Irrigation Department is 3.05m.
- Overtopping flood of 0.91m was observed by a gate keeper, U Myint Swe at the time of Nargis cyclone.
- According to U Myint Swe, yield of 80 baskets per acre was average around this area before Nargis cyclone.
- After Nargis cyclone, average yield goes down to about 40 baskets per acre
- This area is just downstream side of saline water intrusion boundary so recovery of paddy yield may be limited comparing with that in Pogwegyi sluice gate service area.
- Water in canal system can be used for not only domestic purpose but also drinking.

## **Bitud 4 Polder**

#### Pogwegyi Sluice Gate



Pogwegyi Sluice locates west of Betud (4) polder.

- Total sluice gate system number at this site is total four (4).
- No. 1 and No. 4 gates at upstream side are flap gates.
- Remaining No. 2 and No. 3 gates at upstream are slide gates.
  - Four (4) numbers of flap gates were installed at downstream side of this sluice gates system.

Gate No.	1 2		3	4
	Flap Gate	Slide Gate	Slide Gate	Flap Gate
Land Side	Leakage of water and need to repair alloy seal.	It may be good but to be checked.	It may be good but to be checked.	Leakage of water and need to repair alloy seal.
	Flap Gate	Flap Gate	Flap Gate	Flap Gate
River Side	Need to repair for water tightness.	Need to repair for water tightness.	Need to repair for water tightness.	Leakage of water and need to repair alloy seal.

Location	Items	Feet (ft)	Meter (m)
Land Side	Temporary coffer dam length	80	25
	Temporary coffer dam height	10	3.05
River Side	Temporary coffer dam length	150	45
Kiver Side	Temporary coffer dam height	13	3.96

- Existing crest level 1.22m, original height after dike completion by Paddy I project is 3.05m, and planned dike height after Nargis by Irrigation Department is 3.05m.
- Overtopping flood of 0.91m was observed by a gate keeper, U Kala at the time of Nargis cyclone.
- According to U Kala, yield of 70-80 baskets per acre was average around this area before Nargis cyclone.
- After Nargis cyclone, average yield goes down to about 60 baskets per acre.
- This area is upper side of saline water intrusion boundary so villagers can get fresh water easier than that of sea side area.
- Water in canal system can be used for not only domestic purpose but also drinking purpose.
- Some farmers can cultivate summer even after Nargis cyclone.
- After Nargis cyclone, WFP provided villagers rice and beans.

## Kakayan Sluice Gate



- Kakayan sluice locates in Bitut No. 4 polder and consists of five (5) openings.
- No. 1 and 5 at upstream side are flap gates, No. 2, 3,4 are slide gates.
- Shaft of those three (3) slide gates are bent but not due to Nargis cyclone, those shaft to be repaired.

Gate No.	1	2	3	4	5
	Flap Gate	Slide Gate	Slide Gate	Slide Gate	Flap Gate
Land Side	Seal to be repaired.	Shaft is bent and RC base to be repaired.	Shaft is bent and RC base to be repaired.	Shaft is bent and RC base to be repaired.	Seal to be repaired.
	Flap Gate				
River Side	Seal portion to be repaired due to leakage of water.	Seal portion to be repaired due to leakage of water.	Seal portion to be repaired due to leakage of water.	Seal portion to be repaired due to leakage of water.	Seal portion to be repaired due to leakage of water.

Location	Items	Feet (ft)	Meter (m)
Land Side	Temporary coffer dam length	100	30
Land Side	Temporary coffer dam height	6	1.8
River Side	Temporary coffer dam length	150	45
Kiver Side	Temporary coffer dam height	15	4.5

- Existing crest level around dike is 1.5m, 0.3 0.6m of flood water overtopping was observed during Nargis cyclone passing.
- Temporary cofferdam at downstream side will be 45m length with 4.5m high, upstream side will be 30m with 1.8m high.
- Monsoon paddy average yield before Nargis Cyclone was 80 basket per acre, but it declined to 60 baskets per acre after Nargis cyclone passing.
- At this present, summer paddy is cultivated.

# **Chaung Bwe Sluice Gate**



- Chaung Bye sluice locates in Bitut No. 4 polder and consists of four (4) openings.
- River side of the sluice faces always fresh water.
- Riverside (downstream side) has four (4) slide gates and land side has four (4) flap gates.

By inspection with site engineer the condition of the sluice is as follows;

Gate No.	1	2	3	4
	Flap Gate	Flap Gate	Flap Gate	Flap Gate
Land Side	Leakage of water and seal to be repaired.	Leakage of water and seal to be repaired.	Leakage of water and seal to be repaired.	Leakage of water and seal to be repaired.
	Slide Gate	Slide Gate	Slide Gate	Slide Gate
River Side	Seal should be repaired.	repaired. Hoisting assembly to be repaired. Seal sho		Seal should be repaired.

Location	Items	Feet (ft)	Meter (m)
Land Side	Temporary coffer dam length	65	20
	Temporary coffer dam height	8	2.5
River Side	Temporary coffer dam length	120	36
River Side	Temporary coffer dam height	15	4.5

- Existing crest level is EL. 1.5m and flood water overtopping was observed during Nargis cyclone passing about 0.3 0.6m.
- Average paddy yield per acre was 80 baskets, but after cyclone it became 60 baskets.

# Lake Kwin Embankment Lake Queen Sluice Gate



- This gate was newly designed by Irrigation Department in several years ago.
- There planned one (1) opening gate system only.
- During gate system construction, Nargis cyclone hit this gate system and gate under construction was broken.
- One sub-assistant engineer at this site passed away due to the said cyclone.
- Designed gate system is wooden flap gate so its function of water tightness is doubtful.
- Proper design with proper material is recommended.

# <u>Bogalay Township</u>

## Kyon Kaw Sluice Gate



- Kyon Kaw Sluice locates in Sat San Village, at north-west side of Daung Gyi Polder.
- Checked sluice gate condition together with staff of Irrigation Department is as follows.

Gate No.	1	2	3	4	5	6	7	8
	Stop Log	Stop Log	Slide Gate	Slide Gate	Slide Gate	Slide Gate	Stop Log	Stop Log
Land Side	Slide gate to be installed	Slide gate to be installed	Hoisting assembly shall be maintained	Hoisting assembly shall be maintained	Hoisting assembly shall be maintained	Hoisting assembly shall be maintained	Slide gate to be installed	Slide gate to be installed
	Flap Gate	Flap Gate	Flap Gate	Flap Gate	Flap Gate	Flap Gate	Flap Gate	Flap Gate
River Side	Good but to be checked	Good but to be checked	Good but to be checked	Good but to be checked	Good but to be checked	Good but to be checked	Good but to be checked	Good but to be checked

- For repairing works of gates, estimated temporary cofferdam size is estimated as follows.

Location	Items	Feet (ft)	Meter (m)
Land Side	Temporary coffer dam length	131	40
	Temporary coffer dam height	9	2.7
River Side	Temporary coffer dam length	148	45
	Temporary coffer dam height	15	4.6

In case of improvement of this sluice, recommended works are as follows.

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Location	Description of works	Length (ft)	Length (m)
Land Side	Left side bank of leading channel improvement	328	100
	Right side bank of leading channel improvement	984	300
River Side	Left side bank of outfall channel improvement	1,312	400
	Right side bank of outfall channel improvement	1,312	400

 For dike improvement, Public Work Department is now constructing the highway at the west side of Daung Gyi Polder with 7.3m (24ft) width and 3.8m (12.5ft) of crest elevation so Irrigation Department is not necessary to construct dike at this portion.