

**Crops Production Monitoring, Evaluation, and Planning in NRI and NRI-AF
subproject areas: Production result of 2022 wet season and 2021-22 dry season
production**

Table of Contents

1. Introduction	2
2. Objective	2
3. Methodology.....	2
4. Irrigated land use evaluation for 2022 wet season and 2021-22 dry season production in NRI and NRI-AF subprojects	2
4.1 Result of irrigated land use and productivity of 2022 wet season production in NRI subprojects.....	2
4.2 Result of irrigated land use and productivity of 2021-22 dry season in NRI subprojects.....	3
4.3 Result of Irrigated land use and productivity of 2022 wet season in NRI-AF subprojects.....	5
4.4 Result of irrigated land use and productivity of 2021-22 dry season for phase 1, 2, 3 and 4 subprojects in NRI-AF	5
4.5 Result of commercial crop production of Nam Beng and Nam Oun subprojects in 2021-22 dry season at Oudomxay province	6
4.6 Seasonal Farmer Production Group (FPG) establishment and crop production in 2021-22 dry season under contract farming for NRI and NRI-AF project.	7
5. The Investors for commercial crop production in 2021-22 dry season in NRI and NRI-AF subprojects in Phongsaly, Oudomxay, Luangnamtha and Bokeo province	8

1. Introduction

The 2022 wet season production in the command areas of NRI Year 1, 2 and 3 subprojects and NRI-AF phase 1, 2, 3 and phase 4 subprojects was implemented from May to November 2022 and dry season from December 2021 to May 2022. Most of the beneficiary farmers grow paddy rice (glutinous rice) in irrigated area as the main crop in wet season and plan to grow rice and commercial crops in dry season. They use improved rice varieties domestically available and imported from China. Some of the harvested rice kept for home consumption and the rest sold to the traders and intermediaries in and outside the villages. Evaluation of the crop production progress enables farmers to develop their production implementation plan before harvesting wet season.

2. Objective

To evaluate the crop yield per hectare land use in irrigated area according to the water availability in NRI year 1, 2 three subproject and NRI-AF phase 1, 2, 3 and phase 4 subprojects.

3. Methodology

The PPO and DCO staffs monitor the implementation process, collect involved data, and evaluate the production yield after harvesting and analyzed by the GIC. The PPO/DCO use **crop-cutting** method to estimate the crop yield per hectare during each harvesting season. One subproject area selected 3-4 sample fields / benefit households and one sample field indicates 4-5 sample plots with lay down the 1 square meter frame in order to harvest the paddy within. A sample plot selected randomly within the sample field. At the same time, PPO and DCOs interview the selected households to discuss about growing technique such as variety name, growing period, fertilization, pest protection and maintenance.

4. Irrigated land use evaluation for 2022 wet season and 2021-22 dry season production in NRI and NRI-AF subprojects

4.1 Result of irrigated land use and productivity of 2022 wet season production in NRI subprojects

As of 31 November 2022, the 2022 wet season production of NRI year 1, 2, and year 3 subprojects had the rice growing area of 5,487ha equivalent to 100 percent of total irrigated area of 5,487ha. The main crop in wet season was rice in irrigated area and estimates an average yield from 4.5 to 5.5 t/ha, detailed in Table 1. Farmers used improved rice varieties with short maturity day like TDK5, TDK11, Khao Hom, Naxang, improved rice from China, Sebangfai, Nam Tha 1, Homphoy, Outai, Sanpatong and other local varieties such as Takhiat, Kainoy Khao and Dor Hom.

Table 1: Result of irrigated Land Use and Productivity of wet season 2020,2021 and 2022 in NRI Year 1,2 and 3 subprojects											
No.	Subproject Name	Province	Subproject Area (ha)	Crop	WS 2020		WS 2021		WS 2022 ¹⁾		Remarks
					Area (ha)	Average Yield (t/ha)	Area (ha)	Average Yield (t/ha)	Area (ha)	Average Yield (t/ha)	
Year 1											
1	Nam Ou Irrigation	PSL	440	1. Rice	440	5.5	440	5.4	440	5.5	
2	Nam Lan Irrigation	PSL	82	1. Rice	82	5.5	82	5.5	82	5.3	
3	Nam Dai irrigation	LNT	257	1. Rice	257	4.8	257	5.2	257	5.1	
4	Nam Ma Oun Irrigation	LNT	105	1. Rice	1	5.5	105	5.2	105	5.4	
				Sugar cane	104					5.2	
5	Hong Kong Irrigation	LNT	155	1. Rice	155	5.2	155	5.3	155	5.5	
6	Nam Haad (RB) Irrigation	Bokeo	150	1. Rice	150	5.5	150	5.4	150	5.4	
7	Houay Xo Irrigation	Bokeo	92	1. Rice	92	4.7	92	4.8	92	5.1	
8	Nam Tin Irrigation	Bokeo	500	1. Rice	500	4.8	500	5.0	500	5.0	
9	Nam Thae Irrigation	PSL	140	1. Rice	140	5.2	140	5.3	140	5.3	
10	Nam Ngene (Nawai) Irrigation	PSL	117	1. Rice	117	5.4	117	5.4	117	5.4	
11	Nam Gna(vi) + Houay Louang	LNT	406	1. Rice	406	5.0	406	5.2	406	5.2	
12	Nam Bak Irrigation	LNT	217	1. Rice	217	5.2	217	4.9	217	4.8	
13	Houay Gngang	LNT	355	1. Rice	355	5.0	355	5.2	355	5.2	
14	Nam Haad (LB) Irrigation	Bokeo	450	1. Rice	450	5.3	450	5.2	450	5.3	
15	Houay Sad Irrigation	Bokeo	120	1. Rice	120	4.5	120	4.8	120	4.8	
16	Nam Pouk Irrigation	Bokeo	236	1. Rice	236	5.5	236	5.4	236	5.4	
17	Nam Ngene (Namark) Irrigation	PSL	185	1. Rice	185	5.2	185	5.3	185	5.2	
18	Nam Xang Irrigation	PSL	164	1. Rice	164	4.5	164	5.0	164	4.7	
19	Nam Gna (IV)&(V) Irrigation	LNT	256	1. Rice	256	5.0	256	4.9	256	4.8	
20	Houay Makmue Irrigation	LNT	150	1. Rice	150	4.7	150	4.6	150	4.5	
21	Nam Ngene-Thonpaen Irrigation	LNT	290	1. Rice	290	5.0	290	5.3	290	5.3	
22	Houay Lieng Irrigation	Bokeo	270	1. Rice	270	5.2	270	5.0	270	5.1	
23	Houay Sa Irrigation	Bokeo	110	1. Rice	110	5.0	110	4.9	110	4.8	
24	Nam Chae Irrigation	Bokeo	240	1. Rice	240	5.5	240	5.2	240	5.2	
Total of 4 provinces			5,487		5,487	5.01	5,487	5.03	5,487	5.16	
Rice					5,383	98.10	5,487		5,487		
					98		100		100	%	
Sugarcane					104.0				-		
					1.9					%	

Note: 1) summarized the data from PPO report in November 2022

4.2 Result of irrigated land use and productivity of 2021-22 dry season in NRI subprojects.

- The Result of production implementation in 2021-22 dry season for NRI Year 1, 2 and 3 subprojects start from January to the end of March 2022. PPO and DCOs have to monitor and assist direct with benefit farmers in each subproject.

- The actual growing area is 1,239 ha equivalent to 22.58 percent of the total command area (5,487 ha).

- Rice was the main crop in 2021-22 dry season production in each subproject. Farmers used improved rice variety namely TDK11, TDK8, TDK5, Nam Tha 1 Dor Hom, Hom Phoy, Sanpatong, reported by PPO and DCOs.

- The dry season crops accepted rice and sugarcane were fresh and grain soybean, green bean, pumpkin and vegetables, detailed in Table 2.

Table 2 : Result of irrigated Land Use and Productivity of 2021-22 dry season for NRI Year 1,2 and 3 subprojects

No.	Subproject Name	Province	Subproject Area (ha)	Crop	2021-22 Dry Season		Total yield (tons)	Remarks
					Growing Area (ha)	Yield (t/ha)		
Year 1								
1	Nam Ou Irrigation	PSL	440	Garlic	12	4.0	48.0	
				Leaf vegetable	7.0			
2	Nam Lan Irrigation	PSL	82	Greenbean	10	10.0	100.0	
				Pumpkin	14	37.0	518.0	
				Water melon	18	18.0	324.0	
3	Nam Dai irrigation	LNT	257	Garlic	15.0	4.0	60.0	
4	Nam Ma Oun	LNT	105	Sugar cane	104.0			
				Vegetables				
5	Hong Kong Irrigation	LNT	155	Fresh soybean	27.0	8.0	216.0	
				Rice	15.0	5.0	75.0	
6	Nam Haad (RB) Irrigation	Bokeo	150	Rice	150.0	5.0	750.0	
7	Houay Xo Irrigation	Bokeo	92	Rice	5.0	5.0	25.0	
8	Nam Tin Irrigation	Bokeo	500	Grain soybean	12.0	2.0	24.0	
Year 2								
9	Nam Thae Irrigation	PSL	140	Garlic	10.0	4.0	40.0	
				Leaf vegetable	3.0			
10	Nam Ngene (Nawai) Irrigation	PSL	117	Pumpkin	20.0	37.0	740.0	
11	Nam Gna(vi) + Houay Louang	LNT	406	Rice	53.0	5.0	265.0	
				Garlic, Onion	20.0		-	
12	Nam Bak Irrigation	LNT	217	Sugar cane	110.0			
13	Houay Gnang	LNT	355	Fresh soybean	50.0	4.5	225.0	
14	Nam Haad (LB) Irrigation	Bokeo	450	Rice	20.0	5.0	100.0	
15	Houay Sad Irrigation	Bokeo	120	Rice	10.0	5.0	50.0	
16	Nam Pouk Irrigation	Bokeo	236	Soybean	100.0	8.0	800.0	
Year 3								
17	Nam Ngene (Namark) Irrigation	PSL	185	Pumpkin	15.0	37.0	555.0	
				Greenbean	7.0	10.0	70.0	
18	Nam Xang Irrigation	PSL	164	Garlic	10.0	4.0	40.0	
				Vegetables	5.0		-	
19	Nam Gna (IV)&(V) Irrigation	LNT	256	Rice	12.0	4.5	54.0	
20	Houay Makmue Irrigation	LNT	150	Vegetable	10.0		-	
				Sugar cane	100.0		-	
21	Nam Ngene-Thonpaen Irrigation	LNT	290	Fresh soybean	100.0	8.00	800.0	
				Rice	10.0	5.0	50.0	
22	Houay Lieng Irrigation	Bokeo	270	Rice	130.0	5.0	650.0	
23	Houay Sa Irrigation	Bokeo	110	Rice	5.0	5.0	25.0	
24	Nam Chae Irrigation	Bokeo	240	Grain soybean	50.0	8.0	400.0	
Total of 4 provinces			5,487		1,239			
					22.58	% of total subproject area		
					Percentage of growing area			
					1. Rice	410.00	33.09	
					2. Greenbean	17.0	1.37	
					3. Sugarcane	314.0	25.34	
					4. Fresh soybean	177	14.29	
					5. Garlic&vegetabl	107.0	8.64	
					6. Water melon	18.0	1.45	
					7. Grain soybean	62.0	5.00	
					8. Pumpkin	49.0	3.95	
						1,154	93.14	



Commercial crop production in dry season 2021-22 at Nam Ngaene-Tongpaen subproject, LNT district, Luangnamtha province

4.3 Result of Irrigated land use and productivity of 2022 wet season in NRI-AF subprojects

As of 31 December 2022, the 2022 wet season production of the 22 subprojects in NRI-AF phase 1,2,3 and phase 4 subprojects within 4 provinces had the total production area of 8,497 ha, covering 98 percent of total command area (8,651 ha), because the phase 4 subproject was not completed.

Rice was the main crop in 2022 wet season production in each subproject. Farmers used improved rice variety namely TDK11, TDK8, TDK5, Nam Tha 1 Dor Hom, Hom Phoy, Sanpatong, improved rice from China and other local varieties with short maturity like Takhiat, Kainoy and Khao Ban Tang. The paddy yield ranged from 4.8 to 5.5 tons per hectare in 2022 wet season compared with the average yield in before project increasing from 3.35 in average of F/S of all 22 subprojects area to 5.15 t/ha in 2022 wet season detailed in Table 3. The increase of paddy yield of 53% (comes that benefit farmers receive from project like technical trainings, the using of new improved rice varieties with high yielding as the main source of yield component and through the field study tour to exchange the skills of production technique).

No.	Subproject	Province	Command Area(ha)	Crop	Before (FS-data)		2020 WS	2021 WS	WS 2022 ¹⁾		Remarks
					Area (ha)	Ave. Yield (t/ha)	Ave. Yield (t/ha)	Ave. Yield (t/ha)	Area 2)	Ave. Yield (t/ha)	
Phase 1											
1	Nam Beng (Named, Houay Lor)	ODX	386	Rice	386	3.50	5.20	5.30	386	5.40	
2	Nam Oun	ODX	420	Rice	420	3.50	5.60	5.30	420	5.35	
Phase 2											
3	Nam Hao	ODX	606	Rice	606	3.50	4.20	5.10	606	5.12	
4	Nam Tong	PSL	610	Rice	610	3.00	4.50	4.90	610	5.20	
5	Nam Ngene 2	PSL	186	Rice	186	3.00	5.00	5.20	186	5.10	
6	Nam Lue-Nam Chang	LNT	475	Rice	475	3.00	5.00	5.10	475	5.20	
7	Nam Sa	LNT	238	Rice	238	3.00	4.50	4.70	238	5.00	
8	Houay Xo2	Bokeo	216	Rice	216	3.00	4.50	5.30	216	5.20	
9	Houay Bong	Bokeo	310	Rice	310	2.80	5.50	5.20	310	5.40	
Phase 3											
10	Nam Ngaad	ODX	390	Rice	390	3.50	5.50	5.40	390	5.50	
11	Dong Nouark	PSL	267	Rice	267	2.70	5.40	5.30	267	5.30	
12	Nam Hoy-Nam Lou	PSL	250	Rice	250	4.00	5.50	5.30	250	5.50	
13	Nam Ma	LNT	360	Rice	360	3.50	5.00	5.10	360	5.00	
14	Nam Gna 2	LNT	540	Rice	540	3.50	5.20	4.80	540	5.00	
15	Nam Kha	BK	680	Rice	680	3.50	4.80	5.00	680	5.10	
16	Nam Satone	BK	312	Rice	312	3.50	4.20	4.30	312	4.80	
Phase 4											
17	Nam Ngay-Nam Boun	PSL	140	Rice	126	3.50	5.30	5.20	126	5.40	
18	Houay Lap	PSL	126	Rice	116	3.50	5.20	5.30	116	5.20	
19	Nam Gna1&3	LNT	497	Rice	472	3.50	4.80	5.00	472	4.80	
20	Nam Tha3	LNT	859	Rice	809	3.50	5.00	5.00	809	5.00	
21	Nam Tin2	BK	573	Rice	543	3.50	5.00	5.10	543	5.20	
22	Houay Sat2	BK	210	Rice	185	3.50	4.50	4.60	185	4.80	
Total of 4 provinces			8,651		8,497	3.36	4.94	5.04	8,497	5.15	
							Yield: 47% increased from FS	Yield: 50% increased from FS	98% Yield: 53% increased		
Note: 1) summarized the data from PPO report in November 2022 2) Phase 4 was not completed in wet season 2022											

4.4 Result of irrigated land use and productivity of 2021-22 dry season for phase 1, 2, 3 and 4 subprojects in NRI-AF

The Result of production implementation in 2021-22 dry season was 7 of 22 subprojects and covered 474 ha, equivalent to 5.5 percent of total command area (8,651ha). The main growing crops in dry season excepted rice were grain and fresh soybean, watermelon, pepper, green bean, garlic and leaf vegetables, detailed in Table 4.

Table 4 : Result of irrigated land use and productivity in 2021-22 dry season for phase 1, 2 and 3 and phase 4 subprojects in NRI-AF								
No.	Subproject	Province	Command Area(ha)	Crop	2021-22 Dry season		Total (t)	Remarks
					Area (ha)	Average yield (t/ha)		
Phase 1								
1	Nam Beng	ODX	386	Rice	4.0	5.3	21.2	
				Grain soybean	108.0	2.3	248.4	
				Garlic/vegetables	73.2	3.8	278.2	
				Green bean	1.2	15.0	18.0	
				Water melon	4.0	22.0	88.0	
				Sweet corn	15.0	12.0	180.0	
				Garlic	30.0	3.8	114.0	
2	Nam Oun	ODX	420	Rice	8.4	5.0	42.0	
				Grain soybean	68.0	2.2	149.6	
				Water melon	38.0	20.0	760.0	
Phase 2 ¹⁾								
3	Nam Hao	ODX	606	Rice	4.5	5.00	22.5	
				Vegetables	20	4.00	80.0	
				Tobacco	1.3		-	
4	Nam Tong	PSL	610	Garlic and leaf veget.	20	4.00	80.0	
5	Nam Ngene 2	PSL	186	Pepper	14	8.00	112.0	
				Greenbean	14	10.00	140.0	
6	Nam Lue-Nam Chang	LNT	475		Construction			
7	Nam Sa	LNT	238		Construction			
8	Houay Xo2	Bokeo	216		Construction			
9	Houay Bong	Bokeo	310		Construction			
Phase 3 ¹⁾								
10	Nam Ngaad	ODX	390	Rice	15.0	5.0	75.0	
				Grain soybean	22.5	2.0	45.0	
				Vegetables	3.0	5.0	15.0	-
11	Dong Nouark	PSL	267		Construction			
12	Nam Hoy-Nam Lou	PSL	250		Construction			
13	Nam Ma	LNT	360		Construction			
14	Nam Gna 2	LNT	540		Construction			
15	Nam Kha	BK	680	Rice 1)	10.0	5.0	50.0	
16	Nam Satone	BK	312		Construction			
Phase 4								
17	Nam Ngay-Nam Boun	PSL	140		Construction			
18	Houay Lap	PSL	126		Construction			
19	Nam Tha3	LNT	859		Construction			
20	Nam Gna1 and 3	LNT	497		Construction			
21	Houay Sat2	BK	210		Construction			
22	Nam Tin2	BK	573		Construction			
Total of 4 provinces			8,651		474.1			
					5.5		% of total area	
Note: 1) Rice seed multiplication in Nam Kha head work								

4.5 Result of commercial crop production of Nam Beng and Nam Oun subprojects in 2021-22 dry season at Oudomxay province

As of December 2022, PPO reported the result of 2021-22 dry season production to head quarter and summarized by project consultant, detailed in the Table 5 below.



Table 5 : Result of irrigated land use and productivity in 2021-22 dry season for Nam Beng and Nam Oun subprojects in NRI-AF, Phase I subprojects

No.	Subproject	Province	Command Area(ha)	Crop	2021-22 Dry season		Total (t)	Remarks
					Area (ha)	Average yield (t/ha)		
Phase 1								
1	Nam Beng	ODX	386	Rice	1.0	5.0	5.0	
				Grain soybean	108.3	2.0	216.6	
				Garlic/vegetables	45.2	4.0	180.8	
				Green bean	12.0	10.0	120.0	
				Sweet corn	1.0	8.0	8.0	
				Water melon	4.0	20.0	80.0	
				Tobacco	3.0	20.0	60.0	
2	Nam Oun	ODX	420	Rice	8.4	5.0	42.0	
				Grain soybean	56.0	2.0	112.0	
				Water melon	38.0	20.0	760.0	
	Total		806		277		1,584.4	
34.4% of ommand area								

Watermelon, onion and soybean production in 2021-22 Dry season at Nam Beng and Nam Oun subprojects, ODX



4.6 Seasonal Farmer Production Group (FPG) establishment and crop production in 2021-22 dry season under contract farming for NRI and NRI-AF project.

PPO together with DCOs established 14 farmer production groups (FPG) covered the group member of 335 persons in 9 subprojects for NRI and NRI-AF in dry season 2021-22 grew rice and commercial crops under contract farming with the total area of 282ha as in table below:

No.	District/Project	NRI project	NRI-AF project	Command area (ha)	FPG name/ Crop	No. of FPG	Group member	Cropping area (ha)	Yield (t/ha)	T Total Yield (ton)	Production form	Investors	Contracted price (kip/ton)	Total incomes
1	Bontai													
	Nam Lan	x		82	Greenbean	1	45	5.0	10.0	50.0	2+3	Bounpanh	2,200,000	110,000,000
					Pumpkin	1	31	14.0	37.0	518.0	2+3	Bounpanh	1,200,000	621,600,000
	Nam Ngene 2	x		186	Pepper	1	35	14.0	8.0	112.0	2+3	Bounpanh	2,500,000	280,000,000
					Greenbean	2	40	14.0	8.0	112.0	2+3	Bounpanh	2,000,000	224,000,000
2	Hun													
	Nam Oun		x	420	Water melon	1	45	38.0	20.0	760.0	2+3	Ji Thu	1,000,000	760,000,000
3	Beng													
	Nam Beng		x	386	Greenbean	2	4	12.0	10.0	120.0	2+3	Ji Thu	2,000,000	240,000,000
					Water melon	1	5	4.0	20.0	80.0	2+3	Ji Thu	1,000,000	80,000,000
					Sweet corn		2	1.0	8.0	8.0	2+3	Ji Thu	2,500,000	20,000,000
4	LNT													
	Hongkong	x		155	fresh soybean	1	42	27.0	9.0	243.0	1+4	Lao-China co.ltd		-
	Nam Ngene-Thongpaene	x		290	fresh soybean	1	56	100.0	9.0	900.0	1+4	Lao-China co.ltd		-
	Nam Gngang	x		355	fresh soybean	1		23.0	9.0	207.0	1+4	Lao-China co.ltd		-
5	Houayxai													
	Nam Tin			500										
	Nam Pouk			236										
	Nam Chae			240										
6	Phaoudom													
	Nam Kha1 head work		x	680	Rice seed prouction	1	10	10.0	5.0	50.0	2+3		3,000,000	150,000,000
	Nam Haad head work	x		150	Rice seed prouction	1	20	20.0	5.0	100.0	2+3		3,000,000	300,000,000
				3,680		14	335	282.0		3,260.0				2,785,600,000

5. The Investors for commercial crop production in 2021-22 dry season in NRI and NRI-AF subprojects in Phongsaly, Oudomxay, Luangnamtha and Bokeo province

Name Investor	crop	roposal growing Area (ha)	Production form	Province
1. Bounpanh Co.ltd.	Green bean, pumpkin and pepper	47	1+4	PSL
2. Ji Thu	Water melon, green bean and sweet corn	55	2+3,1+4	ODX
3. Lao-China Co.ltd	Fresh soybean	150	1+4	LNT
5. N. Haad-H. Lieng WUGA	Rice seed production	30	2+3	Bokeo
Total		282		

Commercial crop production under contract farming in dry season 2021-22



Sweet pepper production invested by Bounpanh Co.ltd in DS 2021-22 at Nam Ngene subproject (PSL)



Green bean and Pumpkin production invested by Bounpanh Co.ltd in DS 2021-22 at Nam Lan subproject (PSL)

