ANNEX-E

Agronomy/Farm Management

ANNEX E

Agronomy and Farm Managment

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Table 1 Summary of Soil Profile in the Study Areas

BOLIKHAMXAY Province

Inundated area (flood affected area)

Soil Profile No.	:	BI. 01.
Location	:	Lat: 18° 24' 21"N; Long: 103° 15' 59"E.
Elevation	:	156m. above sea level.
Existing soil profile No.	:	P. 087
Soil Classification (FAO/UNESCO)	:	Haplic LUVISOLS (LVh).
Geology/parent materials	:	Alluvial deposits/Siltstone and Claystone.
Physiography	:	Flat or almost flat plain with 0-2% slope.
Drainage	:	Well drained.
Vegetation and/or Land Use	:	Paddy rice.
Saline-sodic soil	:	None.
Soil fertility	:	N-P-K fertilizer applied.
Average crop yield	:	3.5-4.0T/ha.
Soil erosion	:	None.

Soil sample No. BI. 01 (0-19cm); BI. 01 (19-40cm); BI. 01 (40-79cm)

Profile Description:

0-19 cm: Ap — Gradual smooth boundary; yellowish brown (10YR 5/4 moist) Loam; structureless; slightly sticky and slightly plastic when wet; Friable when moist, slightly hard when dry; few micro interstital pores; very few, very fine roots; pH H_2O = 5.0 no effervescent.

19-40 cm: Bt1 — Gradual smooth boundary; dark brown (7.5YR 3/4 moist) Loam; moderate medium subangular blocky, slightly sticky and Plastic when wet; firm when moist, hard when dry; few micro Interstital pores; very few, very fine roots; pH H_2O = 5.0; no effervescent.

40-79 cm: Bt2 — Diffuse smooth boundary; dark brownish (7.5YR 6/8 moist), Clay Loam; weak fine subangular blocky; sticky and plastic when wet; firm when moist, hard when dry; few with micro, interstitial pores; none roots; pH H_2O = 5.0; no effervescent.

79-125 cm: Bt2 — Diffuse smooth boundary; strong brown (5YR 4/6 moist) Clay loam; weak fine subangular blocky; slightly sticky and slightly plastic when wet; firm when moist, hard when dry; few with micro, interstitial pores; none roots; pH H_2O = 4.0 no effervescent.

BOLIKHAMXAY Province

Inundated area (flood affected area)

Soil Profile No.	:	BI. 02.
Location	:	Lat: 18° 27' 02"N; Long: 103° 30' 05"E.
Elevation	:	150m. above sea level.
Existing soil profile No.	:	P. 441
Soil Classification (FAO/UNESCO)	:	Ferric ACRISOLS (ALh).
Geology/parent materials	:	Alluvial deposits/Siltstone and Claystone.
Physiography	:	Flat or almost flat plain with 0-2% slope.
Drainage	:	Well drained.
Vegetation and/or Land Use	:	Paddy rice.
Saline-sodic soil	:	None.
Soil fertility	:	N-P-K fertilizer applied.
Average crop yield	:	3.5-4.0T/ha.
Soil erosion	:	None.

Soil sample No. BI. 02 (0-16cm); BI. 02 (16-37cm); BI. 02 (37-60cm)

Profile Description:

0-16 cm: Ap — Clear smooth boundary; very pale brown (10YR 7/3 moist) Loam; structureless; slightly sticky and slightly plastic when wet; friable when moist; slightly hard when dry; few micro interstital pores; very few, very fine roots; pH H_2O = 5.2 no effervescent.

16-37 cm: Bts1 — Clear smooth boundary; yellowish brown (10YR 5/6 moist); common with yellowish red fine faint mottles; Loam; moderate fine subangular blocky, sticky and plastic when wet; friable when moist, hard when dry; few micro interstital pores; very few, very fine roots; pH H_2O = 5.0 no effervescent.

37-60 cm: Bts2 — Clear smooth boundary; strong brown (7.5YR 5/6 moist), many with yellowish red medium faint mottles; Clay Loam; weak fine subangular blocky; sticky and plastic when wet; friable when moist, hard when dry; few with micro, interstitial pores; none roots; pH H_2O = 4.8 no effervescent.

60-125 cm: Bts3 — Clear smooth boundary; red (2.5YR 5/6 moist), many with red coarse prominent mottles; Clay Loam; weak midium subangular blocky; sticky and plastic when wet; friable when moist, hard when dry; few with micro, interstitial pores; none roots; pH H_2O = 5.0 no effervescent.

BOLIKHAMXAY Province

Inundated area (flood affected area)

Soil Profile No.	:	BI. 03.
Location	:	Lat: 18° 23' 42"N; Long: 103° 41' 31"E.
Elevation	:	150m. above sea level.
Existing soil profile No.	:	PS.23
Soil Classification (FAO/UNESCO)	:	Ferric ACRISOLS (ACf).
Geology/parent materials	:	Alluvial deposits/Siltstone and Claystone.
Physiography	:	Flat or almost flat plain with 0-2% slope.
Drainage	:	Well drained.
Vegetation and/or Land Use	:	Paddy rice.
Saline-sodic soil	:	None.
Soil fertility	:	N-P-K fertilizer applied.
Average crop yield	:	2-2.5 ton/ha.
Soil erosion	:	None.

Soil sample No. BI. 03 (0-14cm); BI. 03 (14-32cm); BI. 03 (32-61cm)

Profile Description:

0-14 cm: Ap
Diffuse smooth boundary; olive brown (2.5YR 4/4 moist)
Loam; structureless; slightly sticky and slightly plastic when wet; friable when moist, slightly hard when dry; few micro interstital pores; very fine roots; pH H_2O = 5.5 no effervescent.

14-32 cm: AB
Diffuse smooth boundary; olive brown (2.5YR 4/4 moist)
Clay Loam; weak fine subangular blocky, sticky and slightly plastic when wet; firm when moist, slightly hard when dry; few micro interstital pores; very few, very fine roots; pH H_2O = 5.0 no effervescent.

32-61 cm: Bts1
Clear smooth boundary; pale yellow (2.5YR 7/4 moist)
few with reddish yellow fine faint mottles; Clay Loam; weak fine subangular blocky; sticky and plastic when wet; firm when moist, hard when dry; few with micro, interstitial pores; none roots; pH H_2O = 5.0 no effervescent.

61-125 cm: Bts2
Clear smooth boundary; light reddish brown (2.5YR 6/4 moist)
common with yellowish red medium distinct mottles; Clay Loam; weak fine subangular blocky; sticky and plastic when wet; firm when moist, hard when dry; few with micro. Interstitial pores; none roots; pH H_2O = 4.5 no effervescent.

BOLIKHAMXAY Province

Inundated area (flood affected area)

Soil Profile No.	:	BI. 04.
Location	:	Lat: 18° 04' 54"N; Long: 104° 18' 20"E.
Elevation	:	140m. above sea level.
Existing soil profile No.	:	P. 425
Soil Classification (FAO/UNESCO)	:	Gleyic ALISOLS (ALg)
Geology/parent materials	:	Alluvial deposits/Siltstone and Claystone.
Physiography	:	Flat or almost flat valley bottom 0-2% slope.
Drainage	:	Moderate well drained.
Vegetation and/or Land Use	:	Paddy rice.
Saline-sodic soil	:	None.
Soil fertility	:	N-P-K fertilizer applied.
Average crop yield	:	2.5 – 3.0 T/ha.
Soil erosion	:	None.

Soil sample No. BI. 04 (0-17cm); BI. 04 (17-36cm); BI. 04 (36-75cm)

Profile Description:

0-17 cm: Ap
Gradual smooth boundary; light browish gray (10YR 6/2 moist)
Loam; structureless; slightly sticky and slightly plastic when wet; friable when moist, slightly hard when dry; few micro interstitial pores; very few, very fine roots; pH H_2O = 5.5 no effervescent.

17-36 cm: Bts
Gradual smooth boundary; pale brown (10YR 6/3 moist)
few with reddish yellow medium faint mottles; Loam; moderate medium subangular blocky, slightly sticky and alightly plastic when wet; firm when moist, hard when dry; few micro interstital pores; very few, very fine roots; pH H_2O = 4.5 no effervescent.

36-75 cm: Btg1
Gradual smooth boundary; grayish brown (10YR 5/2 moist)
few with reddish yellow fine faint mottles; Loam; moderate fine subangular blocky; sticky and plastic when wet; firm when moist, hard when dry; few with micro, interstitial pores; none roots; pH H_2O = 4.5 no effervescent.

75-125 cm: Btg2
Gradual smooth boundary; yellowish brown (10YR 5/3 moist)
few with reddish yellow fine faint mottles; Clay Loam; weak fine subangular blocky; sticky and plastic when wet; firm when moist, hard when dry; few with micro, interstitial pores; none roots; pH H_2O = 5.0 no effervescent.

BOLIKHAMXAY Province

Un-Inundated area (non flood affected area)

Soil Profile No.	:	BU. 01.
Location	:	Lat: 18° 35' 53"N; Long: 103° 42' 18"E.
Elevation	:	160m. above sea level.
Existing soil profile No.	:	P. 798
Soil Classification (FAO/UNESCO)	:	Haplic ALISOLS (ALh)
Geology/parent materials	:	Alluvial deposits/Sandstone and Siltstone.
Physiography	:	Flat or almost flat valley bottom with 0-2% slope.
Drainage	:	Moderate well drained.
Vegetation and/or Land Use	:	Paddy rice.
Saline-sodic soil	:	None.
Soil fertility	:	N-P-K fertilizer applied.
Average crop yield	:	1.0 – 1.3 T/ha.
Soil erosion	:	None.

Soil sample No. BU. 01 (0-19cm); BU. 01 (19-43cm); BU. 01 (43-84cm)

Profile Description:

0-19 cm: Ap	Diffuse smooth boundary; dark brown (10YR 3/3 moist) Clay Loam; structureless; non sticky and non plastic when wet; loose when moist, soft when dry; few micro interstitial pores; very few, very fine roots; pH H_2O = 4.5 no effervescent.
19-43 cm: AB	Diffuse smooth boundary; dark brown (10YR 4/3 moist) Sandy Loam; weak fine subangular blocky, non sticky and non slightly plastic when wet; very friable when moist, slightly soft when dry; few micro interstitial pores; very few, very fine roots; pH H_2O = 4.5 no effervescent.
43 -84 cm: Bt	Gradual smooth boundary; yellow (10YR 5/3 moist) Sandy Loam; weak very fine subangular blocky; slightly sticky and slightly plastic when wet; very friable when moist, soft when dry; few with micro, interstitial pores; none roots; pH H_2O = 4.8 no effervescent.
84-125 cm: Bs	Clear smooth boundary; very pale brown (10YR 7/3 moist) fine sand; non sticky and non plastic when wet, loose when moist and soft when dry; few with micro, interstitial pores; none roots; pH H_2O = 4.0 no effervescent.

BOLIKHAMXAY Province

Un-Inundated area (none flood affected area)

Soil Profile No.	:	BU. 02.
Location	:	Lat: 18° 25' 40"N; Long: 103° 46' 10"E.
Elevation	:	160m. above sea level.
Existing soil profile No.	:	PS.11
Soil Classification (FAO/UNESCO)	:	Ferric ACRISOLS (ACf)
Geology/parent materials	:	Alluvial deposits/Siltstone and Claystone.
Physiography	:	Flat or almost flat plain with 0-2% slope.
Drainage	:	Well drained.
Vegetation and/or Land Use	:	Paddy rice.
Saline-sodic soil	:	None.
Soil fertility	:	N-P-K fertilizer applied.
Average crop yield	:	3.0 – 3.5 ton/ha.
Soil erosion	:	None.

Soil sample No. BU. 02 (0-13cm); BU. 02 (13-48cm); BU. 02 (48-55cm)

Profile Description:

0-13 cm: Ap	Clear smooth boundary; very pale brown (10YR 7/4 moist) Loam; structureless; slightly sticky and slightly plastic when wet; friable when mopist, hard when dry; few micro interstitial pores; very few, very fine roots; pH H_2O = 4.6 no effervescent.
13-48 cm: Btc1	Clear smooth boundary; dark grayish brown (10YR 4/2 moist) few with yellow fine, faint mottles; Clay Loam; moderate medium subangular blocky, sticky and plastic when wet; very firm when moist, very hard when dry; few micro interstitial pores; very few, very fine roots; pH H_2O = 4.5 no effervescent.
48 -55 cm: Bts2	Abrupt smooth boundary; yellowish brown (10YR 5/4 moist) Heavy Clay; moderate fine subangular blocky; sticky and plastic when wet; very firm when moist, very hard when dry; few with micro, interstitial pores; none roots; pH H_2O = 4.5 no effervescent.
>55 cm:	Gravelly and

BOLIKHAMXAY Province

Un-Inundated area (non flood affected area)

Soil Profile No.	:	BU. 03.
Location	:	Lat: 18° 19' 00"N; Long: 103° 51' 52"E.
Elevation	:	140-150 m. above sea level.
Existing soil profile No.	:	P.076
Soil Classification (FAO/UNESCO)	:	Dystric CAMBISOLS (CMd)
Geology/parent materials	:	Alluvial deposits/Siltstone and Claystone.
Physiography	:	Flat or almost flat plain with 0-2% slope.
Drainage	:	Some what excessively drained.
Vegetation and/or Land Use	:	Paddy rice.
Saline-sodic soil	:	None.
Soil fertility	:	N-P-K fertilizer applied.
Average crop yield	:	3.0 – 3.5 ton/ha.
Soil erosion	:	None.

Soil sample No. BU. 03 (0-15cm); BU. 03 (15-38cm); BU. 03 (38-76cm)

Profile Description:

0-15 cm: Ap
Clear smooth boundary; light gray (10YR 7/2 moist)
Loam; structureless; slightly sticky and slightly plastic when wet; friable when moist. hard when dry; few micro interstitial pores; very few, very fine roots; pH H_2O = 4.7 no effervescent.

15-38 cm: Bws1
Gradual smooth boundary; grayish brown (10YR 5/2 moist)
Clay Loam; moderate medium subangular blocky, sticky and plastic when wet; firm when moist, very hard when dry; few micro interstitial pores; very few, very fine roots; pH H_2O = 4.8 no effervescent.

38 -76 cm: Bws2
Gradual smooth boundary; brownish yellow (10YR 6/6 moist)
few with brownish yellow fine faint mottles; Clay Loam; moderate fine subangular blocky; sticky and plastic when wet; firm when moist, very hard when dry; few with micro, interstitial pores; none roots; pH H_2O = 4.5 no effervescent.

76-120 cm: Bwc
Gradual smooth boundary; brown (7.5YR 5/4 moist)
Heavy Clay moderate fine subangular blocky; very sticky and very plastic when wet; very firm when moist, very hard when dry; few with micro, interstitial pores; none roots; pH H_2O = 4.5 no effervescent.

KHAMMOUANE Province

Inundated area (flood affected area)

Soil Profile No.	:	KI. 01.
Location	:	Lat: 17° 33' 20"N; Long: 104° 41' 10"E.
Elevation	:	160m. above sea level.
Existing soil profile No.	:	P. 062
Soil Classification (FAO/UNESCO)	:	Ferric LUVISOLS (LVf)
Geology/parent materials	:	Alluvial deposits/Sandstone and Siltstone.
Physiography	:	Flat or almost flat plain with 0-2% slope.
Drainage	:	Somewhat excessively drained.
Vegetation and/or Land Use	:	Paddy rice.
Saline-sodic soil	:	None.
Soil fertility	:	N-P-K fertilizer applied.
Average crop yield	:	1.3 – 1.5 ton/ha.
Soil erosion	:	None.

Soil sample No. KI. 01 (0-18cm); KI. 01 (18-40cm); KI. 01 (40-68cm)

Profile Description:

0-18 cm: Ap
Clear smooth boundary; light gray (10YR 7/2 moist)
Loamy sand; structureless; non sticky and non plastic when wet; loose when moist, soft when dry; very few very fine interstitial pores; very few very fine roots; pH H_2O = 4.5 no effervescent.

18-40 cm: Bts1
Gradual smooth boundary; light brownish gray (10YR 6/2 moist)
few with browish yellow fine faint diffuse mottles, Sandy Loam; weak very fine subangular blocky; non sticky and non plastic when wet; very friable when moist, soft when dry; non roots; pH H_2O = 4.5 no effervescent.

40-68 cm: Bts2
Gradual smooth boundary; brownish yellow (10YR 6/8 moist)
common with brownish yellow fine faint diffuse mottles, Sandy Loam; weak very fine subangular blocky; non sticky and non plastic when wet; very friable when moist, slightly hard when dry; none roots; pH H_2O = 4.5-4.8 no effervescent.

68-125 cm: Bts3
Gradual, smooth boundary; light yellowish brown (10YR 6/4 moist)
many with red medium distinct mottles, Loam; weak fine subangular blocky; slightly sticky and slightly plastic when wet; friable when moist, slightly hard when dry; none roots; pH H_2O = 4.5 no effervescent.

KHAMMOUANE Province

Inundated area (flood affected area)

Soil Profile No.	:	KI. 02.
Location	:	Lat: 17° 25' 45"N; Long: 104° 51' 15"E.
Elevation	:	158m. above sea level.
Existing soil profile No.	:	P. 009
Soil Classification (FAO/UNESCO)	:	Ferric ACRISOLS (ACf)
Geology/parent materials	:	Alluvial deposits/Sandstone and Claystone.
Physiography	:	Flat or almost flat valley bottom with 0-2% slope.
Drainage	:	Moderately drained.
Vegetation and/or Land Use	:	Paddy rice.
Saline-sodic soil	:	None.
Soil fertility	:	N-P-K fertilizer applied.
Average crop yield	:	2.5 – 3.0 ton/ha.
Soil erosion	:	None.

Soil sample No. KI. 02 (0-15cm); KI. 02 (15-37cm); KI. 02 (37-70cm)

Profile Description:

0-15 cm: Ap — Clear smooth boundary; light gray (10YR 7/2 moist) Loamy sand; structureless; slightly sticky and slightly plastic when wet; friable when moist, slightly hard when dry; few micro interstitial pores; very few very fine roots; pH H_2O = 4.5 no effervescent.

15-37 cm: Bts1 — Clear smooth boundary; pale brown (10YR 6/3 moist) common with yellowish red fine faint mottles, Loam; weak fine subangular blocky; slightly sticky and plastic when wet; firm when moist, slightly hard when dry; few micro interstitial pores none roots; pH H_2O = 4.5 no effervescent.

37-70 cm: Bts2 — Gradual smooth boundary; light brownish gray (10YR 6/2 moist) common with red fine faint mottles, Clay Loam; weak very fine subangular blocky; slightly sticky and plastic when wet; firm when moist, hard when dry; few with micro, interstitial pores, none roots; pH H_2O = 4.3 no effervescent.

70-125 cm: Bts3 — Gradual, smooth boundary; pale brown (10YR 6/3 moist) many with red medium prominent mottles, Clay Loam; weak fine subangular blocky; slightly sticky and plastic when wet; firm when moist, hard when dry; with micro, interstitial pores; none roots; pH H_2O = 4.0 no effervescent.

KHAMMOUANE Province

Inundated area (flood affected area)

Soil Profile No.	:	KI. 03.
Location	:	Lat: 17° 16' 31"N; Long: 104° 57' 50"E.
Elevation	:	147m. above sea level.
Existing soil profile No.	:	P. 048
Soil Classification (FAO/UNESCO)	:	Gleyic SOLONETZ (SNg).
Geology/parent materials	:	Alluvial deposits/Sandstone and Siltstone.
Physiography	:	Flat or almost flat plain with 0-2% slope.
Drainage	:	MOderately drained.
Vegetation and/or Land Use	:	Paddy rice.
Saline-sodic soil	:	None.
Soil fertility	:	N-P-K fertilizer applied.
Average crop yield	:	2.0-2.5ton/ha.
Soil erosion	:	None.

Soil sample No. KI. 03 (0-17cm); KI. 03 (17-34cm); KI. 03 (34-63cm)

Profile Description:

0-17 cm: Ap — Gradual smooth boundary; grayish brown (10YR 5/2 moist) Fine Sand; structureless; non sticky and non plastic when wet; very friable when moist, soft when dry; few micro interstitial pores; very few very fine roots; pH H_2O = 5.0 no effervescent.

17-34 cm: AB — Gradual smooth boundary; light brownish gray (10YR 6/2 moist) Loamy Sand; weak very fine subangular blocky; non sticky and non plastic when wet; very friable when moist, soft when dry; few micro interstitial pores; very few, very fine roots; pH H_2O = 5.5; no effervescent.

34-63 cm: Btn — Gradual smooth boundary; broun (10YR 5/3 moist) few with reddish yellow medium faint mottles, Sandy Loam; weak very fine subangular blocky; non sticky and non plastic when wet; very friable when moist, soft when dry; few with micro, interstitial pores, none roots; pH H_2O = 6.0; no effervescent.

63-125 cm: Btng — Gradual, smooth boundary; yellowish brown (10YR 5/4 moist) common with red medium faint mottles, Clay Loam; weak fine subangular blocky; non sticky and non plastic when wet; very friable when moist, soft hard when dry; non roots; pH H_2O = 6.5 no effervescent.

KHAMMOUANE Province

Inundated area (flood affected area)

Soil Profile No.	:	KI. 04.
Location	:	Lat: 17° 06' 10"N; Long: 104° 52' 05"E.
Elevation	:	147m. above sea level.
Existing soil profile No.	:	P. 021
Soil Classification (FAO/UNESCO)	:	Ferric ACRISOLS (ACf).
Geology/parent materials	:	Alluvial deposits/Sandstone and Siltstone.
Physiography	:	Flat or almost flat plain with 0-2% slope.
Drainage	:	Well drained.
Vegetation and/or Land Use	:	Paddy rice.
Saline-sodic soil	:	None.
Soil fertility	:	N-P-K fertilizer applied.
Average crop yield	:	2.5-3.0ton/ha.
Soil erosion	:	None.

Soil sample No. KI. 04 (0-12cm); KI. 04 (12-36cm); KI. 04 (36-60cm)

Profile Description:

0-12 cm: Ap — Diffuse smooth boundary; very pale brown (10YR 7/3 moist) Sandy Loam; structureless; non sticky and non plastic when wet; very friable when moist, soft when dry; very few micro interstitial pores; ver few very fine roots; pH H_2O = 4.7 no effervescent.

12-36 cm: Bts — Diffuse smooth boundary; pale brown (10YR 6/3 moist); Loam; medium subangular blocky; slightly sticky and slightly plastic when wet; very friable when moist, soft when dry; non roots; pH H_2O = 4.5 no effervescent.

37-60 cm: Btc — Gradual smooth boundary; brownish yellow (10YR 6/6 moist), many with yellowish red medium distinct mottles; Clay Loam; strong medium angular blocky; sticky and plastic when wet; firm when moist, very hard when dry; none roots; pH H_2O = 4.5 no effervescent.

60-125 cm: Bts — Clear, smooth boundary; yellowish red (5YR 5/6 moist), Heavy Clay; strong coarse subangular blocky; sticky and plastic when wet; firm when moist, very hard when dry; none roots; pH H_2O = 4.3 no effervescent.

KHAMMOUANE Province

Un-Inundated area (flood affected area); but in fact was inundated area after hydropower electricity Nam Theum II Construction in 1997

Soil Profile No.	:	KU. 01.
Location	:	Lat: 17° 52' 13"N; Long: 104° 29' 50"E.
Elevation	:	160m. above sea level.
Existing soil profile No.	:	None
Soil Classification (FAO/UNESCO)	:	Haplic ACRISOLS (ACh).
Geology/parent materials	:	Alluvial deposits/Siltstone and Claystone.
Physiography	:	Flat or almost flat plain with 0-2% slope.
Drainage	:	Well drained.
Vegetation and/or Land Use	:	Paddy rice.
Saline-sodic soil	:	None.
Soil fertility	:	N-P-K fertilizer applied.
Average crop yield	:	3.0-3.5 ton/ha.
Soil erosion	:	None.

Soil sample No. KU. 01 (0-15cm); KU. 01 (15-31cm); KU. 01 (31-60cm)

Profile Description:

0-15 cm: Ap — Gradual smooth boundary; pale brown (10YR 6/3 moist) Loam; structureless; slightly sticky and slightly plastic when wet; friable when moist, slightly hard when dry; very few very fine interstitial pores; very few very fine roots; pH H_2O = 5.5 no effervescent.

15-31 cm: AB — Gradual smooth boundary; yellowish brown (10YR 5/4 moist) Loam; weak very fine subangular blocky; slightly sticky and plastic when wet; firm when moist, slightly when dry; very few, very fine roots; pH H_2O = 5.5 no effervescent.

31-60 cm: Bt1 — Gradual smooth boundary; dark yellowish brown (210YR 4/4 moist) Clay Loam; moderate fine subangular blocky; sticky and plastic when wet; firm when moist, hard when dry; none roots; pH H_2O = 5.8 no effervescent.

60-125 cm: Bt2 — Gradual, smooth boundary; dark yellowish brown (10YR 4/4 moist) Clay Loam; moderate fine subangular blocky; sticky and plastic when wet; firm when moist, hard when dry; non roots; pH H_2O = 6.0 no effervescent.

KHAMMOUANE Province

Un-Inundated area (non flood affected area)

Soil Profile No.	:	KU. 02.
Location	:	Lat: 17° 21' 30"N; Long: 104° 52' 30"E.
Elevation	:	147m. above sea level.
Existing soil profile No.	:	None
Soil Classification (FAO/UNESCO)	:	Ferric ALISOLS (ALf).
Geology/parent materials	:	Alluvial deposits/Sandstone and Siltstone.
Physiography	:	Flat or almost flat terrace with 0-2% slope.
Drainage	:	Somewhat excessively drained.
Vegetation and/or Land Use	:	Paddy rice.
Saline-sodic soil	:	None.
Soil fertility	:	N-P-K fertilizer applied.
Average crop yield	:	2.0 – 2.5 ton/ha.
Soil erosion	:	None.

Soil sample No. KU. 02 (0-13cm); KU. 02 (13-32cm); KU. 02 (32-59cm)

Profile Description:

0-13 cm: Ap	Gradual smooth boundary; light gray (10YR 7/2 moist) Loamy sand; structureless; non sticky and non plastic when wet; very friable when moist, soft when dry; very few very fine interstitial pores; very few very fine roots; pH H_2O = 4.5 no effervescent.
13-32 cm: Bts1	Gradual smooth boundary; very pale brown (10YR 7/3 moist) few with brownish yellow fine faint mottles, Sandy Loam; weak very fine subangular blocky; non sticky and non plastic when wet; very friable when moist, soft when dry; non roots; pH H_2O = 4.5 no effervescent.
32-59 cm: Bts2	Gradual smooth boundary; light yellowish brown (10YR 6/4 moist) few with yellowish red fine faint mottles, Loam; weak very fine subangular blocky; non sticky and non plastic when wet; friable when moist, slightly hard when dry; none roots; pH H_2O = 4.0-4.3 no effervescent.
59-84 cm: Bts3	Gradual, smooth boundary; grayish brown (10YR 5/2 moist) few with yellowish brown fine faint mottles, Loam; weak fine subangular blocky; non sticky and nonplastic when wet; friable when moist, slightly hard when dry; none roots; pH H_2O = 4.0 no effervescent.
84-125 cm: Btc	Clear smooth boundary, light brownish gray (10YR 6/2 moist) common with yellowish brown medium faint mottles, Clay Loam; gravelly 5-10%; moderate medium subangular blocky, slightly sticky and slightly plastic when wet, firm when moist, hard when dry, none roots; pH H_2O = 4.0 no effervescent.

KHAMMOUANE Province

Un-Inundated area (non flood affected area)

Soil Profile No.	:	KU. 03.
Location	:	Lat: 17° 07' 30"N; Long: 104° 48' 10"E.
Elevation	:	140m. above sea level.
Existing soil profile No.	:	P. 045
Soil Classification (FAO/UNESCO)	:	Dystric CAMBISOLS (CMd)
Geology/parent materials	:	Alluvial deposits/Siltstone and Claystone.
Physiography	:	Flat or almost flat plain with 0-2% slope.
Drainage	:	Well drained.
Vegetation and/or Land Use	:	Paddy rice.
Saline-sodic soil	:	None.
Soil fertility	:	N-P-K fertilizer applied.
Average crop yield	:	3.0 – 3.5 ton/ha.
Soil erosion	:	None.

Soil sample No. KU. 03 (0-10cm); KU. 03 (10-34cm); KU. 03 (34-70cm)

Profile Description:

0-10 cm: Ap	Clear smooth boundary; very pale brown (10YR 7/3 moist) Loam; structureless; slightly sticky and slightly plastic when wet; friable when moist, soft when dry; few micro interstitial pores; very few very fine roots; pH H_2O = 4.2-4.5 no effervescent.
10-34 cm: Bws1	Gradual smooth boundary; brown (10YR 4/3 moist) few with reddish yellow fine faint mottles, Clay Loam; moderate fine subangular blocky; slightly sticky and slightly plastic when wet; firm when moist, hard when dry; non roots; pH H_2O = 4.5 no effervescent.
34-70 cm: Bws2	Gradual smooth boundary; dark grayish brown (10YR 4/2 moist) few with red fine faint mottles, Clay Loam; moderate medium subangular blocky; sticky and plastic when wet; firm when moist, slightly hard when dry; none roots; pH H_2O = 4.5 no effervescent.
70-125 cm: Bt	Gradual, smooth boundary; dark grayish brown (10YR 4/2 moist) few with brownish yellow fine faint mottles, Heavy Clay; moderate medium subangular blocky; sticky and plastic when wet; firm when moist, slightly hard when dry; none roots; pH H_2O = 4.5-5.0 no effervescent.

SAVANNAKHET Province

Inundated area (flood affected area)

Soil Profile No.	:	SI. 01.
Location	:	Lat: 16° 58' 30"N; Long: 104° 51' 15"E.
Elevation	:	140m. above sea level.
Existing soil profile No.	:	P.510
Soil Classification (FAO/UNESCO)	:	Dystric CAMBISOLS (ÇMd)
Geology/parent materials	:	Alluvial deposits/Sandstone and Siltstone.
Physiography	:	Flat or almost flat plain with 0-2% slope.
Drainage	:	Moderate well drained.
Vegetation and/or Land Use	:	Paddy rice.
Saline-sodic soil	:	None.
Soil fertility	:	N-P-K fertilizer applied.
Average crop yield	:	2.5 – 3.0 ton/ha.
Soil erosion	:	None.

Soil sample No. SI. 01 (0-11cm); SI. 01 (11-39cm); SI. 01 (39-70cm)

Profile Description:

0-11 cm: Ap	Clear smooth boundary; very pale brown (10YR 7/3 moist) Sandy Loam; structureless; non sticky and non plastic when wet; very friable when moist, slightly hard when dry; few micro interstitial pores; very few, very fine roots; pH H_2O = 4.8 no effervescent.
11-39 cm: Bws1	Gradual smooth boundary; very pale brown (10YR 7/4 moist) few with reddish yellow medium distinct mottles; Loam; moderate medium subangula blocky, slightly sticky and slightly plastic when wet; firm when moist, hard when dry; few microinterstitial pores; very few, very fine roots; pH H_2O = 4.5 no effervescent.
39 -70 cm: Bws2	Diffuse smooth boundary; light yellowishbrown (10YR 6/4 moist) common yellowish red medium distinct mottles; Loam; moderate medium subangular blocky; sticky and plastic when wet; firm when moist, hard when dry; few with micro, interstitial pores; none roots; pH H_2O = 5.0 no effervescent.
70 -125 cm: Bws3	Diffuse smooth boundary; brownish yellow (10YR 6/6 moist) many with yellowish red medium faint mottles; Clay Loam; weak fine subangular blocky; sticky and plastic when wet; firm when moist, hard when dry; few with micro, interstitial pores; none roots; pH H_2O = 4.5 no effervescent.

SAVANNAKHET Province

Inundated area (flood affected area)

Soil Profile No.	:	SI. 02.
Location	:	Lat: 16° 15' 35"N; Long: 105° 18' 31"E.
Elevation	:	130 m. above sea level.
Existing soil profile No.	:	P.135
Soil Classification (FAO/UNESCO)	:	Hapric ALISOLS (ALh)
Geology/parent materials	:	Alluvial deposits/Siltstone and Claystone.
Physiography	:	Flat or almost flat plain with 0-2% slope.
Drainage	:	Well drained.
Vegetation and/or Land Use	:	Paddy rice.
Saline-sodic soil	:	None.
Soil fertility	:	N-P-K fertilizer applied.
Average crop yield	:	3.0 – 3.5 ton/ha.
Soil erosion	:	None.

Soil sample No. SI. 02 (0-14cm); SI. 02 (14-26cm); SI. 02 (26-50cm)

Profile Description:

0-14 cm: Ap	Clear smooth boundary; pale brown (10YR 6/3 moist) Loam; structureless; slightly sticky and slightly plastic when wet; friable when moist, hard when dry; few micro interstitial pores; very few, very fine roots; pH H_2O = 5.5 no effervescent.
14-26 cm: Bt1	Clear smooth boundary; yellowish brown (10YR 4/4 moist) Loam; moderate medium subangular blocky, slightly sticky and slightly plastic when wet; firm when moist, hard when dry; few micro interstitial pores; very few, very fine roots; pH H_2O = 5.5 no effervescent.
26 -50 cm: Bt2	Gradual smooth boundary; yellowish brown (10YR 5/4 moist) Loam; weak fine subangular blocky; sticky and plastic when wet; firm when moist, slightly hard when dry; few with micro, interstitial pores; none roots; pH H_2O = 5.5 no effervescent.
50-83 cm: Bt3	Diffuse smooth boundary; yellowish brown (10YR 5/4 moist) Clay Loam; weak fine subangular blocky; sticky and plastic when wet; firm when moist, slightly hard when dry; few with micro, interstitial pores; none roots; pH H_2O = 5.0 no effervescent.
83-125 cm: Bt3	Diffuse smooth boundary; dark yellowish brown (10YR 3/4 moist) Clay Loam; weak fine subangular blocky; sticky and plastic when wet; firm when moist, hard when dry; few with micro, interstitial pores; none roots; pH H_2O = 5.0 no effervescent.

SAVANNAKHET Province

Inundated area (flood affected area)

Soil Profile No.	:	SU. 01.
Location	:	Lat: 16° 34' 30"N; Long: 105° 51' 50"E.
Elevation	:	144m. above sea level.
Existing soil profile No.	:	None
Soil Classification (FAO/UNESCO)	:	Gleyic SOLONETS (SNg)
Geology/parent materials	:	Alluvial deposits/Sandstone and Siltstone.
Physiography	:	Flat or almost flat plain with 0-2% slope.
Drainage	:	Well drained.
Vegetation and/or Land Use	:	Paddy rice.
Saline-sodic soil	:	None.
Soil fertility	:	N-P-K fertilizer applied.
Average crop yield	:	2.0 – 2.5 ton/ha.
Soil erosion	:	None.

Soil sample No. SU. 01 (0-16cm); SU. 01 (16-37cm); SU. 01 (37-75m)

Profile Description:

0-16 cm: Ap — Clear smooth boundary; brown (10YR 5/3 moist) fine sand; structureless; non sticky and non plastic when wet; loose when moist, loose when dry; few micro interstitial pores; very few, very fine roots; pH H_2O = 4.5 no effervescent.

16-37 cm: AB — Clear smooth boundary; yellow (10YR 7/8 moist) fine sand; structureless non sticky and non plastic when wet; loose when moist, and when dry; few micro interstitial pores; very few, very fine roots; pH H_2O = 5.0 no effervescent.

37-75 cm: Bt — Clear smooth boundary; very pale brown (10YR 7/3 moist) fine sand; structureless non sticky and non plastic when wet; loose when moist, and when dry; few with micro, interstitial pores; none roots; pH H_2O = 6.0 no effervescent.

77-100 cm: Bn1 — Clear smooth boundary; brown (10YR 5/3 moist) Loamy Sand; structureless non sticky and non plastic when wet; loose when moist, and when dry; very friable when wet; soft when dry; few with micro, interstitial pores; none roots; pH H_2O = 6.5-7.0 no effervescent.

100-125 cm: Bn2 — Clear smooth boundary; gray (10YR 5/1 moist) Loamy Sand; structureless non sticky and non plastic when wet; loose when moist, and when dry; very friable when wet; soft when dry; few with micro, interstitial pores; none roots; pH H_2O = 7.0-7.5 no effervescent.

SAVANNAKHET Province

Un-Inundated area (non flood affected area)

Soil Profile No.	:	SU. 02.
Location	:	Lat: 16° 22' 48"N; Long: 105° 00' 30"E.
Elevation	:	150-160m. above sea level.
Existing soil profile No.	:	P. 1616
Soil Classification (FAO/UNESCO)	:	Dystric CAMBISOLS (CMd)
Geology/parent materials	:	Alluvial deposits/Sandstone and Siltstone.
Physiography	:	Flat or almost flat plain with 0-2% slope.
Drainage	:	Well drained.
Vegetation and/or Land Use	:	Paddy rice.
Saline-sodic soil	:	None.
Soil fertility	:	N-P-K fertilizer applied.
Average crop yield	:	1.5 – 1.7 ton/ha.
Soil erosion	:	None.

Soil sample No. SU. 02 (0-16cm); SU. 02 (16-47); SU. 02 (47-87cm)

Profile Description:

0-16 cm: Ap — Clear smooth boundary; pale brown (10YR 6/3 moist) Loamy Sand; structureless; non sticky and non plastic when wet; very friable when moist, soft when dry; few micro interstitial pores; very few, very fine roots; pH H_2O = 4.5 no effervescent.

16-47 cm: Bw — Clear smooth boundary; brown (10YR 5/3 moist) Loamy Sand; weak very fine subangular blocky, non sticky and non plastic when wet; very friable when moist, and soft when dry; few micro interstitial pores; very few, very fine roots; pH H_2O = 4.8 no effervescent.

47-87 cm: Bws1 — Gradual smooth boundary; yellowish brown (10YR 5/4 moist) common with yellowish red medium prominent mottles; Sandy Loam; weak very fine subangular blocky, non sticky and non plastic when wet; very friable when moist, and soft when dry; few with micro, interstitial pores; none roots; pH H_2O = 5.0 no effervescent.

87-125 cm: Bws3 — Gradual smooth boundary; yellowish brown (10YR 5/6 moist) many with yellowish red medium prominent mottles; Sandy Loan; weak very fine subangular blocky; slightly sticky and slightly plastic when wet; friable when moist, slightly hard when dry; few with micro, interstitial pores; none roots; pH H_2O = 4.5 no effervescent.

SAVANNAKHET Province

Un-Inundated area (non flood affected area)

Soil Profile No.	:	SU. 03.
Location	:	Lat: 16° 12' 18"N; Long: 105° 02' 20"E.
Elevation	:	120-130m. above sea level.
Existing soil profile No.	:	P. 123
Soil Classification (FAO/UNESCO)	:	Ferric LUVISOLS (LVf.)
Geology/parent materials	:	Alluvial deposits/Sandstone and Siltstone.
Physiography	:	Flat or almost flat plain with 0-2% slope.
Drainage	:	Well drained.
Vegetation and/or Land Use	:	Paddy rice.
Saline-sodic soil	:	None.
Soil fertility	:	N-P-K fertilizer applied.
Average crop yield	:	1.8 – 2.0 ton/ha.
Soil erosion	:	None.

Soil sample No. SU. 03 (0-13cm); SU. 03 (13-40cm); SU. 03 (40-69m)

Profile Description:

0-13 cm: Ap — Clear smooth boundary; very pale brown (10YR 7/3 moist) Sandy Loam; structureless; non sticky and non plastic when wet; very friable when moist, soft when dry; few micro interstitial pores; very few, veryfine roots; pH H_2O = 5.0 no effervescent.

13-40 cm: Bs — Gradual smooth boundary; very pale brown (10YR 7/4 moist) Sandy Loam; moderate fine subangular blocky, slightly sticky and slightly plastic when wet; very friable when moist, and hard when dry; few micro interstitial pores; very few, very fine roots; pH H_2O = 5.0 no effervescent.

40-69 cm: Bts1 — Gradual smooth boundary; yellow (10YR 7/6 moist) Loam; strong medium subangular blocky, slightly sticky and slightly plastic when wet; firm when moist, and slightly hard when dry; few with micro, interstitial pores; none roots; pH H_2O = 4.8 no effervescent.

69-125 cm: Bts2 — Gradual smooth boundary; browish yellow (10YR 6/6 moist) Clay Loam; strong fine subangular blocky; slightly sticky and slightly plastic when wet; firm when moist, hard when dry; few with micro, interstitial pores; none roots; pH H_2O = 4.5 no effervescent.

SAVANNAKHET Province

Un-Inundated area (non flood affected area)

Soil Profile No.	:	SU. 04.
Location	:	Lat: 16° 06' 50"N; Long: 105° 07' 25"E.
Elevation	:	120-130m. above sea level.
Existing soil profile No.	:	P. 335
Soil Classification (FAO/UNESCO)	:	Haplic SOLONETZ (SNh)
Geology/parent materials	:	Alluvial deposits/Sandstone and Siltstone.
Physiography	:	Flat or almost flat plain with 0-2% slope.
Drainage	:	Well drained.
Vegetation and/or Land Use	:	Paddy rice.
Saline-sodic soil	:	Yes.
Soil fertility	:	N-P-K fertilizer applied.
Average crop yield	:	3.0 – 3.5 ton/ha.
Soil erosion	:	None.

Soil sample No. SU. 04 (0-20cm); SU. 04 (20-45); SU. 04 (45-70cm)

Profile Description:

0-20 cm: Ap — Clear smooth boundary; very pale brown (10YR 7/3 moist) Loamy Sand; structureness; non sticky and non plastic when wet; very friable when moist, soft when dry; few micro interstitial pores; very few, very fine roots; pH H_2O = 5.5 no effervescent.

20-45 cm: Bts — Clear smooth boundary; light brownish gray (10YR 6/2 moist) Sandy Loam; weak very fine subangular blocky, non sticky and non plastic when wet; very friable when moist, and slightly hard when dry; few micro interstitial pores; very few, very fine roots; pH H_2O = 6.0 no effervescent.

45-70 cm: Btn1 — Clear smooth boundar; pale brown (10YR 6/3 moist) Loam; weak fine subangular blocky, slightly sticky and slightly plastic when wet; firm when moist, and hard when dry; few with micro, interstitial pores; none roots; pH H_2O = 6.5 no effervescent.

70-125 cm: Btn2 — Clear smooth boundary; grayish brown (10YR 5/2 moist) Loam; weak medium subangular blocky; slightly sticky and slightly plastic when wet; firm when moist, hard when dry; few with micro, interstitial pores; none roots; pH H_2O = 7.0 no effervescent.

Table 2 Summary of Soil Profile in the F/S Areas

SAVANNAKHET Province

Inundated area (none flood affected area)

Soil Profile No.	:	PT. 01.
Location	:	Lat: 16° 20' 35"N; Long: 105° 03' 10"E.
Elevation	:	120m. above sea level.
Existing soil profile No.	:	P. 509
Soil Classification (FAO/UNESCO)	:	Gleyic ALISOLS (ALg).
Geology/parent materials	:	Alluvial deposits/Sandstone and Claystone.
Physiography	:	Flat or almost flat plain with 0-2% slope.
Drainage	:	Poor drained.
Vegetation and/or Land Use	:	Paddy rice.
Saline-sodic soil	:	None.
Soil fertility	:	N-P-K fertilizer applied.
Average crop yield	:	2.5-3.0T/ha.
Soil erosion	:	None.

Soil sample No. PT. 01 (0-12cm); PT. 01 (12-47cm); PT. 01 (47-85cm)

Profile Description:

0-12 cm: Ap	Abrupt wave boundary; brown (10YR 5/3 dry) Loamy Sand; structureless; friable when moist; very fine tubular pores; abundant fine roots; pH H_2O = 5.0 no effervescent.
12-47 cm: Bts1	Abrupt smooth boundary; grayish brown (10YR 5/2 moist) Clay Loam; moderate coarse angular blocky; slightly sticky and slightly plastic when wet; firm when moist; common very fine interstitial pores; very few, very fine roots; pH H_2O = 5.8 no effervescent.
47-85 cm: Bts2	Gently smooth boundary; light brownish gray (10YR 6/2 moist) few Clay Loam; weak granular; slightly sticky and slightly plastic when wet; friable and soft when moist; common very fine tubular pores; none roots; pH H_2O = 5.1 no effervescent.
85-120 cm: Bts3	Gently smooth boundary; light brownish gray (10YR 6/2 moist) Clay loam; weak fine granular; slightly sticky and slightly plastic when wet; friable when moist, common very fine tubular pores; none roots; pH H_2O = 5.0 no effervescent.

SAVANNAKHET Province

Inundated area (none flood affected area)

Soil Profile No.	:	PT. 02.
Location	:	Lat: 16° 20' 45"N; Long: 105° 03' 30"E.
Elevation	:	140m. above sea level.
Existing soil profile No.	:	P. 509
Soil Classification (FAO/UNESCO)	:	Haplic ALISOLS (ALh).
Geology/parent materials	:	Alluvial deposits/Siltstone and Claystone.
Physiography	:	Flat or almost flat plain with 0-2% slope.
Drainage	:	Moderate drained.
Vegetation and/or Land Use	:	Paddy rice.
Saline-sodic soil	:	None.
Soil fertility	:	N-P-K fertilizer applied.
Average crop yield	:	2.5-3.0T/ha.
Soil erosion	:	None.

Soil sample No. PT. 02 (0-10cm); PT. 02 (10-46cm); PT. 02 (46-83cm)

Profile Description:

0-10 cm: Ap	Abrupt wave boundary; gray (10YR 5/1 moist) Sandy Loam; structureless; none sticky and none plastic when wet; friable when moist; soft when dry; many very fine tubular pores; frequent fine roots; pH H_2O = 5.0 no effervescent.
10-46 cm: Bts1	Clear wave boundary; very dark grayish brown (10YR 3/2 moist) Loam; moderate medium angular blocky; slightly sticky and slightly plastic when wet; slightly hard when moist; many very fine tubular pores; very few, very fine roots; pH H_2O = 5.8 no effervescent.
46-83 cm: Bts2	Gently smooth boundary; dark gray (10YR 4/1 moist) Heavy Clay ; weak fine granular; sticky and plastic when wet; very friable when moist; few very fine interstitial pores; none roots; pH H_2O = 5.1 no effervescent.
83-120 cm: Bts3	Gently smooth boundary; grayish brown (10YR 5/2 moist) Heavy Clay; weak fine granular; sticky and plastic when wet; very friable when moist, few very fine tubular pores; none roots; pH H_2O = 5.0 no effervescent.

SAVANNAKHET Province

Inundated area (none flood affected area)

Soil Profile No.	:	PT. 03.
Location	:	Lat: 16° 20' 15"N; Long: 105° 03' 12"E.
Elevation	:	160m. above sea level.
Existing soil profile No.	:	119
Soil Classification (FAO/UNESCO)	:	Haplic ARENOSOLS (ARh).
Geology/parent materials	:	Alluvial deposits/Sandstone.
Physiography	:	Almost flat plain with 0-8% slope.
Drainage	:	Well drained.
Vegetation and/or Land Use	:	Fruit tree.
Saline-sodic soil	:	None.
Soil fertility	:	None.
Average crop yield	:	500Kg/ha.
Soil erosion	:	None.

Soil sample No. PT. 03 (0-14cm); PT. 03 (14-47cm); PT. 03 (47-85cm)

Profile Description:

0-14 cm: A — Gently smooth boundary; light gray (10YR 7/2 dry) Loamy Sand; structureless; friable when moist; soft when dry; very fine tubular pores; abundant fine roots; pH H_2O = 5.6 no effervescent.

14-47 cm: Ac1 — Abrupt boundary; grayish brown (10YR 6/3 moist) Sand ; structureless; none sticky and none plastic when wet; friable when moist; few fine interstitial pores; frequent, medium roots; pH H_2O = 5.0 no effervescent.

47-85 cm: Ac2 — Diffuse smooth boundary; light brownish gray (10YR 6/4 moist) Sand; structureless; none sticky and none plastic when wet; friable when moist; fine tubular pores; frequent medium roots; pH H_2O = 4.9 no effervescent.

85-120 cm: Ac3 — Difruse smooth boundary; brownish yellow (10YR 6/6 moist) Sand; structureless; none sticky and none plastic when wet; friable when moist, fine tubular pores; frequent medium roots; pH H_2O = 4.5 no effervescent.

KHAMMOUNE Province

Inundated area (none flood affected area)

Soil Profile No.	:	VK. 01.
Location	:	Lat: 17° 36' 10"N; Long: 104° 37' 30"E.
Elevation	:	140m. above sea level.
Existing soil profile No.	:	P. 736
Soil Classification (FAO/UNESCO)	:	Gleyic ACRISOLS (ACg)
Geology/parent materials	:	Alluvial deposits/Sandstone and Claystone.
Physiography	:	Flat or almost flat plain with 0-2% slope.
Drainage	:	Well drained.
Vegetation and/or Land Use	:	Paddy rice.
Saline-sodic soil	:	None.
Soil fertility	:	N-P-K fertilizer applied.
Average crop yield	:	1.5 – 2.0 T/ha.
Soil erosion	:	None.

Soil sample No. VK. 01 (0-10cm); VK. 01 (10-39cm); VK. 01 (39-77cm)

Profile Description:

0-10 cm: Ap — Clear wave boundary; grayish brown (10YR 5/2 moist) Sandy Loam; structureless; none sticky and none plastic when wet; very friable when moist; few micro interstitial pores; common medium roots; pH H_2O = 4.5 no effervescent.

10-39 cm: Bts1 — Gently smooth boundary; grayish brown (10YR 5/2 moist) Sandy Loam; weak very fine granular; none sticky and none plastic when wet; friable when moist; few micro interstitial pores; few, fine roots; pH H_2O = 4.7 no effervescent.

39-77 cm: Bts2 — Gently smooth boundary; light brownish gray (10YR 6/2 moist) Clay Loam; weak very fine granular; slightly sticky and slightly plastic when wet; very friable when moist; common fine tubular pores; common medium roots; pH H_2O = 4.8 no effervescent.

77-120 cm: Bts3 — Gently smooth boundary; light gray (10YR 7/2 moist) Clay loam; weak fine granular; slightly sticky and slightly plastic when wet; friable when moist, common fine tubular pores; common medium roots; pH H_2O = 4.8 no effervescent.

KHAMMOUNE Province

Inundated area (flood affected area)

Soil Profile No.	:	VK. 02.
Location	:	Lat: 17° 36' 28"N; Long: 104° 37' 10"E.
Elevation	:	140m. above sea level.
Existing soil profile No.	:	P. 736
Soil Classification (FAO/UNESCO)	:	Ferric ACRISOLS (ACf.)
Geology/parent materials	:	Alluvial deposits/Sandstone and Claystone.
Physiography	:	Flat or almost flat plain with 0-2% slope.
Drainage	:	Well drained.
Vegetation and/or Land Use	:	Paddy rice.
Saline-sodic soil	:	None.
Soil fertility	:	N-P-K fertilizer applied.
Average crop yield	:	1.0 – 1.5 T/ha.
Soil erosion	:	None.

Soil sample No. VK. 02 (0-14cm); VK. 02 (14-44cm); VK. 02 (44-78cm)

Profile Description:

0-14 cm: Ap — Gently smooth boundary; light gray (10YR 7/2 dry) Sandy Loam; structureless; medium platy and none plastic when wet; firm and hard when dry; few micro interstitial pores; frequent fine roots; pH H_2O = 4.5 no effervescent.

14-44 cm: Bts — Gently smooth boundary; brownish yellow (10YR 6/6 moist) Clay Loam; strong very coarse angular blocky; slightly sticky and slightly plastic when wet; firm and very hard when moist; few fine tubular pores; Very few, very fine roots; pH H_2O = 4.7 no effervescent.

44 -78 cm: Btsc1 — Diffuse smooth boundary; pale brown (10YR 6/3 moist) Light Clay; weak fine granular; slightly sticky and plastic when wet; friable when moist; few fine tubular pores; very few fine roots; pH H_2O = 4.8 no effervescent.

78-120 cm: Btsc2 — Clear smooth boundary; light brownish gray (10YR 6/2 moist) Light Clay; weak fine granular; slightly sticky and slightly plastic when wet; friable when moist, fine tubular pores; very few fine roots; pH H_2O = 4.8 no effervescent.

BOLIKHAMXAY Province

Inundated area (none flood affected area)

Soil Profile No.	:	TH. 01.
Location	:	Lat: 18° 11' 40"N; Long: 104° 11' 42"E.
Elevation	:	120m. above sea level.
Existing soil profile No.	:	Tr. 1018E
Soil Classification (FAO/UNESCO)	:	Haplic ALISOLS (ALh)
Geology/parent materials	:	Alluvial deposits/Sandstone and Claystone.
Physiography	:	Flat or almost flat plain with 0-2% slope.
Drainage	:	Moderate drained.
Vegetation and/or Land Use	:	Paddy rice.
Saline-sodic soil	:	None.
Soil fertility	:	N-P-K fertilizer applied.
Average crop yield	:	2.5 – 3.0 T/ha.
Soil erosion	:	None.

Soil sample No. TH. 01 (0-11cm); TH. 01 (11-36cm); TH. 01 (36-77cm)

Profile Description:

0-11 cm: Ap — Clear wave boundary; light gray (10YR 7/2 dry) Loam; structureless; none sticky and none plastic when wet; firm and hard when dry; common fine interstitial pores; common, very fine roots; pH H_2O = 4.3 no effervescent.

11-36 cm: Bts1 — Gently smooth boundary; brown (10YR 4/3 moist) Clay Loam; strong coarse angular blocky; slightly sticky and slightly plastic when wet; firm and hard when moist; few fine tubular pores; very few, very fine roots; pH H_2O = 4.6 no effervescent.

36 -77 cm: Bts2 — Gently smooth boundary; grayish brown (10YR 5/2 moist) Clay Loam; moderate medium coarse subangular blocky; sticky and plastic when wet; friable and hard when moist; few fine iterstitial pores; very few, very fine roots; pH H_2O = 4.7 no effervescent.

77-120 cm: Bts3 — Gently smooth boundary; light brownish gray (10YR 6/2 moist) Light Clay; weak fine granular; sticky and plastic when wet; friable when moist, few with micro interstitial pores; very few very fine roots; pH H_2O = 4.6 no effervescent.

BOLIKHAMXAY Province

Inundated area (flood affected area)

Soil Profile No.	:	TH. 02.
Location	:	Lat: 18° 11' 05"N; Long: 104° 11' 40"E.
Elevation	:	120m. above sea level.
Existing soil profile No.	:	Tr. 1018E
Soil Classification (FAO/UNESCO)	:	Haplic ALISOLS (ALh)
Geology/parent materials	:	Alluvial deposits/Sandstone and Claystone.
Physiography	:	Flat or almost flat plain with 0-2% slope.
Drainage	:	Imperfect drained.
Vegetation and/or Land Use	:	Paddy rice.
Saline-sodic soil	:	None.
Soil fertility	:	N-P-K fertilizer applied.
Average crop yield	:	2.5 – 3.0 T/ha.
Soil erosion	:	None.

Soil sample No. TH. 02 (0-10cm); TH. 02 (10-38cm); TH. 02 (38-76cm)

Profile Description:

0-10 cm: Ap — Clear wave boundary; very pale brown (10YR 7/3 dry) light Clay; structureless; sticky and plastic when wet; very firm and hard when dry; common fine interstitial pores; common, fine roots; pH H_2O = 4.3 no effervescent.

10-38 cm: Bts1 — Gently smooth boundary; brown (10YR 5/3 moist) Light Clay ; moderate medium subangular blocky; sticky and plastic when wet; friable when moist; few very fine tubular pores; few, fine roots; pH H_2O = 4.6 no effervescent.

38 -76 cm: Bts2 — Gently smooth boundary; yellowish brown (10YR 5/4 moist) Light Clay; weak fine subangular blocky; sticky and plastic when wet; friable when moist; common fine tubular pores; very few fine roots; pH H_2O = 4.7 no effervescent.

76-120 cm: Bts3 — Gently smooth boundary; yellowish brown (10YR 5/6 moist) Light Clay; weak fine subangular blocky; sticky and plastic when wet; friable when moist, few common fine tubular pores; none roots; pH H_2O = 4.6 no effervescent.

BOLIKHAMXAY Province

Inundated area (none flood affected area)

Soil Profile No.	:	NH. 01.
Location	:	Lat: 18° 14' 25"N; Long: 104° 12' 35"E.
Elevation	:	120m. above sea level.
Existing soil profile No.	:	P. 070
Soil Classification (FAO/UNESCO)	:	Eutric CAMBISOLS (CMe)
Geology/parent materials	:	Alluvial deposits/Sandstone and Claystone.
Physiography	:	Flat or almost flat plain with 0-2% slope.
Drainage	:	Well drained.
Vegetation and/or Land Use	:	Paddy rice.
Saline-sodic soil	:	None.
Soil fertility	:	N-P-K fertilizer applied.
Average crop yield	:	3.0 – 3.5 T/ha.
Soil erosion	:	None.

Soil sample No. NH. 01 (0-12cm); NH. 01 (12-41cm); NH. 01 (41-80cm)

Profile Description:

0-12 cm: Ap — Clear wave boundary; reddish brown (5YR 5/3 dry) Loam; structureless; none sticky and none plastic when wet; hard when dry; few micro interstitial pores; common, fine roots; pH H_2O = 4.7 no effervescent.

12-41 cm: Bws1 — Gently smooth boundary; reddish brown (5YR 4/3 moist) Clay ; moderate medium subangular blocky; slightly sticky and plastic when wet; firm when moist; common fine tubular pores; few, very fine roots; pH H_2O = 4.9 no effervescent.

41 -80 cm: Bws2 — Gently smooth boundary; dark brown (7.5YR 4/3 moist) Clay Loam; weak fine granular; sticky and plastic when wet; freable when moist; common fine tubular pores; none roots; pH H_2O = 4.9 no effervescent.

80-120 cm: Bws3 — Gently smooth boundary; reddish brown (5YR 4/3 moist) Clay Loam; weak fine granular; sticky and plastic when wet; friable when moist, common fine tubular pores; none roots; pH H_2O = 5.1 no effervescent.

BOLIKHAMXAY Province

Inundated area (none flood affected area)

Soil Profile No.	:	NK. 01.
Location	:	Lat: 18° 13' 55"N; Long: 104° 12' 10"E.
Elevation	:	120m. above sea level.
Existing soil profile No.	:	P. 062
Soil Classification (FAO/UNESCO)	:	Gleyic CAMBISOLS (CMg)
Geology/parent materials	:	Alluvial deposits/Sandstone and Claystone.
Physiography	:	Flat or almost flat plain with 0-2% slope.
Drainage	:	Moderate drained.
Vegetation and/or Land Use	:	Paddy rice.
Saline-sodic soil	:	None.
Soil fertility	:	N-P-K fertilizer applied.
Average crop yield	:	2.5 – 3.0 T/ha.
Soil erosion	:	None.

Soil sample No. NK. 01 (0-13cm); NK. 01 (13-41cm); NK. 01 (41-78cm)

Profile Description:

0-13 cm: Ap — Clear wave boundary; pale brown (10YR 6/3 dry) Loam; structureless; none sticky and none plastic when wet; very hard when dry; few micro interstitial pores; common, fine roots; pH H_2O = 4.6 no effervescent.

13-41 cm: Bws1 — Gently smooth boundary; dark brown (10YR 5/2 moist) Clay Loam; moderate medium subangular blocky; slightly sticky and slightly plastic when wet; firm when moist; few fine tubular pores; few, fine roots; pH H_2O = 4.6 no effervescent.

41 -78 cm: Bws2 — Gently smooth boundary; yellowish brown (10YR 5/6 moist) Clay Loam; weak fine granular; sticky and plastic when wet; friable when moist; common fine tubular pores; very few, very fine roots; pH H_2O = 4.8 no effervescent.

78-120 cm: Bws3 — Gently smooth boundary; light yellowish brown (10YR 6/4 moist) Light Clay; weak fine granular; sticky and plastic when wet; friable when moist, common fine tubular pores; none roots; pH H_2O = 4.9 no effervescent.

Table 3 Soil Distribution in the Study area

Soil Units \ Districts \ Province			Bolikhamsai					Khammuoane					Savanakhet				
			Thaphabath	Bolikham	Paksan	Pakkading	Bolikhamsai	Hinboun	Thakhek	Nongbok	Sebangfai	Khammouane	Xaibouri	Khanthabouri	Songkhaon	Xaiphouthong	Savannakhet
(1)	Ferralic	ARENOSOLS						1,009.0				1,009.0	7,818.1		6,557.0		14,375.1
(2)	Haplic	ARENOSOLS	1,513.0	1,513.0	1,513.0	1,009.0	5,548.0	5,044.0				5,044.0	14,879.6		252.0		15,131.6
(3)	Dystric	FLUVISOLS												504.4		3,026.4	3,530.8
(4)	Eutric	FLUVISOLS													3,026.0	504.4	3,530.4
(5)	Dystric	GLEYSOLS												6,809.3			6,809.3
(6)	Eutric	GLEYSOLS															
(7)	Umbric	GLEYSOLS				757.0	757.0										
(8)	Distric	REGOSOLS															
(9)	Dystri	LEPTOSOLS			1,513.2	8,827.0	10,340.2	6,053.0	4,791.7			10,844.7		3,026.4	252.0		3,278.4
(10)	Eutric	LEPTOSOLS									252.2	252.2					
(11)	Dystric	REGOSOLS	3,279.0	3,279.0	3,026.0	5,801.0	15,385.0		3,026.4			3,026.4					
(12)	Eutric	REGOSOLS															
(13)	Gleyic	CAMBISOLS	1,009.0	1,009.0	5,043.9	757.0	7,818.9	504.0	4,287.3	3,026.4		7,817.7	1,008.8		21,698.0	4,035.1	26,741.9
(14)	Humic	CAMBISOLS				2,018.0	2,018.0										
(15)	Calcaric	CAMBISOLS															
(16)	Ferralic	CAMBISOLS						4,287.0	5,296.1	756.6		10,339.7					
(17)	Dystric	CAMBISOLS	5,296.0	252.2	3,026.4	3,531.0	12,105.6	3,279.0	3,530.7	1,765.4		8,575.1	6,809.3	12,357.6	21,689.0	4,035.1	44,891.0
(18)	Eutric	CAMBISOLS			1,008.8		1,008.8		12,852.0	1,008.8	2,017.6	15,878.4	1,513.2	252.2	13,114.0		14,879.4
(19)	Gleyic	ACRISOLS			2,522.0		2,522.0										
(20)	Humic	ACRISOLS				504.0	504.0	13,114.0				13,114.0					
(21)	Ferric	ACRISOLS			3,278.5	6,557.0	9,835.5	41,108.0	14,375.2	5,296.1	14,375.2	75,154.5	29,506.9	12,105.4	757.0	504.4	42,873.7
(22)	Haplic	ACRISOLS		9,079.1	3,026.4	5,801.0	17,906.5										
(23)	Gleyic	ALISOLS	4,035.0	4,035.0	6,557.1	504.0	15,131.1						504.4				504.4
(24)	Humic	ALISOLS						252.0				252.0					
(25)	Ferric	ALISOLS	17,149.0	19,166.9	19,166.9	21,941.0	77,423.8	20,428.0	14,879.6	8,826.9	23,202.0	67,336.5	17,401.5	7,565.9	67,084.0	9,835.6	101,887.0
(26)	Haplic	ALISOLS	5,044.0	8,070.3	10,087.8	47,161.0	70,363.1	26,985.0	5,043.9	6,809.3	6,304.9	45,143.1	8,070.3	4,539.5	6,305.0		18,914.8
(27)	Gleyic	LIXISOLS						2,522.0			504.4	3,026.4					
(28)	Ferric	LIXISOLS			252.2		252.2	1,765.0				1,765.0					
(29)	Haplic	LIXISOLS						1,261.0			8,322.5	9,583.5					
(30)	Gleyic	SOLONCHAKS															
(31)	Haplic	SOLONCHAKS															
(32)	Gleyic	SOLONETZ												252.2	1,009.0		1,261.2
(33)	Haplic	SOLONETZ													1,009.0		1,009.0
(34)	Stagnic	SOLONETZ															
(35)	Gleyic	LUVISOLS			252.2		252.2	252.0	1,513.2			1,765.2					
(36)	Calcic	LUVISOLS															
(37)	Ferric	LUVISOLS			1,765.4		1,765.4	757.0	1,765.4	1,513.2	6,052.7	10,088.3	6,304.9	252.2	36,568.0	12,862.0	55,987.1
(38)	Haplic	LUVISOLS	2,018.0	504.4	252.2	2,018.0	4,792.6	3,531.0	5,296.1	3,026.4	3,530.7	15,384.2					
			39,343.0	46,908.9	62,292.0	107,186.0	255,729.9	132,151.0	76,657.6	32,029.1	64,562.2	305,399.9	93,817.0	47,665.1	179,320.0	34,803.0	355,605.1

Table 4 Paddy Production and Yield (1990-1999) (1)

	Rain season								
	1990	1991	1992	1993	1994	1995	1996	1997	1998
Bolikhamsai									
Production	ND	ND	ND	ND	24,281	10,669	29,596	19,133	54,097
Yield	ND	ND	ND	ND	1.80	1.57	2.27	1.74	2.99
1 Thaphabath									
Production	ND	ND	ND	ND	2,959	4,464	5,123	2,669	11,778
Yield	ND	ND	ND	ND	1.80	1.55	2.28	2.14	3.40
2 Bolikham									
Production	ND	ND	ND	ND	3,818	2,502	2,977	1,681	5,260
Yield	ND	ND	ND	ND	1.80	2.61	2.28	1.00	2.60
3 Paksan									
Production	ND	ND	ND	ND	10,588	3,581	13,248	7,244	22,885
Yield	ND	ND	ND	ND	1.80	1.24	2.26	1.52	3.04
4 Pakkadin									
Production	ND	ND	ND	ND	6,916	122	8,248	7,539	14,174
Yield	ND	ND	ND	ND	1.80	1.36	2.28	2.30	2.80
Khammouane									
Production	65,151	28,470	63,689	48,318	44,102	46,526	21,917	52,167	63,791
Yield	2.70	1.99	2.56	2.16	2.82	2.82	1.64	2.41	2.67
5 Hinboun									
Production	15,640	6,026	14,281	9,024	6,692	7,118	5,706	7,328	6,150
Yield	2.55	1.97	2.40	2.05	2.13	1.83	1.16	1.46	1.50
6 Thakhek									
Production	19,977	10,347	14,301	12,281	13,810	10,189	9,925	15,925	19,080
Yield	2.75	2.00	2.36	2.12	2.49	2.67	2.23	2.76	2.83
7 Nongbok									
Production	29,534	10,190	24,912	20,526	16,343	22,967	4,680	23,256	31,535
Yield	2.76	2.05	2.73	2.34	3.40	3.45	1.79	3.11	3.30
8 Sebangfai									
Production	0	1,908	10,195	6,486	7,257	6,252	1,606	5,658	7,026
Yield	#DIV/0!	1.72	2.70	1.90	3.38	2.98	1.14	1.69	2.00
Savanakhet									
Production	79,938	66,514	91,168	47,087	100,368	97,448	60,207	125,853	117,593
Yield	2.97	3.06	3.08	2.82	3.38	3.08	2.71	3.39	3.31
9 Xaibouri									
Production	18,913	7,357	23,970	12,453	11,319	12,843	4,700	21,037	23,060
Yield	2.70	2.50	2.96	4.80	2.90	3.00	3.10	3.20	3.30
10 Khanthabouri									
Production	31,805	28,002	29,342	16,624	32,128	34,525	28,265	18,157	16,380
Yield	3.14	3.10	3.02	2.51	3.20	3.20	2.99	3.35	3.00
11 Songkhaon									
Production	29,220	31,155	37,856	18,010	56,921	50,080	27,242	67,242	60,939
Yield	3.00	3.20	3.20	2.40	3.61	3.03	2.42	3.50	3.50
12 Xaibouathong									
Production	-	-	-	-	-	-	-	19,417	17,214
Yield	-	-	-	-	-	-	-	3.30	3.02
Study area									
Production	145,089	94,984	154,857	95,405	168,751	154,643	111,720	197,153	235,481
Yield	2.85	2.64	2.84	2.44	2.87	2.78	2.30	2.83	3.04

Source: PAFSO

Table 4 Paddy Planted Area, Flood Affected area and Harvested area (1990-1999) (2)

	Wet season								
	1990	1991	1992	1993	1994	1995	1996	1997	1998
Bolikhamsai									
Planted	ND	ND	ND	ND	13,489	15,712	14,811	15,973	18,077
F Affected	ND	ND	ND	ND	0	8,906	1,770	5,001	0
Harvested	ND	ND	ND	ND	13,489	6,806	13,041	10,972	18,077
1 Thaphabath									
Planted	ND	ND	ND	ND	1,644	4,121	2,776	3,048	3,464
F Affected	ND	ND	ND	ND	0	1,250	529	1,801	0
Harvested	ND	ND	ND	ND	1,644	2,871	2,247	1,247	3,464
2 Bolikham									
Planted	ND	ND	ND	ND	2,121	1,651	1,600	1,911	2,023
F Affected	ND	ND	ND	ND	0	692	294	230	0
Harvested	ND	ND	ND	ND	2,121	959	1,306	1,681	2,023
3 Paksan									
Planted	ND	ND	ND	ND	5,882	6,340	6,341	6,640	7,528
F Affected	ND	ND	ND	ND	0	3,454	470	1,874	0
Harvested	ND	ND	ND	ND	5,882	2,886	5,871	4,766	7,528
4 Pakkadin									
Planted	ND	ND	ND	ND	3,842	3,600	4,094	4,374	5,062
F Affected	ND	ND	ND	ND	0	3,510	477	1,096	0
Harvested	ND	ND	ND	ND	3,842	90	3,617	3,278	5,062
Khammouane									
Planted	25,250	24,785	24,912	24,636	24,519	28,734	26,391	26,950	23,911
F Affected	1,148	10,470	0	1,032	10,270	12,264	13,547	5,335	0
Harvested	24,102	14,315	24,912	22,381	15,645	17,258	13,394	21,615	23,911
5 Hinboun									
Planted	6,145	5,932	5,951	5,566	6,623	7,769	6,951	6,808	4,100
F Affected	10	2,870	0	887	3,481	3,870	2,032	1,789	0
Harvested	6,135	3,062	5,951	4,402	3,142	3,899	4,919	5,019	4,100
6 Thakhek									
Planted	7,383	5,755	6,060	6,168	6,359	6,290	6,316	6,752	6,742
F Affected	118	582	0	70	813	2,474	1,865	982	0
Harvested	7,265	5,173	6,060	5,793	5,546	3,816	4,451	5,770	6,742
7 Nongbok									
Planted	11,723	9,333	9,125	9,234	9,137	10,777	9,555	9,775	9,556
F Affected	1,020	4,362	0	0	4,331	4,120	6,940	2,297	0
Harvested	10,703	4,971	9,125	8,772	4,807	6,657	2,615	7,478	9,556
8 Sebangfai									
Planted	—	3,766	3,776	3,668	2,400	3,898	3,569	3,615	3,513
F Affected	—	2,657	0	75	1,645	1,800	2,710	267	0
Harvested	—	1,109	3,776	3,414	2,150	2,886	1,409	3,348	3,513
Savanakhet									
Planted	ND	ND	ND	ND	ND	36,571	33,122	40,701	37,538
F Affected	ND	ND	ND	ND	ND	4,973	10,894	3,611	1,924
Harvested	26,872	21,711	29,644	16,724	29,718	31,598	22,228	37,090	35,559
9 Xaibouri									
Planted	ND	ND	ND	ND	ND	8,487	7,575	7,662	7,214
F Affected	ND	ND	ND	ND	ND	4,206	6,059	1,088	226
Harvested	7,003	2,942	8,098	2,597	3,903	4,281	1,516	6,574	6,988
10 Khanthabouri									
Planted	ND	ND	ND	ND	ND	11,236	10,384	5,730	5,515
F Affected	ND	ND	ND	ND	ND	447	929	310	0
Harvested	10,129	9,033	9,716	6,623	10,040	10,789	9,455	5,420	5,460
11 Songkhaon									
Planted	ND	ND	ND	ND	ND	16,848	15,163	21,069	19,052
F Affected	ND	ND	ND	ND	ND	320	3,906	1,857	1,641
Harvested	9,740	9,736	11,830	7,504	15,775	16,528	11,257	19,212	17,411
12 Xaibouathong									
Planted	-	-	-	-	-	-	-	6,240	5,757
F Affected	-	-	-	-	-	-	-	356	57
Harvested	-	-	-	-	-	-	-	5,884	5,700
Study area									
Planted	25,250	24,785	24,912	24,636	38,008	81,017	74,324	83,624	79,526
F Affected	1,148	10,470	0	1,032	10,270	26,143	26,211	13,947	1,924
Harvested	50,974	36,026	54,556	39,105	58,852	55,662	48,663	69,677	77,547

Source: PAFSO

Table 4 Paddy Production and Yield (1990-1999) (3)

	Dry season								
	1990	1991	1992	1993	1994	1995	1996	1997	1998
Bolikhamsai									
Production	ND	ND	ND	ND	13	25	63	879	19,330
Yield	ND	ND	ND	ND	3.40	2.30	3.02	4.10	4.19
1 Thaphabath									
Production	ND	ND	ND	ND	0	0	0	442	4,731
Yield	ND	ND	ND	ND	0.00	0.00	0.00	3.89	4.34
2 Bolikham									
Production	ND	ND	ND	ND	0	0	0	14	526
Yield	ND	ND	ND	ND	0.00	0.00	0.00	3.50	4.70
3 Paksan									
Production	ND	ND	ND	ND	13	19	51	410	13,248
Yield	ND	ND	ND	ND	3.40	2.43	3.00	4.41	4.30
4 Pakkadin									
Production	ND	ND	ND	ND	0	6	12	12	825
Yield	ND	ND	ND	ND	0.00	1.95	3.10	3.20	2.50
Khammouane									
Production	2,671	1,099	5,284	3,438	1,391	3,132	4,476	13,872	27,405
Yield	3.85	3.50	4.05	4.31	4.12	4.55	4.85	4.28	4.97
5 Hinboun									
Production	12	0	20	0	0	0	13	1,601	4,200
Yield	3.50	0.00	4.06		0.00	0.00	4.33	2.70	4.00
6 Thakhek									
Production	1,818	609	1,246	1,156	976	1,256	1,678	3,468	7,831
Yield	3.60	3.50	4.06	4.68	4.70	4.50	4.81	4.62	5.80
7 Nongbok									
Production	841	490	2,639	1,470	176	836	1,270	6,619	11,294
Yield	4.55	3.50	4.06	4.20	3.50	4.67	4.81	5.08	5.35
8 Sebangfai									
Production	-	-	1,379	812	240	1,040	1,515	2,184	4,080
Yield	-	-	4.01	4.06	3.00	4.50	4.95	3.67	4.08
Savanakhet									
Production	1,386	685	1,465	3,309	4,456	5,269	9,560	25,475	47,916
Yield	0.00	1.72	0.77	3.15	3.73	3.62	4.08	4.17	4.51
9 Xaibouri									
Production	735	210	342	2,229	2,789	3,340	5,999	16,305	29,713
Yield	0.00	1.02	0.40	3.17	3.59	3.67	3.97	4.01	4.70
10 Khanthabouri									
Production	301	376	657	576	438	570	1,176	1,660	2,797
Yield	0.00	2.63	3.20	3.20	3.50	3.73	3.92	5.53	4.25
11 Songkhaon									
Production	350	99	466	504	1,229	1,359	2,385	7,370	13,257
Yield	0.00	1.98	0.56	3.00	4.21	3.45	4.50	4.30	4.30
12 Xaibouathong									
Production	ND	ND	ND	ND	ND	ND	ND	140	2,149
Yield	ND	ND	ND	ND	ND	ND	ND	4.38	3.90
Study Area									
Production	4,057	1,784	6,749	6,747	5,860	8,426	14,099	40,226	94,651
Yield	3.49	2.50	2.11	3.65	3.82	3.91	4.29	4.20	4.56

Source: PAFSO

1998 Dry season: Projection

Table 4 Paddy Planted Area, Flood affected area and Harvested area (1990-1999) (4)

	Dry season								
	1990	1991	1992	1993	1994	1995	1996	1997	1998
Bolikhamsai									
Planted	ND	ND	ND	ND	4	11	21	222	4,739
F Affected	ND	ND	ND	ND	0	0	0	0	126
Harvested	ND	ND	ND	ND	4	11	21	215	4,613
1 Thaphabath									
Planted	ND	ND	ND	ND	0	0	0	122	1,102
F Affected	ND	ND	ND	ND	0	0	0	0	12
Harvested	ND	ND	ND	ND	0	0	0	114	1,090
2 Bolikham									
Planted	ND	ND	ND	ND	0	0	0	4	124
F Affected	ND	ND	ND	ND	0	0	0	0	12
Harvested	ND	ND	ND	ND	0	0	0	4	112
3 Paksan									
Planted	ND	ND	ND	ND	4	8	17	93	3,088
F Affected	ND	ND	ND	ND	0	0	0	0	7
Harvested	ND	ND	ND	ND	4	8	17	93	3,081
4 Pakkadin									
Planted	ND	ND	ND	ND	0	3	4	4	425
F Affected	ND	ND	ND	ND	0	0	0	0	95
Harvested	ND	ND	ND	ND	0	3	4	4	330
Khammouane									
Planted	693	314	1,306	797	338	689	922	3,247	5,511
F Affected	0	0	0	0	0	0	0	0	0
Harvested	693	314	1,306	797	338	689	922	3,241	5,511
5 Hinboun									
Planted	4	0	5	0	0	0	3	593	1,050
F Affected	0	0	0	0	0	0	0	0	0
Harvested	4	0	5	0	0	0	3	593	1,050
6 Thakhek									
Planted	505	174	307	247	208	279	349	756	1,350
F Affected	0	0	0	0	0	0	0	0	0
Harvested	505	174	307	247	208	279	349	750	1,350
7 Nongbok									
Planted	185	140	650	350	50	179	264	1,303	2,111
F Affected	0	0	0	0	0	0	0	0	0
Harvested	185	140	650	350	50	179	264	1,303	2,111
8 Sebangfai									
Planted	-	-	344	200	80	231	306	595	1,000
F Affected	-	-	0	0	0	0	0	0	0
Harvested	-	-	344	200	80	231	306	595	1,000
Savanakhet									
Planted	0	0	0	0	1,199	1,486	2,361	6,239	10,668
F Affected	0	0	0	0	5	29	20	28	54
Harvested	468	399	1,897	1,051	1,194	1,457	2,341	6,112	10,614
9 Xaibouri									
Planted	0	0	0	0	782	910	1,511	4,066	6,330
F Affected	0	0	0	0	5	0	0	0	8
Harvested	196	206	862	703	777	910	1,511	4,066	6,322
10 Khanthabouri									
Planted	0	0	0	0	125	182	300	399	674
F Affected	0	0	0	0	0	29	20	0	16
Harvested	132	143	205	180	125	153	300	300	658
11 Songkhaon									
Planted	0	0	0	0	292	394	550	1,734	3,083
F Affected	0	0	0	0	0	0	0	20	0
Harvested	140	50	830	168	292	394	530	1,714	3,083
12 Xaibouathong									
Planted	-	-	-	-	-	-	-	40	581
F Affected	-	-	-	-	-	-	-	8	30
Harvested	-	-	-	-	-	-	-	32	551
Study Area									
Planted	693	314	1,306	797	1,541	2,186	3,304	9,708	20,918
F Affected	0	0	0	0	5	29	20	28	180
Harvested	1,161	713	3,203	1,848	1,536	2,157	3,284	9,568	20,738

Source: PAFSO