

**Nam Theun 2 Hydroelectric Project**

**Project Implementation Plan**

**Part B: Social Activities**

**Chapter 3: Nakai Plateau Resettlement**



## Part B: Social Activities

### Chapter 3: Nakai Plateau Resettlement

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## Acronyms and Abbreviations used in this Chapter

AIP	Activities Implementation Plan
CA	Concession Agreement
COD	Commercial Operating Date
DRWG	District Resettlement Working Group
FC	Financial Closure
FLUPAM	Forest and Land Use Planning, Allocation and Management
GOL	Government of Lao PDR
LAG	International Advisory Group
NPVFA	Nakai Plateau Village Forestry Association
NTFP	Non Timber Forest Product
PAP	Project Affected Person
PVH	Potentially Vulnerable Households
RA	Resettlement Area
RC	Resettlement Committee
RMU	Resettlement Management Unit
RO	Resettlement Office of the Company
SDP	Social Development Plan
SERF	Social and Environmental Remediation Fund
STEA	Science, Technology and Environment Agency
UXO	Unexploded Ordinance
VG1	Village Group 1
VG2	Village Group 2
VRC	Village Resettlement Committee
WBS	Work Breakdown Structure

## 1 Introduction

This chapter relates to the following Project Zones:

- Zone 1: Inundation Area: the area below 538m on the Nakai Plateau to be inundated by the reservoir; approximately 450 km<sup>2</sup> at full supply level (538m) and 108 km<sup>2</sup> at minimum operating level; and
- Zone 3: Resettlement Area: 208 km<sup>2</sup> along southern rim of Nakai Reservoir selected for resettlement following consultation with affected households and GOL. 58 households will be relocated to Nam Pan in Bolikhamxai Province)
- Zone 2: resettlers will also have the right to use areas on the northern shore of the reservoir during and after the transition period.

The proposed resettlement zone of 208 km<sup>2</sup> is situated on the rim of the Nakai Plateau escarpment on the southern edge of the Nakai Reservoir. At its northern end, the resettlement area abuts the Nakai Nam Theun Phou Hin Poon (NNT-PHP) Corridor, which links with the NNT-NBCA and the Phou Hin Poon NBCA. This zone currently consists of a mix of primary and secondary forest. This area will also be affected by some construction activities such as construction of the intake structure, some of the underground works, the portion of Road 8B which is to be relocated on the southern edge of the Nakai Reservoir and some construction camp activities.

### 1.1 Issues

A total of 17 villages/hamlets and more than 6,000 people<sup>1</sup> on the Nakai Plateau will be impacted by the Project, with the primary issue being inundation of houses and agricultural areas as a result of creation of the NT2 reservoir.

Households eligible for assistance under the Resettlement Plan are those counted during the **2003 census**, plus natural growth in the interim period between the census and the date of resettlement (relocation of first group to commence in dry season 2005-2006). An allowance of 3% per annum for natural growth was assumed for estimation purposes. Natural growth includes children in registered households who may have formed new families following the initial registration process, but excludes the relatives of a spouse who previously resided outside the area. Additional households and persons resulting from migration to the area after the 2003 census are also not eligible for assistance.

Cultural heritage is an issue requiring careful attention. Transport or replacement of religious structures and recovery and relocation of archaeological and historical artefacts will apply wherever appropriate. The issue is discussed in Chapter 1: Project Lands; however measures described in that chapter are also applicable to Nakai Plateau resettlement.

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<sup>1</sup> The 2003 Census figure was 5,678 (SDP Vol 2 10.4)

## 1.2 Overall Objectives

The objectives and form for the Resettlement Program have been developed in the SDP. NTPC's Social Obligations for the Nakai Plateau Resettlement Program are documented in the Concession Agreement Sch 4, and the Concession Agreement Section 30.

The overall objective of the Resettlement Program includes the targeted improvement / compensation and replacement of losses for all persons affected by the project on the Nakai Plateau, in the form of housing and/or livelihood development, as appropriate, and with particular attention and regard paid to gender issues, ethnic minorities and vulnerable people.

The CA Schedule 4 Part 1, Section 3.1 lists the Resettlement Objectives being to:

- (a) ensure that all Project Affected Persons promptly receive their entitlements under clause 15;
- (b) ensure that Resettlers have their income earning capacity enhanced and achieve the Household Income Target, with adequate support being provided by the parties during the Resettlement Implementation Period;
- (c) materially improve Resettler livelihoods on a sustainable basis;
- (d) restore livelihoods of Project Affected Persons (other than Resettlers who are covered by paragraph (c)) on a sustainable basis;
- (e) have the Project Affected Persons participate in the consultation, planning and design process of their new settlement and production areas;
- (f) apply special measures as required towards ethnic minorities and vulnerable persons to take care of their needs and foster self-reliance and to improve their socio-economic status;
- (g) provide for the construction of infrastructure in the Resettlement Area in accordance with the standards set out in this Part for the best interests of the local population and the population in and around the Resettlement Area;
- (h) make replacement land available to all those interested with cash compensation only to be considered for those with specific plans to permanently move out of the district;
- (i) conceive and execute resettlement and rehabilitation plans as specific development plans; and
- (j) comply with the NT2 Resettlement Policy.

Measures adopted will provide development opportunities to establish sustainable livelihoods and to improve health, education and other service facilities. The Project

will also provide local and regional organisations will the necessary support and training need to improve performance.

All of the key parties: GOL, NTEC and NTPC, the financiers, and most of all, the people who live in the project area, have an interest in ensuring that resettlement is implemented in such a way that all families involved are better off as a result of the Project.

the SDP lists the following Resettlement Provisions as guiding principles for achievement of the Resettlement Provisions:

- (i) Funding is to be assured, with the partners agreeing that the SDP is to be fully financed by the Project as an essential expenditure;
- (ii) Resettlement planning to be integrated with the general project design from the earliest stages of project preparation;
- (iii) GOL to develop and adopt the appropriate policies to ensure high standards of resettlement, including the development of an applicable Resettlement Policy for the Project;
- (iv) Resettled people to have their living standards and income earning capacity promptly improved to at least the national poverty level, and to be provided adequate support during the transition period;
- (v) Resettlement to be avoided or minimized wherever feasible;
- (vi) Identified gender concerns and specific women's needs and perspectives are to be considered in all components, strategies and planned activities;
- (vii) Women and men will have opportunity to participate in decision-making, training and the project benefits;
- (viii) Assistance from both international experts and the population directly affected is essential and will be obtained;
- (ix) People to be resettled or directly affected will play an active role in the design, planning and implementation of the RAP;
- (x) The social and cultural cohesion of villages will be protected and resettlement sites will be as near as possible to previous villages;
- (xi) Traditional organizational structures, religious beliefs and resource use will be incorporated into resettlement planning and implementation;
- (xii) Appropriate consultation and participatory methods are to be used, utilizing local knowledge in developing production systems that suit the people's needs and the environment and which avoid dependency on project or government agencies;
- (xiii) Housing and community buildings will be provided in all resettlement sites, and reasonable access to all weather roads provided where practicable;
- (xiv) All plateau resettler houses will have electrical connections;
- (xv) Irrigation and domestic use water will be supplied to plateau resettlers; and
- (xvi) The planning, implementation and compensation processes will be open and transparent.

An adaptive management approach will be adopted by NTPC in design and implementation of activities under the Nakai Plateau Resettlement programs, including the resettlement program itself and the associated livelihood and community development programs. This approach will include extensive and iterative community

consultation and participation, maintaining flexibility to adapt and fine tune programs to the expressed needs of the communities. Avenues of communication between the Project and stakeholders will be developed and maintained in order to ensure that their views and concerns are incorporated into project design and implementation in order to ensure sustainability and instil a sense of ownership of facilities and programs among stakeholders. The adaptive management approach is described in more detail in the following section.

### 1.3 Nakai Plateau Resettlement Communities:

Table 1 shows details of resettlement communities per SDP November 2004, while Table 2. presents demographic data from the March 2005 version of the SDP.

Table 1: Resettlement Communities

Village/hamlet	Group <sup>2</sup>	Total Households <sup>3</sup>	Eligible Households			Approx. Persons
			Housing + Livelihood	Housing Only	Livelihood Only	
<i>Khamkeut District, Bolikhamxai Province</i>						
Nam Nian	1	26	26			130
Sop Hia	1	55	55			316
<i>Nakai District, Khammouane Province – Plateau Villages</i>						
Nongboua	N/A <sup>4</sup>	30	30			157
Sop Phene	1	51	51			230
Nongbouakham	1	47	47			286
Sop on	1	93	93			429
Bouama	1	60	60			300
Phonesavang	1	30	30			159
Sopma	1	64	64			166
Done	2	116	116			726
Khone khen	2	44	44			246
Ka Oy	2	29	29			153
Nakai Neua	2	83	83			376
Nakai Tai	2	178	178			832
Thalang	2	64	64			329
Oudomsouk	2	226	0	94	28	n/avail
Phonphanpek <sup>5</sup>	2	102	0		102	472
<i>Total:</i>	<i>1</i>	<i>426</i>	<i>426</i>			<i>2016</i>
<i>Total:</i>	<i>2</i>	<i>842</i>	<i>514</i>	<i>94</i>	<i>130</i>	<i>3134</i>
<i>Total:</i>	<i>Other</i>	<i>30</i>	<i>30</i>			<i>157</i>
<i>Total:</i>	<i>All</i>	<i>1298</i>	<i>970</i>	<i>94</i>	<i>130</i>	<i>5307</i>

Source: SDP Vol 2 November 2004 – Tables 10-1, 11-1, 19-5. For reference only

Note: two hamlets (Hat Khampane and Kaeng Canao, are included in the village of Sop Ma.

<sup>2</sup> Group 1 villages located at a level that will be affected by cofferdam construction and that will need to be moved first (planned for 2005-2006 dry season); Group 2 villages located at levels such that they will not be affected until reservoir inundation (planned for 2006-2007 dry season). This is currently being reviewed and there may be more villages that require moving in the first season.

<sup>3</sup> 2003 census

<sup>4</sup> Already relocated in 2003 – Pilot Village

<sup>5</sup> Eligible for Livelihood Program only; houses will not be flooded

Table 2: Historic Demographic Data of Plateau Households (1995 – 1998), and 2003 Census and Eligible Households.

No.	Village	Historical Data				Results of 2003 Census and Eligibility							
		Social / Cultural Research Institute, February 1995	CARE Survey February 1996	PCPP Survey April 1997	1998 Census	No. HH, 2003 Census					Eligible Households		
						Emigrated households 1998-2003	Old households remaining	Naturally increased households	Immigrated households	Total	Housing + livelihood programmes	Housing only	Livelihood Programmes only
(a)	(c)	(d = a - c)	(e)	(f)	(g = d+c+f)	(h)	(i)	(j)					
1	Khone Khen	36	36	36	37	2	35	8	1	44	44		
2	Done	81	87	88	89	4	85	28	3	116	116		
3	Sop On (incl. old Nikhom 3)	62	58	62	66	2	64	27	2	93	93		
4	Ka Oy	n/a	23	24	26	4	22	4	3	29	29		
5	Phonsavang	28	29	28	25	6	19	8	3	30	30		
6	Sop Ma / Hat Khampane / Kaeng	38	34	38	47	7	40	15	9	64	64		
7	Sop Phene	40	40	38	43	4	39	10	2	51	51		
8	Boua Ma	48	39	39	53	12	41	15	4	60	60		
9	Nong Boua / Sailom / Pamanton hamlets )	28	40	35	28	0	28	2	0	30	30		
10	Phonphanpek **	n/a	n/a	51	85	16	69	21	12	102	51	51	70
11	Oudomsouk**	167	n/a	234	283	67	216	2	8	226	35	94	35
12	Nakai Tai	134	130	130	147	4	143	34	1	178	178		
13	Nakai Neua	59	58	58	67	2	65	15	3	83	83		
15	Nong Boua Kham	48	41	53	42	7	35	0	12	47	47		
14	Thalang	28	37	35	52	6	46	13	5	64	64		
16	Sop Hia	24	51	34	54	9	45	8	2	55	55		
17	Nam Nian	24	24	14	16	0	16	5	5	26	26		
	Pakkatan Mai	n/a	(w Sop Hia)	Village abandoned									
	Nya Long	n/a	4	Village abandoned									
	Tham On	n/a	12	Village abandoned									
	<b>TOTAL</b>	<b>n/r</b>	<b>n/r</b>	<b>997</b>	<b>1,160</b>	<b>152</b>	<b>1,008</b>	<b>215</b>	<b>75</b>	<b>1,298</b>	<b>1,056</b>	<b>145</b>	<b>105</b>

n/a: not available  
n/r: not relevant (due to missing data)

\*\* partially affected villages, and thus figures approximate only - to be verified

	Total, Housing Programme	Total, Livelihood Programme
	(h + i)	(h + j)
<b>Total eligible per livelihood programme, 2003:</b>	<b>1,115</b>	<b>1,075</b>

### 1.3.1 Maps

Selected resettlement maps, sourced from the Social Development Plan, are included for information on the following pages:

**Figure 1: Map of 25 Possible Plateau Resettlement Blocks as delineated in 1998 (SDP Figure 10-1).**

**Figure 2: Indicative Village Boundaries (1997) of Existing Plateau Villages, and Proposed Relocation Route and Sites (as of 2003) (SDP Figure 10-2).**

**Figure 3: General Map of Indicative Resettlement Site, Ban Nam Pan in Khamkerd District, for Tai Villagers from Sop Hia and Nam Nian (SDP Figure 10-9).**

**Figure 1: Map of 25 Possible Plateau Resettlement Blocks as delineated in 1998**

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*“Fig 1 - 25 possible plateau resettlement blocks.jpg”*

**Figure 2: Indicative Village Boundaries (1997) of Existing Plateau Villages, and Proposed Relocation Route and Sites (as of 2003)**

Note: high res picture removed from this draft to facilitate e-mailing. Low resolution version supplied for information as separate file:  
“*Fig 2 - Resettlement Map.jpg*”

**Figure 3: General Map of Indicative Resettlement Site, Ban Nam Pan in Khamkerd District, for Tai Villagers from Sop Hia and Nam Nian**

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“*Fig 3 - Nam Pan Resettlement Site.jpg*”

### 1.3.2 Population growth

This section copied from SDP March 2005:

#### **Past growth**

In general, the populations of the Plateau villages to be relocated have grown at a fairly consistent rate, although in and out migrations are probably more common on the Plateau than in other areas of rural Lao. There has been some in-migration from the Ban Lak Sao area recorded in the Bolikhamxay Province villages of Ban Nam Nian and Ban Sop Hia. There has also been a significant increase in population in Ban Oudomsouk, the Nakai District centre, from 167 households in 1995 to 283 at the time of the 1998 census. Several households from villages located on the Plateau have relocated to Ban Oudomsouk to be close to markets and services. In-migration from the Nakai Nam Theun NBCA is also a factor, although not as significant as in-migration from other areas.

As described above, the population as of August 2003 is the baseline or cut-off population of eligible households. However, by the time that relocation and the development of the modified livelihoods are initiated, these populations will have grown due to (a) births and (b) marriages. Such natural growth in the number of eligible families must be accounted for in the planning of the various livelihood programmes in the SDP.

#### **Predicted future growth**

The future projections for eligible populations for each of the housing and livelihood programs are based on the 2003 figures multiplied by an assumed average rate of natural increase in population of 3 % per annum (but not including in-migration). The eligible population projections shown in the various livelihood activity support programmes differ depending on the year that the village is actually relocated and particularly the year that the particular livelihood program comes on stream.

However, it should be noted that irrespective of predicted population increases, the housing and livelihood programs will be provided to all and any eligible persons present at the time that the actual program is implemented.

### 1.3.3 Prediction of Households eligible for Relocation and House Construction Program

This section copied from SDP March 2005:

Households eligible for new housing will be those that are predicted to be flooded by the Nakai Reservoir (plus some of the houses in the Ban Phonphanpek). This will include all households in 15 villages and two hamlets, and around 30 % of the households in Oudomsouk village.

The number of houses to actually be moved and re-established will depend on those eligible in 2003 plus the natural growth in households, up to the time of actual relocation – which will be implemented over a 2 years period. Thus, using:

- (a) the 2003 census data as the baseline or cut off date for population/household numbers;
- (b) an average growth rate of 3.0 % per year; and

- (c) the current scheduling for house relocation,  
 .. the number of households which may need relocation in 2005 and 2006 (including those already moved under the pilot village program) will be about 1,205 in total.

**Table 3: Households Eligible to Participate in Housing Re-establishment Program and Irrigated Agriculture Programme. Shading indicates number of households at time of commencement of activity for specific village.**

Village	Total Eligible HHs, cf. Mid 2003 census		Expected number of households assuming 3.0 % annual growth rate					
	Housing	Irrigation	2004		2005		2006	
			Housing	Irrigation	Housing	Irrigation	Housing	Irrigation
Khonken	44		45		47		48	
Don	116		119		123		127	
SopOn	93		96		99		102	
KaOy	29		30		31		32	
PhonSawang	30		31		32		33	
Sopma	64		66		68		70	
Sopphen	51		53		54		56	
Bouama	60		62		64		66	
Nongboua	30		31		32		33	
Phonphanpek**	51	70	53	72	54	74	56	76
Oudomsouk **	94	35	97	36	100	37	103	38
Nakai Tai	178		183		189		195	
Nakai Neua	83		85		88		91	
Nongbouakham	47		48		50		51	
Thalang	64		66		68		70	
Sophia	55		57		58		60	
Namnian	26		27		28		28	
<b>Total</b>	<b>1,115</b>	<b>1,075</b>	<b>1,149</b>	<b>1,107</b>	<b>1,183</b>	<b>1,142</b>	<b>1,219</b>	<b>1,176</b>
<b>Total eligible per year</b>	<b>30</b>		<b>0</b>		<b>453</b>		<b>722</b>	<b>677</b>

total housing: 1,205

total irrigation: 1,160

\*\* partially affected villages, and 2003 starting figure approximate only

### 1.3.4 Households eligible for the Irrigated Agriculture Program

This section copied from SDP March 2005:

The number of households to be provided with a plot of irrigated land, and to participate in other aspects of the irrigated agriculture program will again depend on (a) the natural growth of households in each village and (b) the time of relocation and development of the agricultural land.. Using an average growth rate of 3.0 % per year, and based on the current scheduling for village relocation, the number of households, which may participate in the irrigated agricultural development program, starting from 2005-2006, plus the already moved pilot village, will be about 1,160 households.

Households eligible to participate in the irrigated agriculture program will be all households from 15 Plateau villages plus about 76 households in Phonphanpek and about 38 households from Oudomsouk (as of 2006).

### 1.3.5 Households eligible for the Forestry and Fisheries Programs

This section copied from SDP March 2005:

Those eligible to participate in the Community Commercial Forestry Program will be all those villages and households affected, in some way, by reservoir flooding, including those households of Phonphanpek and Ban Oudomsouk whose land and forest based livelihoods will be impacted by the flooding.

The Forestry program has commenced already in 2004, and all villages are included in this activity as of that date, as this program is independent of the date of relocation. In 2004, the number of households to actually participate in and benefit from the forestry program was 1,107. That is, there will be 1,107 shares of the Community Forestry issued to the 1,107 eligible families. The forestry entitlement - the right to receive a dividend from the profits of forestry on the Resettlement Area activities - can be handed down from generation to generation, but sharing of an original families 'share' amongst the new generation. These shares can be inherited but not sold, and the total number of shares will remain the same.

**Table 4: Households Eligible to Participate in NT2 Forestry and Reservoir Fisheries Programs. Shading indicates population at time of commencement of activity.**

Village	Mid 2003 census	Expected number of households assuming 3.0 % annual growth rate					
		2004	2005	2006	2007	2008	2009
		Forestry					Fisheries
Khonken	44	45	47	48	50	51	53
Don	116	119	123	127	131	134	139
SopOn	93	96	99	102	105	108	111
KaOy	29	30	31	32	33	34	35
PhonSawang	30	31	32	33	34	35	36
Sopma	64	66	68	70	72	74	76
Sopphen	51	53	54	56	57	59	61
Bouama	60	62	64	66	68	70	72
Nongboua	30	31	32	33	34	35	36
Phonephanpek**	70	72	74	76	79	81	84
Oudomsouk**	35	36	37	38	39	41	42
Nakai Tai	178	183	189	195	200	206	213
Nakai Neua	83	85	88	91	93	96	99
Nongbouakham	64	66	68	70	72	74	76
Thalang	47	48	50	51	53	54	56
Sophia	55	57	58	60	62	64	66
Namnian	26	27	28	28	29	30	31
<b>Total</b>	1075	<b>1107</b>	1142	1176	1211	1246	<b>1286</b>

\*\* partially affected villages, and 2003 starting figure approximate only

Similar to the forestry program, the Reservoir Fisheries Program will come on-line at the one time (some time after reservoir filling) and all Plateau villages and households affected, in some way, by reservoir flooding and staying on the Plateau will be eligible. In 2003, the number of houses thus eligible was 1,075. The number of households to actually participate in and benefit from the fisheries program will be those eligible as of 2009, when the Nakai Reservoir will be filled and the reservoir fisheries program initiated. This is estimated to be 1,286 households.

## 1.4 Forest and Land Use Planning, Allocation and Management (FLUPAM)

This section presents the key points from the SDP Volume 2 Chapter 10, Section 10.8.1:

Forest and Land Use Planning, Allocation and Management (FLUPAM) is a process of participatory resource management planning, aimed at ensuring equitable access to forest and land resources and providing the basis for their sustainable management by local communities. The process was initiated some years ago in the Lao PDR, and has seen evolution and improvement to the stage where clear and effective guidelines and processes are now available. However, FLUPAM objectives, and also the guidelines and processes for its implementation, must be adapted to the particular situation, and the resettlement of villages on the Nakai Plateau is such a particular situation.

In the case of the Nakai plateau Resettlement Area, the major objectives of FLUPAM will be:

- to develop appropriate and balanced forest and land use zonation, with a view to sustainable management systems and productive land use in order to achieve sustainable and integrated resettler livelihoods;
- to ensure equitable access to forest and land resources for all resettler community members, and formalizing land use rights within the existing legal framework.
- to develop a partnership between villages and the Government for the joint management of forests, agriculture land, other lands and the reservoir.

Although NTRA-FLUPAM will employ many of the methods and tools which are common to standard LUP procedures, the process has been modified in a many key areas to make it more appropriate for use in Resettlement Area.

- It will have to be closely scheduled with the whole resettlement program and with the timing that the various livelihoods will be able to be initiated and developed;
- Land will initially not be allocated with temporary certificates, but rather with permanent land titles (to housing and agricultural land) and permanent use certificates to the rest of the land, to be provided within one year after relocation, or establishment of the agricultural lands;
- Rather than working in one village at a time, it will be conducted simultaneously for all the villages, or at least in two groups of north western and south eastern villages. The fact that the community networks have already being promoted over many years already, will facilitate this process;
- Swidden cultivation will not be contemplated in the Resettlement Area, as all agriculture will be sedentary and managed. Thus, monitoring of agricultural land use over time will be much more manageable (in comparison to areas where shifting cultivation is a feature);
- Unlike other areas, the forests will be intensively surveyed and managed, this facilitating (a) planning of forest use and (b) monitoring of forest use;
- While NTFP and other forest products will be allocated to each village management and utilization, the commercial timber resource will be managed jointly by all the villages, as one production forest;

- A significant portion of the Resettlement Area, around 6,000 ha or more, is currently degraded forest, and decisions as to how to develop or manage this area - for forest regeneration, for development for agriculture or grazing, or a mixture of these, can only be made over a long period of time as the productive potential of these areas and livelihoods is further tested and understood.
- Most (not all) of the RA is currently divided under the responsibilities of 9 villages - which will also be relocated into their own area villages - and the area of these villages will have to be subdivided to make room for 6 other villages relocating into the area from the other side of the plateau. Thus, the current boundaries will have to be modified and new land use arrangement will have to be renegotiated;
- The village settlement (housing) zones will be the subject of detail urban planning, except in this case village participation will be an integral part of the urban planning;
- The planning of the irrigated agriculture zones areas will also be the subject of detail design;
- The livelihoods of the villages - to which the forest, land and reservoir use planning is inextricably linked - are not their current livelihoods but the range of new (if not similar livelihoods) some of which are unknown in terms of productivity, and all of which will be progressively developed at different times, over the next 6 years.

Thus, the NTRA-FLUPAM will have to be both:

- **timely**, in that the Project construction and relocation program must follow certain timelines

and

- **flexible**, to accommodate both (a) the progressively initiating and then development of each of the livelihood options livelihoods - and (b) the change in the physical characteristics of the area with the inundation of the reservoir 3.5 years into the program, and the operation of the reservoir 5 years into the program.

Thus, the NTRA-FLUPAM will be a phased but iterative process which proceeds through various stages, some run simultaneously in each village with technical studies and livelihood development planning. While the exact processes and steps will be improved and modified over time, Table 5 provides a preliminary definition of the progressive implementation of FLUPAM in the Resettlement Area.

Table 5: Steps and Procedures for NTRA-FLUPAM in Coordination with Livelihood Development and Technical Studies

Stage	Village FLUPAM Steps	Livelihood Development Steps	Technical Studies s
<b>Stage 1. Relocation Site selection</b>	Villages preferences have been based on; - closeness to reservoir; - amount of forest; - amount of drawdown zone; - amount of agricultural land; - amount of grazing land; - current village boundaries;	<u>Consultations</u> to explain and review: > the range of livelihood options available; > the risk and benefits of these options; > the balance between options which the villages would prefer.	Technical studies; > topographic surveys; > soil survey; > irrigation design and village layout concept studies; . > forest inventories.
<b>Stage 2. Initial boundary negotiations</b>	1. Village FLUPAM orientation preparation. 2: Initial negotiations regarding realignment of boundaries, sharing of resource's etc. 3. Initial negotiations regarding use of drawdown and reservoir areas; 4 Draft initial (new) village boundaries, on (a) land (b) drawdown;; and (c) reservoir	Participatory review of Livelihood options and activities	> detailed satellite , topographic maps, reservoir maps etc provided to villages to facilitate negotiations.
<b>FOLLOWING RELOCATION</b>			
<b>Stage 3. Testing of livelihoods</b>		Commercial forestry livelihoods tested (salvage logging for 3 years). Irrigated agriculture tested in Three villages (Ban Nong Boua, Ban Bouama, Ban Phonsavang) Initiation and testing of DMC	
<b>Stage 4. Review of livelihood options and land use planning</b>	Participatory review of (a) irrigated agriculture, (b) forestry activities and (c) DMC Two levels of review: > review by pilot village themselves > review by other villages		Technical review of (a) irrigated agriculture, (b) forestry activities and (c) DMC Technical review of socio economic data of families (socioeconomic survey at FC + 3)
	Presentation of experts review Participatory planning, village by village, on the preferences for land and forest use, especially: (a) decision to go ahead with irrigated agriculture, or not (b) decision on how to manage and use degraded forest areas - grazing, DMC or forest regeneration.		
<b>Stage 5. Zonation Step 2</b>	Confirm plans for agricultural development, and then If feasible, allocate rainfed upland areas - via DMC systems - to original and new families planning for use of forest products - within villages and between villages forest and land use zonation develop regulations re land and forest use, in relation to zones		Production of good maps
<b>FOLLOWING RESERVOIR FILLING AND OPERATION OF FISHERIES: ABOUT COD + 2</b>			
<b>Stage 6. Drawdown and Reservoir</b>	<u>Drawdown zones</u> : > review villager activities in this areas > if feasible to use, then review zonation and boundaries. > allocate land, mainly to new families		1: Technical surveys and studies of (a) fisheries (b) drawdown zone 2: Technical review of socio economic data of families)
	<u>Reservoir</u> > review villager activities and fish catch		

Stage	Village FLUPAM Steps	Livelihood Development Steps	Technical Studies s
	<ul style="list-style-type: none"> <li>&gt; review zonation and allocation of villages - and rights and responsibilities of such allocation.</li> <li>&gt; review management rules and regulation</li> </ul>		
<b>Stage 7. On-going FLUPAM</b>	<p>Following the zonation and allocation of the drawdown zone and reservoir areas, FLUPAM will be undertaken on a cyclical basis, probable every 3 years</p> <p>The aim is to</p> <ul style="list-style-type: none"> <li>(a) revise the macro level zonation and allocation to competitive uses, in accordance with the requirement so the livelihoods of the reseller's, and sustainable resource utilization and management</li> <li>(b) revise land and resource management arrangements and process's</li> <li>(b) ensure the equitable access to resource</li> </ul>		

## Family and Village Livelihood planning

Family and livelihood planning is a central feature of the resettlement program, and as such will be an integral part of NTRA-FLUPAM. Family level socio-economic data already well known, and will be monitored continuously. In addition, the range of livelihood options will be both:

- tested in pilot schemes; and
- reviewed, both by specialists and by the villagers themselves.

Such experience and review will lead to choices being made about the livelihoods mixes that a family may wish to adopt, and then the way that a village wishes to use, develop and manage its village territory of land, forest, drawdown zone and reservoir.

Livelihoods in the drawdown zone will be dependant on the technical feasibility of cropping, grazing or otherwise using the area, which is influenced by:

- the operation of the reservoir, and
- the level of soil erosion or deposition in any particular.

Livelihoods in the reservoir will be basically be defined by two issues:

- the technical feasibility and productivity of fishing, and the need for fisheries management from an ecological perspective.
- the decision as to where to manage and harvest the fisheries by (a) private (household) enterprise or (b) a cooperative business enterprise.

Development of the livelihoods in the land of the Resettlement Area itself, however, is somewhat more difficult as (a) there are a range of options, (b) the relative productivity of the options is not known accurately, and (c) the villager adaptability and preferences for these options will change over time. These issues (b) and (c) will only be resolved progressively, over about 6 years.

Basically, the challenge will be to match the resource availability in the site with the gradual development of livelihoods of the resettlers, and such balancing will then lead to the required zonation. Thus, eventually, villagers must decide on the balance of the land (that land which is currently degraded forests) will be used to be used for:

- agricultural land;
- grazing land;
- regenerating forest land; or
- other uses.

A parallel choice which will have to be made is the programs (and villagers) focus on intensive irrigated agriculture or the more extensive rain fed cropping using DMC systems.

It should be noted however, that all three livelihoods are not mutually exclusive. For example, it may be possible for some, maybe many villages, to have separate areas dedicated to both irrigated and rainfed cropping systems. Silvo-pastoral systems may

be developed whereby grazing and forestry are compatible. In addition, the establishment of grass swards for grazing could be an integral part of the DMC systems.

### **Forest and Land Use and Urban Development Monitoring and Mapping**

Unlike most other development projects, the status of forests will be surveyed and monitored in detail by the NPVFA and district forestry staff. They will delineate;

- production forest areas
- conservation forest areas (mainly the sloping areas)
- degraded forest areas - which will be the subject of on going trials to define the best use of these areas - which could be regeneration forest, DMC systems or grazing, or a combination of all three
- nature tourism areas which could be undertaken in the first 2 areas above

On-going FLUPAM processes will ensure participatory review of the data (photos, maps etc,) in parallel to review of the socio-economic and livelihood development. Based on these reviews, the zonations and land use plans and regulations may be amended, as required.

## 1.5 Obligations per CA

### NTPC Obligations:

<b>Reference:</b>	<b>Description:</b>
Volume 2A, Schedule 4, Part 1, Section:	
2	Duration of the Resettlement Process
3	General Obligations of the Parties
4.1	Overview of institutional responsibilities
4.2(b) and (c)	Resettlement Plans to be prepared by RMU and the Company for review by RC
4.2(d)	Remedial action to discharge obligations.
4.3(a) (i) (ii) (iv)	Assist RMU in coordinating & planning implementation as well as day to day management of Resettlement Process and carrying out public consultations.
4.3(a) (viii)	Assist RMU in organising and facilitating the participation of resettlers.
4.3(a) (xi)	Support RMU in facilitating the relocation of the Resettlers
4.3(e)	Coordinate with RMU to prepare 6 monthly reports for RC, STEA, Panel of Experts, IAG
4.4(b)	Company assistance to DRWGs
4.5	Assist RMU to ensure new community groups, structures and institutions are established and developed
4.6	Responsibilities of the RO under direction of RC
5.1	Objective of Monitoring
5.2 (c) (d) (e)	Pre-relocation baseline survey of resettler households
5.3	Monitoring to be undertaken until Resettlement Objectives fulfilled
5.4	Internal Monitoring by the Company through the RO
5.5 (a) (d) (e)	Independent Monitoring
7.1	Survey village land areas and suitability
7.2	Plan Village Locations
7.3	Consult villages on village location and other matters
7.4	Prepare and move Pilot Village
7.5	Preparation of forest and land use plans
7.6	Preparation of detailed site and plot plans
7.7	Consult with villages on the plans
7.8	Finalise location of each household
7.10	UXO Survey and clearing
7.11	Site specific environmental plan for Resettlement Area
8.1	Obtain land certificates
8.2	Land clearing and fencing
8.3	Mechanism to distribute farm & house plots
8.4	Organise villages for relocation
8.5	Design & construct infrastructure & equipment
8.6	House Construction
8.7	Physical Relocation
9.1	General Principles – Livelihood Development Planning
9.2	Demonstration Farm
9.3, 9.4	Establish & Evaluate three pilot farms
9.5	Identify Forest resource
9.6	Community Forestry Program
9.7	Livestock Improvement Program
9.8	Agricultural Development Program
9.9	Consult with villages on livelihood packages
9.10	Fisheries Development & Management Program
10.1	Clear & prepare rice areas
10.2	Training for resettlers in new farming techniques

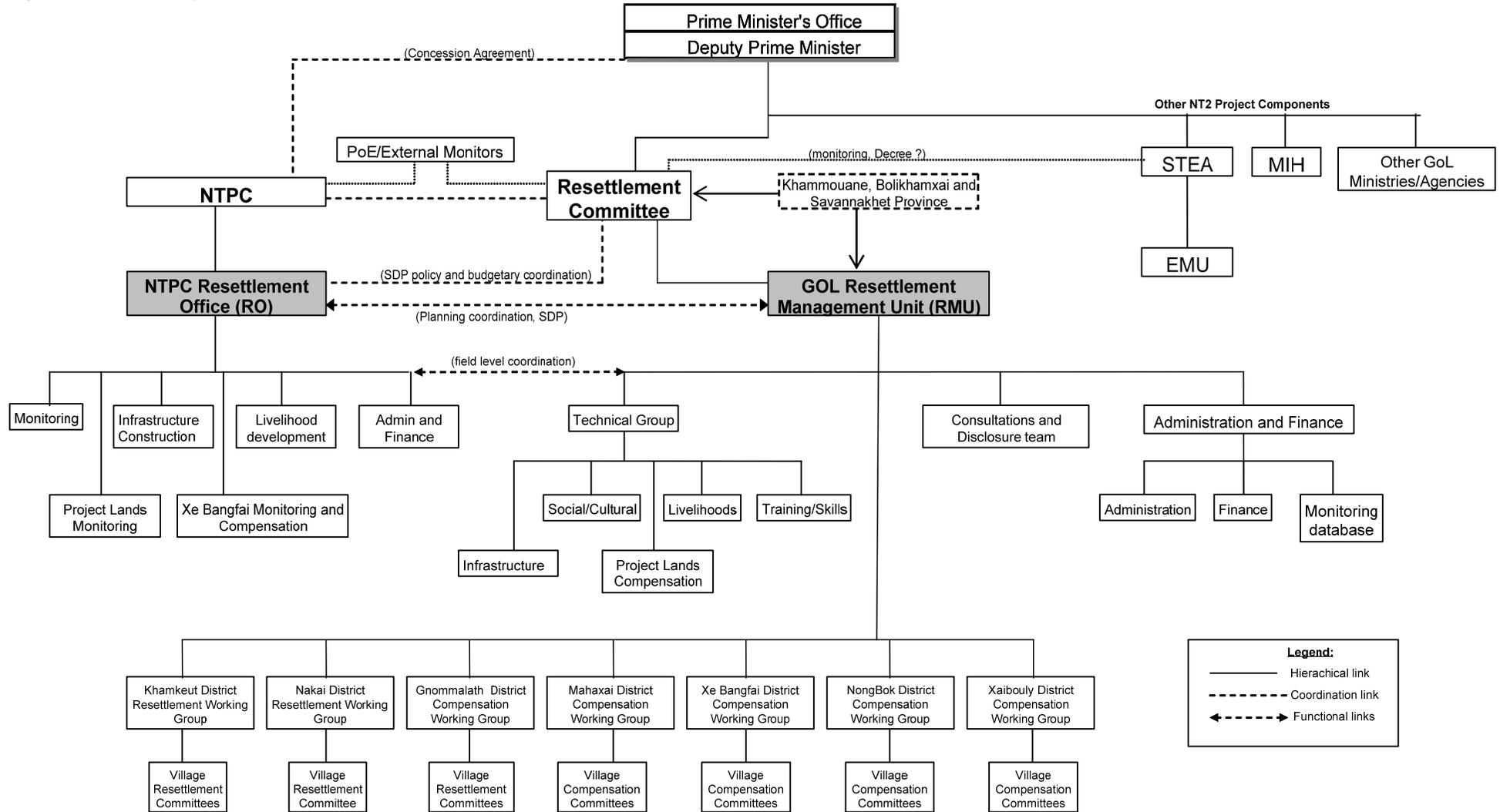
<b>Reference:</b>	<b>Description:</b>
10.3	Provide farm equipment
10.4	Training in other income generation activities & technical support
10.5	Provide other livelihood equipment
11.2	Training needs assessment with technical assistance for RMU, DRWGs and VRCs ; develop training program.
11.3	Assist RMU develop Pre-relocation Activities Plan
11.4	Assist RMU develop Community Development Plan
12.1	Regional Health Program
12.2	Resettlers Health Program
12.3	Provide income support & employment opportunities
14	Grievance Procedures
15.1	Plateau Resettlers' Entitlements
16.1(a) (b)	Company's funding obligation
16.2	Funding of Resettlement Works to be Carried out prior to FC
16.3	Funding of Resettlement Works to be Carried out after FC
16.4	Establishment of the Social and Environmental Remediation Fund
16.5	Formula for Escalation of the Social and Environmental Remediation Fund Payment
16.6	Summary of Company Funding for Resettlement Activities
16.7	Adaptive Implementation
Attachment A	NT2 Resettlement Policy

**GoL Obligations (for reference):**

<b>Reference:</b>	<b>Description:</b>
Volume 2A, Schedule 4, Part 1, Section:	
3	General Obligations of the Parties
4.1	Overview of institutional responsibilities
4.2	GOL Resettlement Committee
4.3	GOL Resettlement Management Unit
4.4	GOL District Resettlement Working Groups (DRWGs)
4.5	GOL Village Resettlement Committees (VRCs)
5	Monitoring of the Resettlement Process
7	Village Development: Planning Stage
8	Village Development: Implementation Stage
9	Livelihood Development: Planning Stage
10	Livelihood Development: Implementation Stage
11	Community Development: Planning Stage
12	Community Development: Implementation Stage
14	Grievance Procedure
15.1	Plateau Resettlers' Entitlements
16	Funding Arrangements
Attachment A	NT2 Resettlement Policy

## 1.6 Organisation

Figure 4: Overall Organization for the Social & Resettlement Components

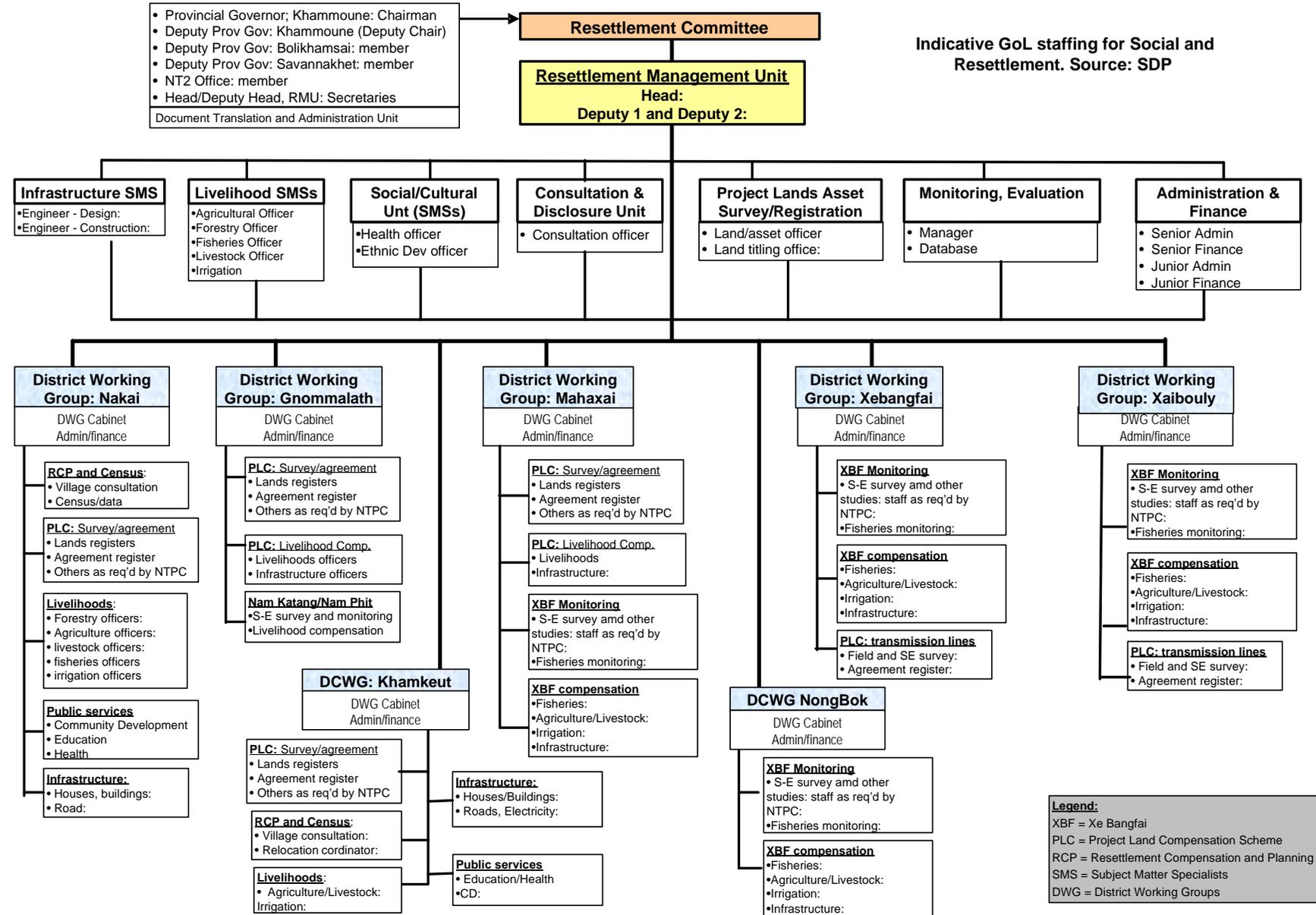


Note: The link between RO and RMU includes joint planning, implementation and monitoring

Source: SDP

Figure 5: Detailed Organization of GoL for the Social and Resettlement Components

Source: SDP



### 1.7 Schedule

Schedules and key dates for the various component tasks are given in the Sections titled “Scope of Work” for the respective components.

Generally, the schedule must accommodate:

- Inundation of reservoir 3.5 years after FC
- Operation of reservoir 5 years after FC

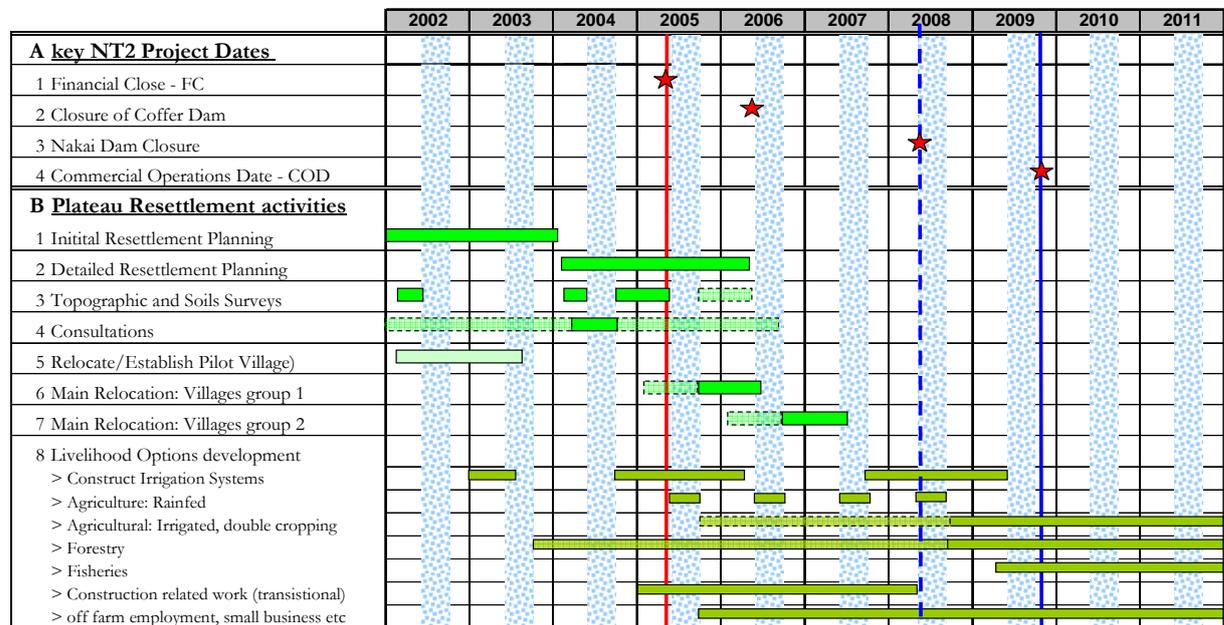
Relocation of Villages has been scheduled over two successive dry seasons (SDP 19.6):

- Group 1 villages in 2005-2006 dry season
- Group 2 villages in 2006-2007 dry season

The implementation dates of the main components are:

<b>Component:</b>	<b>Start</b>	<b>Finish</b>
Resettlement Infrastructure	Pre FC	Q4/08
Forestry Development Plan	Pre FC	ERP <sup>6</sup>
Agriculture and Livestock Development Programme	FC	ERP
Nakai Reservoir Fisheries	Q1/07	ERP
Community Development Plan	Pre FC	ERP

**Table 6: Schedule of Key Hydropower Construction Activities Relevant to Plateau Resettlement, and of Key Plateau Resettlement Programs.**



Copied from SDP Table 18.1

**Note:** The Livestock Program under the Livelihood Options development will follow a similar timeline to the Agriculture Program. This table is indicative only as some dates have changed since the preparation of the SDP– more precise details are given in the Sections titled “Scope OF Works and Key Dates” in the sections that follow.

<sup>6</sup> End of Resettlement Period

## 1.8 Budget

B/L		Budget (USD)			Limited by:	
		To COD	After COD	Total	Scope	Cost
A	External Monitoring	300,000	335,000	635,000		√
B	Studies and Surveys	2,500,000		2,500,000	√	
C1	UXO Clearance	699,000		699,000		
C2	Grievance	500,000		500,000		√
F	RMU + DRWG + RC Activities	2,710,800	1,137,100	3,847,900		√
F2	Training of resettlers, farming & income generating activities	346,700	91,400	438,100		√
G	Clearance of village sites, house construction and provision of farm equipment	5,443,800	69,900	5,513,700	√	
H	Design and construction of infrastructure and equipment	7,800,200		7,800,200	√	
O	Community Forestry Program	619,100		619,100		√
P	Livestock Improvement Program	458,100	89,000	547,100		√
Q	Agricultural Development Program	674,100	129,400	803,500		√
R	Reservoir Fisheries Development Program	264,400	292,800	557,200		√
S	Provide other Livelihood Equipment	996,900		996,900	√	
T	Community Development	570,300	263,300	833,600		√
T3	Income Support	367,300	297,000	664,300	√	
	<b>Totals</b>	<b>24,750,700</b>	<b>2,704,900</b>	<b>26,955,600</b>		

## 1.9 Reporting and Monitoring

### Reporting per Progress Reports

The following will be reported by NTPC for all sections of this chapter:

<b>Component:</b>	<b>Monitor and Report:</b>
Infrastructure:	Progress against schedule
Livelihood:	Consultation
	Activities
	Key Indicators based on SDP recommendations (to be proposed)
Budget:	Payments vs. Budget (curve)

### NTPC Internal Monitoring and External Monitoring:

The objectives of internal monitoring are to:

- confirm that the baseline information of all affected persons has been carried out after detailed design, all losses inventoried, and that valuation of assets lost or damaged,
- follow the progress of the provision of compensation, resettlement and other rehabilitation entitlements, and that these are in accordance with the provisions of the Resettlement Policy and the approved Resettlement Plan;
- ensure that resettlement sites and houses are ready for occupancy before relocation; and
- identify any problems with implementation and report these back to management for timely action;
- monitor the provision of staff resources, including the appropriateness of the skills, skills levels and the scheduling of the same;
- monitor funds disbursement, and assess if they are sufficient for their purposes, and that such funds are used in accordance with the provisions of the Resettlement Plans; and
- ensure that resettlement has been completed and livelihood activities in place before commencement of inundation of the reservoir.

Internal monitoring will be carried out on the basis of:

- The agreed Social Development Plan – The Resettlement Plan and Ethnic Minority Development Plan (EMDP) for the Nakai Plateau
- Detailed village implementation plans for Plateau villages
- The Concession Agreement Schedule 4, Part 1 and 4
- The IFIs' policies on involuntary resettlement and indigenous peoples

- Key Monitoring Indicators
- Environmental Plans and Monitoring Indicators to be developed for resettlement villages

The following will be monitored on a continuous basis:

- The number of PAPs by category of impact per component and project area, the status of compensation payment and relocation and income restoration for each category;
- The number of vulnerable households, women-headed households;
- The status of various baseline data collection activities, detailed village design and planning activities, detailed implementation activities;
- The amount of funds allocated for operations or for compensation, resettlement, rehabilitation, and the amount of funds disbursed for each;
- The number of complaints and grievances and eventual outcome and any outstanding issues requiring management or IFIs' assistance;
- The number of consultation meetings, significant issues requiring action, action taken and any outstanding issues requiring management assistance;
- Implementation problems;
- Revised actual resettlement implementation schedule.

The general approach for internal monitoring will consist of the following activities by the RMU/ RO Monitoring Team:

- maintain and regularly update a data base (including baseline figures) of socio-economic, health, assets, entitlements and compensation data
- maintain and regularly update a data base of all consultations with affected people;
- maintain and regularly update a data base of all grievances made by affected people;
- maintain and regularly update schedules of resettlement planning and implementation;
- recommend to management appropriate adjustments to make the resettlement program more effective.

The RMU/RO Monitoring team will be made up of:

- One scheduling/monitoring/database officer
- Program officers responsible for each program
- Ethnic minority, gender, and consultation specialists
- Village infrastructure, agriculture, and community development officers

**The following table shows NTPC's monitoring obligations relevant to this chapter as per the Concession Agreement:**

<i>Monitoring Activity:</i>	<i>Responsible</i>	<i>CA Reference</i>
<i>Internal:</i>		CA Vol 2A, Sch.4, Part 1:
Monitor the implementation of RO obligations relating	RO	4.6 (a)

<b>Monitoring Activity:</b>	<b>Responsible</b>	<b>CA Reference</b>
to the Resettlement Process under CA		
Provide quarterly status reports to RC	RO	4.6 (b)
Provide timely information to the POE and other external and independent monitoring teams	RO	4.6 (g)
Take the lead in data analysis	RO	4.6 (h)
Socio-economic baseline survey of all resettler households prior to relocation, to serve as a reference point for external monitoring	RO	5.1 (c) (d) (e)
Internal monitoring by company: performance of Company's obligations; expenses of Company and expenses of GOL in accordance with agreed budget. Regular reports to RMU and RC as required.	RO	5.3 (a) (c) (d), 16.2, 16.3
Report for each plan period, showing completed tasks and corresponding funding of resettlement activities carried out by GOL	RMU	16.3(b)
Monitor and oversee the implementation of the obligations of both the GOL and the Company with respect to the resettlement process	GOL through RC	4.2 (a) (vi)
Monitoring of implementation of obligations of each party, incl. physical progress & time schedule	RMU	4.3 (ix)
6 monthly reports to RC, STEA, the Company, POE, IAG and other institutions involved.	RMU	4.3 (e)
Progress reports to RMU and district governments on relocation, rehabilitation, compensation and development activities.	DRWGs, with assistance from the Company.	4.4 (b) (v)
Monitoring and evaluating the resettlement process at village level	VRCs	4.5 (e)
Monthly progress reports for each village to RMU incl. funds allocated & spent, activities completed, development tasks completed, community activities completed.	GOL through VRCs and DRWGs	5.4 (a)
Progress in preparation for move, move, post move settling-in, livelihood & community development  GOL's expenses  Expenses of Company after Financial Close	GOL through RMU	5.4 (b) (c) (d)
RC has the right to review and approve all resettlement works, completed and proposed, as well as budgets, prepared by the Company and RMU – quarterly, six monthly, annual or “ad-hoc”	RO and RMU	4.2 (b)
<b>External:</b>		
Review resettlement activities at least 6 months before expiry of Resettlement Implementation Period	Panel of Experts, at Company's cost	2.3
Check adequacy of: pre-project socio-economic & health surveys; pre-project baseline fish studies.  Monitor Resettlement Process annually and as required by RC, incl: obligations of each party under CA, social & economic conditions of resettler households,	GOL through RMU in consultation with Company to engage independent monitoring survey, at the Company's cost.	5.5(a) (i)-(iv)

## 1.10 Factors to be Considered

### Initial Lessons Learned for the Resettlement Programme (copied from SDP):

It is still too early to seriously evaluate the success and/or failings of the pilot village. However, some valuable lessons can be learned already from the development, construction and livelihood activities to date and these include the following:

- While it depends on each village, it appears that they may prefer that households are grouped by clan and possibly in a cluster model. If the cluster model is selected by villagers, then this may require a reassessment of the assumptions and conclusions of the demonstration farm results;
- Special provisions with regards to land plot allocation for disadvantaged households (such as households with a single mother, widow, labour deficit, elderly or infirm) should be provided as needed;
- While difficult to achieve in practice, each family should be provided with land of similar slope and soil conditions;
- At least domestic water supply must be available in the relocation sites at, or just before, moving to that site;
- Electricity is a strong attraction for villagers to move, because this will be one of the most important factors to make possible water supply to irrigate crops as well as for other household utilities;
- When performing topographic surveys for new village areas, particular attention must be paid to the 538 m contour as the lowest level for permanent agriculture, and 540 m contour as the lowest level for housing construction;
- **Village planning, in terms of reaching agreements on the physical plan and layout of all the infrastructure improvements, is time-consuming. This should be recognized in scheduling the planning for the remaining villages. Both the RMU and the RO will allocate staff accordingly;**
- The method for actually distributing water to the agricultural fields is a difficult and as yet unresolved issue. This is partly because it will depend on the slope of each field, which is likely to vary considerably over the resettlement area. It will also depend on the eventual choice of crops and cropping systems found to be the most economic; and
- It will take at least 2 growing seasons – 2 wet seasons and 2 dry seasons – for villagers to become familiar with, and test out the new cropping systems. Only after this trial period will they have a better understanding of what the long term cropping system that is the most effective and economic.

#### Note:

In accordance with the principles of the Adaptive Management Process, the intention is that this section be expanded as the Project Implementation progresses, for the purposes of providing additional guidance on implementation for key NTPC staff.

## 2 Infrastructure

### 2.1 Topography, Location, Layout Design

#### 2.1.1 Issues

A total of 17 villages/hamlets and approximately 6,200 people on the Nakai Plateau will be affected by the Project, with many experiencing inundation of houses and/or loss of livelihood producing assets. Compensation, resettlement and livelihood development will be provided in accordance with the CA. Appropriate and acceptable relocation sites need to be identified, and village layouts designed in consultation with the communities, in accordance with the following objectives.

#### 2.1.2 Objectives / Measures

To identify alternative locations for villages to meet criteria per CA incl:

- Strong villager preference to remain on plateau
- Social, agricultural and access considerations
- Ethnic identity
- Cultural preferences
- Availability of land
- Adequate contiguous areas of flat or gently sloping land (<15%)
- Presence of high point for header tank
- Soil suitability
- Forest and Land Use Planning, Allocation and Management (FLUPAM) (SDP Volume 2 10.8.1, Table 10-7)

#### 2.1.3 Obligations per CA

##### NTPC Obligations

<b>Reference:</b>	<b>Description:</b>
Volume 2A, Schedule 4, Part 1, Section:	
7.1.1, 7.1.2	Detailed surveys for suitability of village land areas
7.2.1	Prepare village location options
7.2.2	Ensure consultative and participatory approach in planning of village layouts (with RMU)
7.3.1	Develop village layout options through participatory planning (with RMU) and prepare technical plans to reflect village preferences
7.3.2	Assist RMU to consult Resettlers on development of Village Development Plans prepared by RO, and seek input from Resettlers.
7.3.3	Preference of resettlers to be primary factor in determining size and location of resettlement villages.
7.4.1	Prepare and move pilot village
7.5.	Preparation of forest and land use plans for each village
7.6.1	Prepare detailed site and plot plans
7.7.2	Revision of Detailed Village Plans to reflect community consultations

<b>Reference:</b>	<b>Description:</b>
7.8.1	Assist RMU to ensure the final choice of site is made by Resettlers in consultation with Company and GOL
7.8.2	Requirements to be satisfied prior to confirmation of sites
7.11.1	Ensure construction contractors prepare and implement site specific environmental plans for each site, in accordance with standards specified in CA, Schedule 4, Part 2
8.1.1	Provide all information needed by Khammouane Provincial Government to grant land certificate
11.2.1	Assist RMU develop training program for RMU, DRWGs and VRCs
11.3.1	Assist RMU with pre-relocation activities plan

#### GoL Obligations (for reference)

<b>Reference:</b>	<b>Description:</b>
Schedule 4, Part 1 Section	
7.3.4	RMU to advise RO of Resettlers' input and advice.
7.5.1	Nam Theun 2 Land Decree
7.7.1	RMU to consult with Resettlers on Detailed Village Plans, provide rationale and relevant data, and seek input and advice
7.9.1	RMU to inform each resettler of new location
8.1.2	RMU to liaise with Khammouane Provincial Government to obtain land certificate
8.1.3	GOL obligations regarding land titles
11.1.1	Set up Village Resettlement Committee in each village

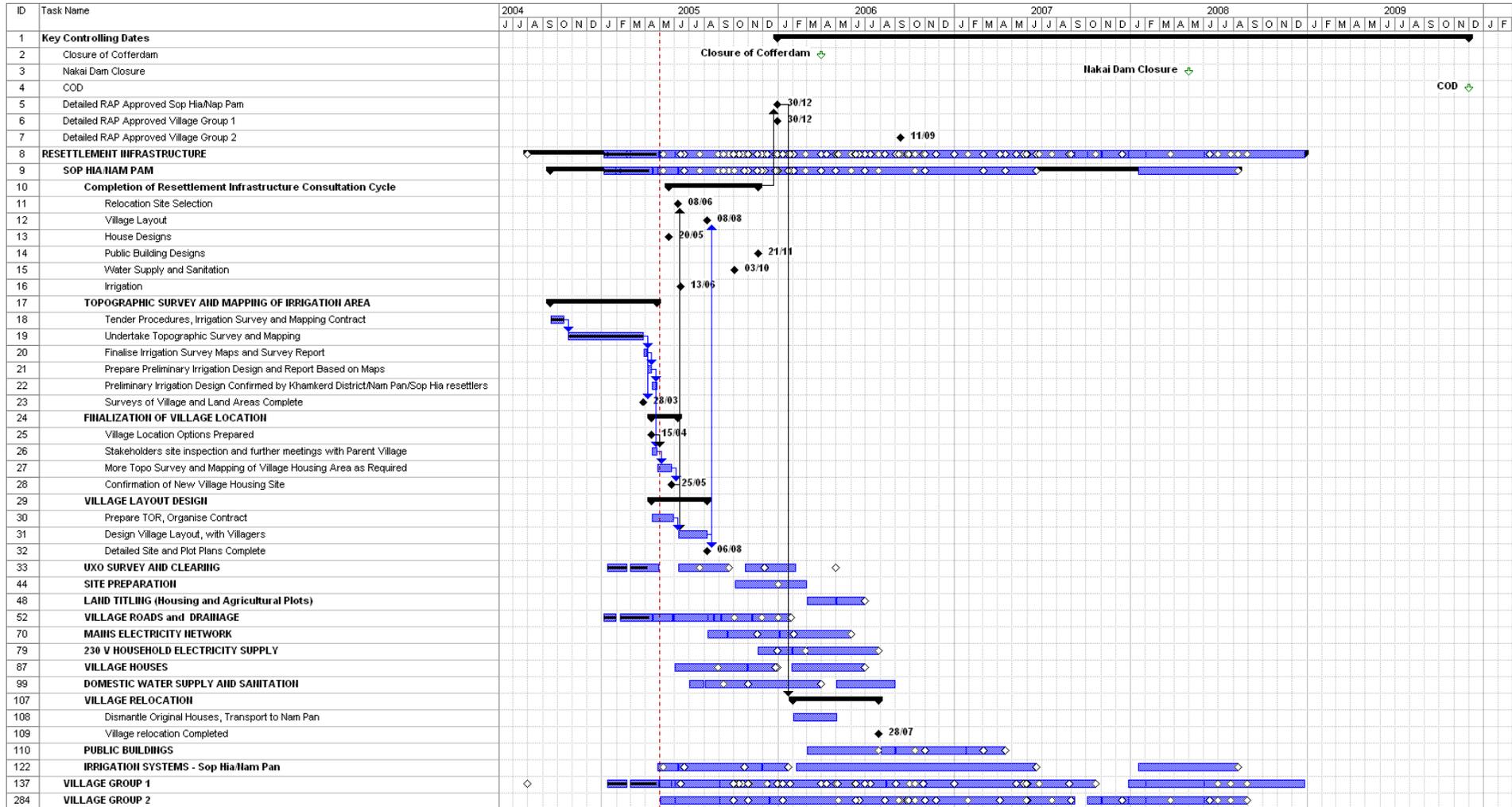
#### 2.1.4 Scope of Work and Key Dates

◆ denotes milestone(s)

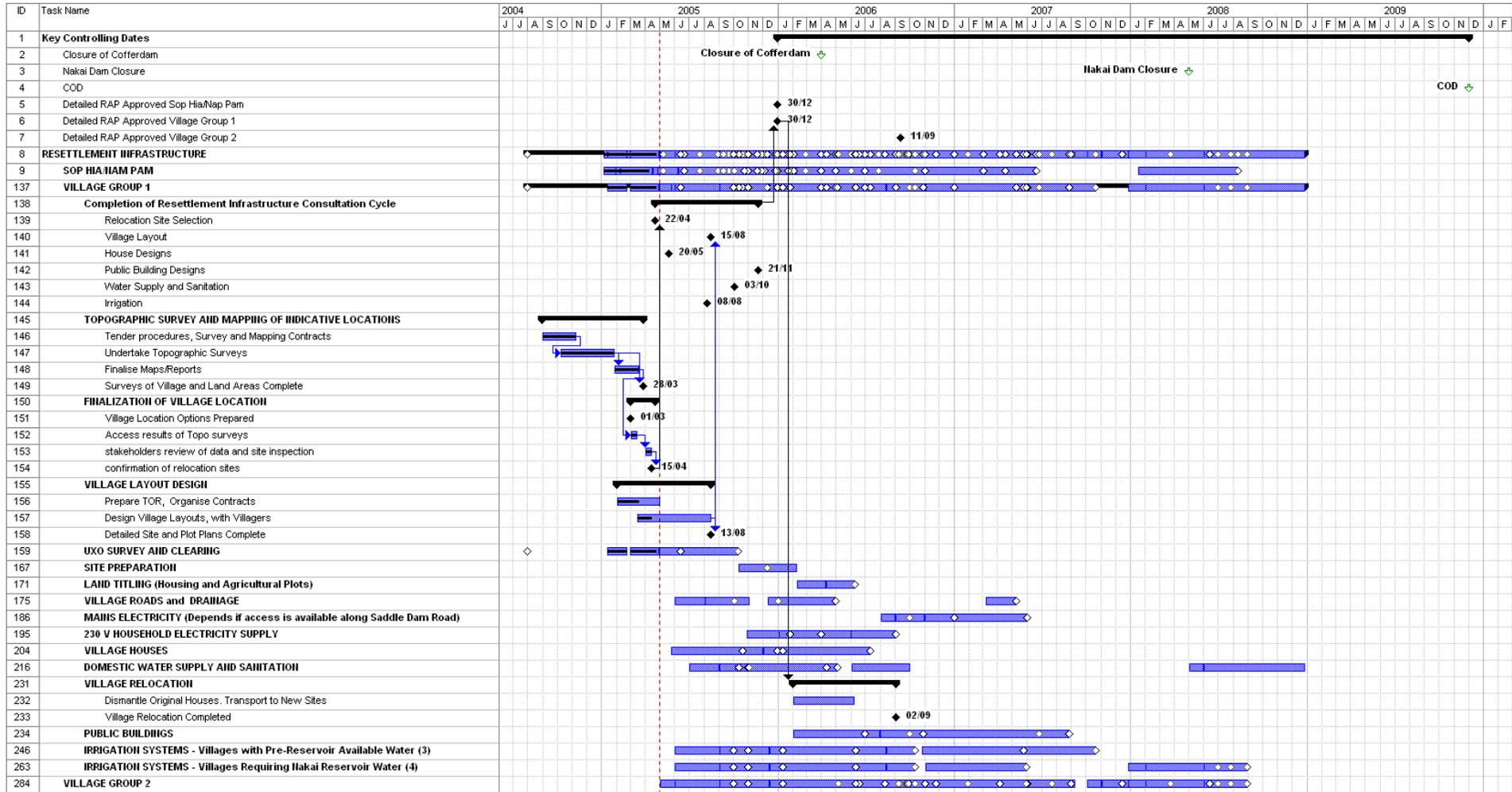
<b>Task:</b>	<b>Start:</b>	<b>Finish:</b>
<b>SOP HIA/NAM PAM</b>		
<b>TOPOGRAPHIC SURVEY AND MAPPING OF IRRIGATION AREA</b>	Sep-04	Apr-05
Tender Procedures, Irrigation Survey and Mapping Contract	Sep-04	Oct-04
Undertake Topographic Survey and Mapping	Oct-04	Mar-05
Finalise Irrigation Survey Maps and Survey Report	Mar-05	Apr-05
Prepare Preliminary Irrigation Design and Report Based on Maps	Apr-05	Apr-05
Preliminary Irrigation Design Confirmed	Apr-05	Apr-05
<b>◆ Surveys of Village and Land Areas Complete</b>	<b>Mar-05</b>	
<b>FINALIZATION OF VILLAGE LOCATION</b>	Apr-05	Jun-05
<b>◆ Village Location Options Prepared</b>	<b>Apr-05</b>	
Stakeholders site inspection and further meetings with Host Village	Apr-05	Apr-05
More Topo Survey and Mapping of Village Housing Area as Required	Apr-05	May-05
<b>◆ Confirmation of New Village Housing Site</b>	<b>May-05</b>	
<b>VILLAGE LAYOUT DESIGN</b>	Apr-05	Aug-05
Prepare TOR, Organise Contract	Apr-05	May-05
Design Village Layout, with Villagers	Jun-05	Aug-05
<b>◆ Detailed Site and Plot Plans Complete</b>	<b>Aug-05</b>	

<b>Task:</b>	<b>Start:</b>	<b>Finish:</b>
<b>VILLAGE GROUP 1</b>	Aug-04	Dec-08
<b>TOPOGRAPHIC SURVEY AND MAPPING OF INDICATIVE LOCATIONS</b>	Aug-04	Mar-05
Tender procedures, Survey and Mapping Contracts	Aug-04	Nov-04
Undertake Topographic Surveys	Oct-04	Jan-05
Finalise Maps/Reports	Jan-05	Mar-05
<b>◆ Surveys of Village and Land Areas Complete</b>	<b>Mar-05</b>	
<b>FINALIZATION OF VILLAGE LOCATION</b>	Mar-05	Apr-05
<b>◆ Village Location Options Prepared</b>	<b>Mar-05</b>	
Access results of Topo surveys	Mar-05	Mar-05
stakeholders review of data and site inspection	Apr-05	Apr-05
<b>◆ confirmation of relocation sites</b>	<b>Apr-05</b>	
<b>VILLAGE LAYOUT DESIGN</b>	Feb-05	Aug-05
Prepare TOR, Organise Contracts	Feb-05	May-05
Design Village Layouts, with Villagers	Mar-05	Aug-05
<b>◆ Detailed Site and Plot Plans Complete</b>	<b>Aug-05</b>	

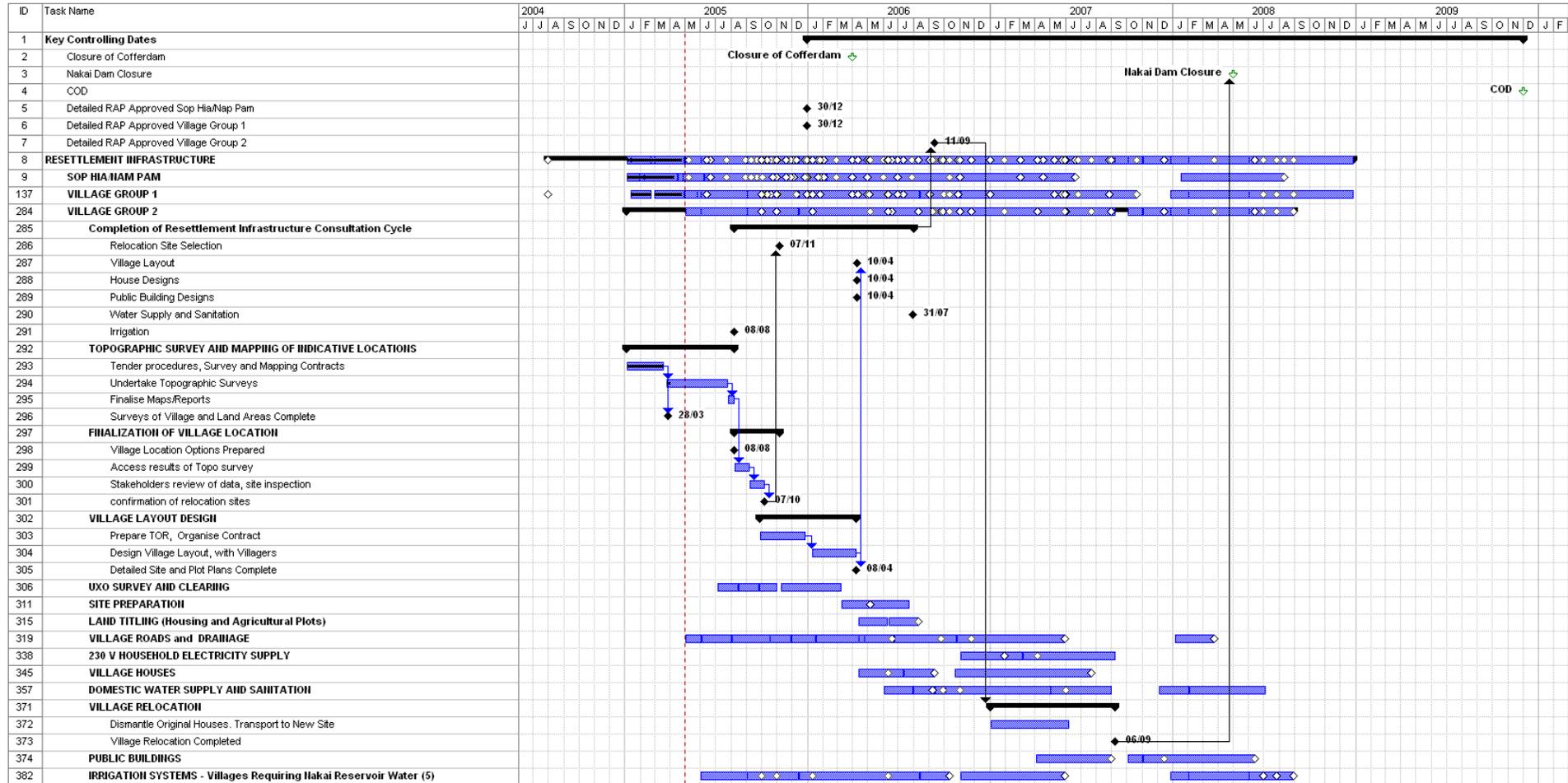
<b>Task:</b>	<b>Start:</b>	<b>Finish:</b>
<b>VILLAGE GROUP 2</b>		
<b>TOPOGRAPHIC SURVEY AND MAPPING OF INDICATIVE LOCATIONS</b>	Jan-05	Aug-05
Tender procedures, Survey and Mapping Contracts	Jan-05	Mar-05
Undertake Topographic Surveys	Mar-05	Jul-05
Finalise Maps/Reports	Jul-05	Aug-05
<b>◆ Surveys of Village and Land Areas Complete</b>	<b>Mar-05</b>	
<b>FINALIZATION OF VILLAGE LOCATION</b>	Aug-05	Nov-05
<b>◆ Village Location Options Prepared</b>	<b>Aug-05</b>	
Access results of Topo survey	Aug-05	Sep-05
Stakeholders review of data, site inspection	Sep-05	Oct-05
<b>◆ confirmation of relocation sites</b>	<b>Oct-05</b>	
<b>VILLAGE LAYOUT DESIGN</b>	Sep-05	Apr-06
Prepare TOR, Organise Contract	Sep-05	Dec-05
Design Village Layout, with Villagers	Jan-06	Apr-06
<b>◆ Detailed Site and Plot Plans Complete</b>	<b>Apr-06</b>	



PIP Part B : Social Activities - Chapter 3: Nakai Plateau Resettlement



PIP Part B : Social Activities - Chapter 3: Nakai Plateau Resettlement



### 2.1.5 Arrangements for Procurement & Implementation

<i>Description</i>	<i>Activity</i>	<i>Implementation</i>	<i>Village Consultation or participation</i>
Topographic Survey and Mapping	Tendering procedures	NTPC	None
	Survey and Mapping	Consultant Companies	None
Village Location and Layout	Tendering procedures	NTPC	None
	Prepare alternative locations and choose location	Consultant Companies	Yes
	Prepare alternative layouts and choose layout	Consultant Companies	Yes

Source: SDP Vol 2 Table 20-2

### 2.1.6 Monitoring

Refer also to Section 1.9 above – the following table shows specific parameters relevant to this sub-component:

<b>Parameters:</b>	<b>Monitored by:</b>
Records of community consultations:	NTPC / RMU
<ul style="list-style-type: none"> <li>Attendance at meetings, including representation and participation of women and disadvantaged and ethnic groups</li> </ul>	
<ul style="list-style-type: none"> <li>Issues raised at meetings regarding location / layout</li> </ul>	
<ul style="list-style-type: none"> <li>Resolutions</li> </ul>	
<ul style="list-style-type: none"> <li>Final agreements on location</li> </ul>	
<ul style="list-style-type: none"> <li>Final agreements on layout</li> </ul>	
Overall progress against:	
<ul style="list-style-type: none"> <li>schedule</li> </ul>	
<ul style="list-style-type: none"> <li>budget</li> </ul>	

### 2.1.7 Milestones

- Surveys of village land areas complete
- Village location options prepared
- Confirmation of relocation sites
- Detailed site and plot plans complete

## 2.2 UXO & Site Preparation

### 2.2.1 Issues

Unexploded ordinance (UXO) remains a hazard in the areas proposed for resettlement. The extent of the problem is not known. UXO need to be located and cleared from areas proposed for resettlement. Following UXO clearance, demarcated areas need to be cleared of trees and other vegetation, and individual plots surveyed, measured and set out for land titling procedures to commence.

### 2.2.2 Objectives / Measures

To prepare the resettlement sites for infrastructure development by:

- Determination of the extent and type of UXO present.
- Clearance of the UXO from the resettlement sites.
- Clearance of trees and other vegetation
- Survey and set-out in preparation for the land titling process

To raise community awareness and preparedness in UXO through the delivery of comprehensive awareness programs as well as including the communities in UXO clearance activities. (SDP 20.4(b))

To establish an “on call roving capability” in UXO clearance with the objective of dealing with UXO discovery in community forest areas during construction

### 2.2.3 Obligations per CA

#### NTPC Obligations

<i>Reference:</i>	<i>Description:</i>
Volume 2A, Schedule 4, Part 1, Section	
7.10.1	UXO survey of land within the Resettlement Area
7.10.2	Ensure compliance with obligations to detect and render safe, prior to relocation of Resettlers
7.10.3	Engage experts in UXO community awareness to deliver community awareness programme
7.10.4	Establishment of on-call “roving” capability to deal with UXO discovered in community forest areas
8.2.1	Support RMU in provision of resources to resettlers for clearing and fencing of land.
8.3.1	Assist RMU in developing a mechanism to distribute farm & house plots to resettlers
8.5.22	Move items of cultural heritage

**GoL Obligations (for reference)**

<b>Reference:</b>	<b>Description:</b>
Schedule 4, Part 1 Section	
7.5.1	Nam Theun 2 Land Decree
8.5.21	GOL to provide detailed plans to the Company regarding relocation of items of cultural heritage.

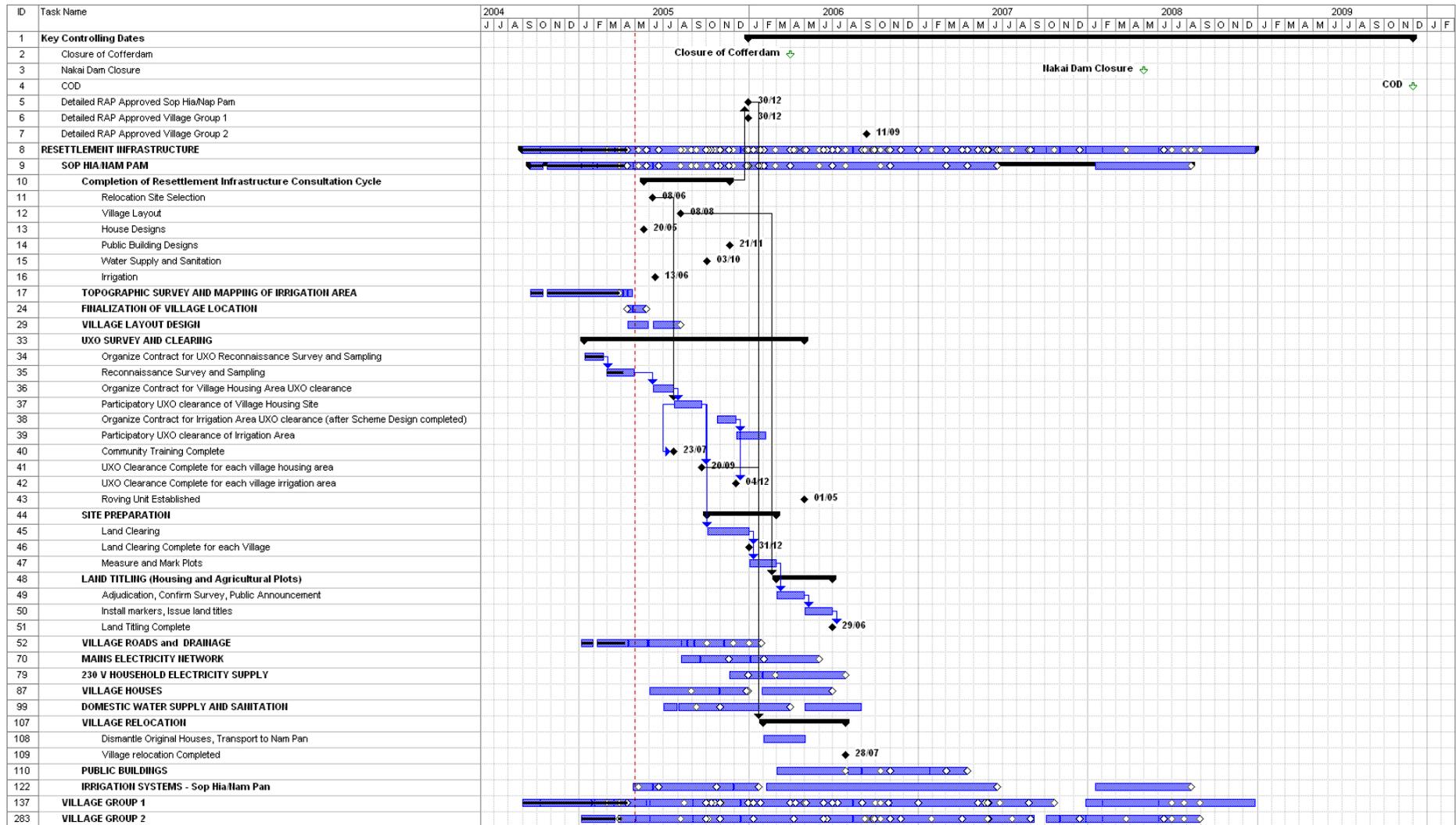
**2.2.4 Scope of Work and Key Dates**

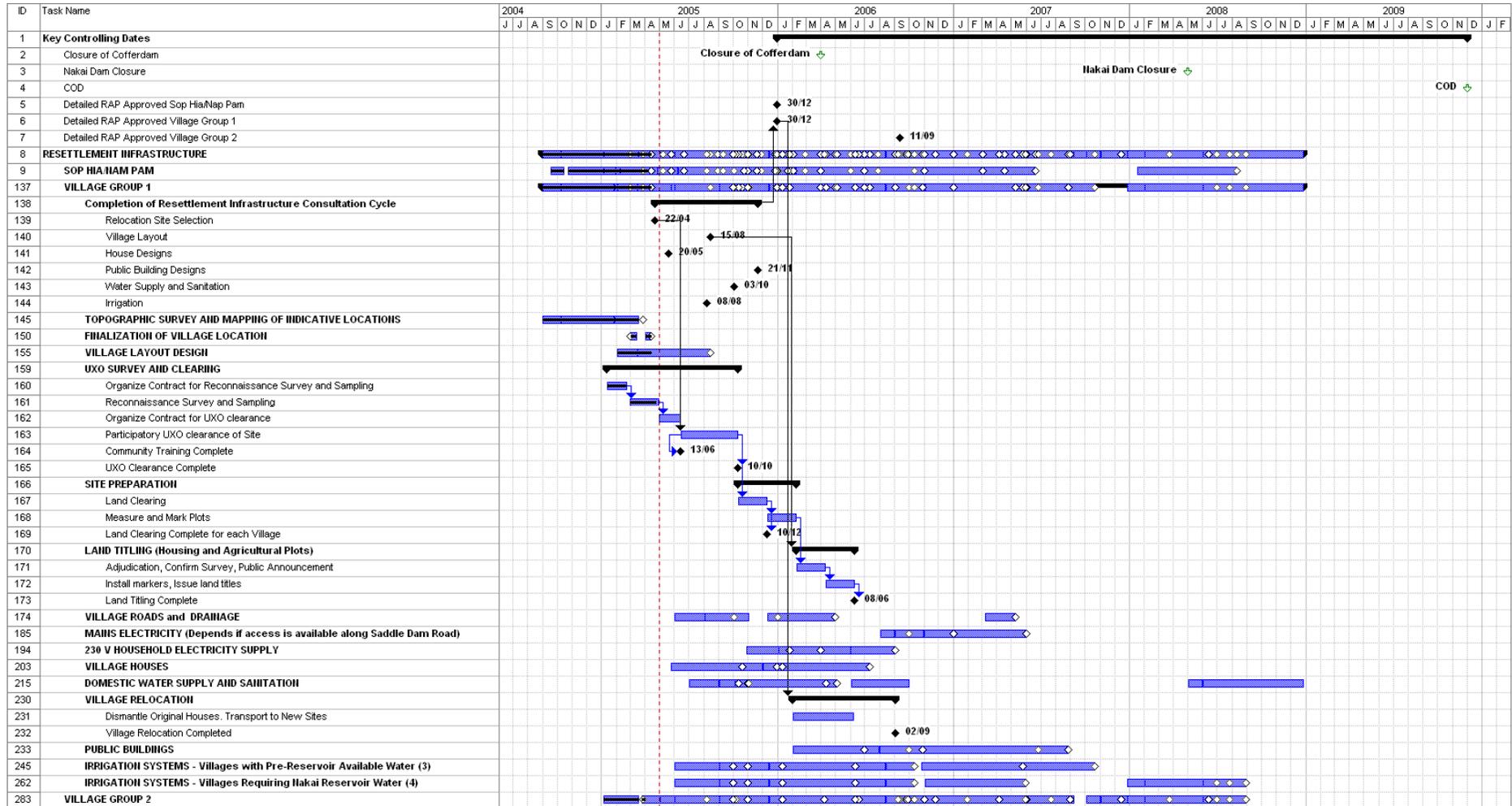
◆ denotes milestone(s)

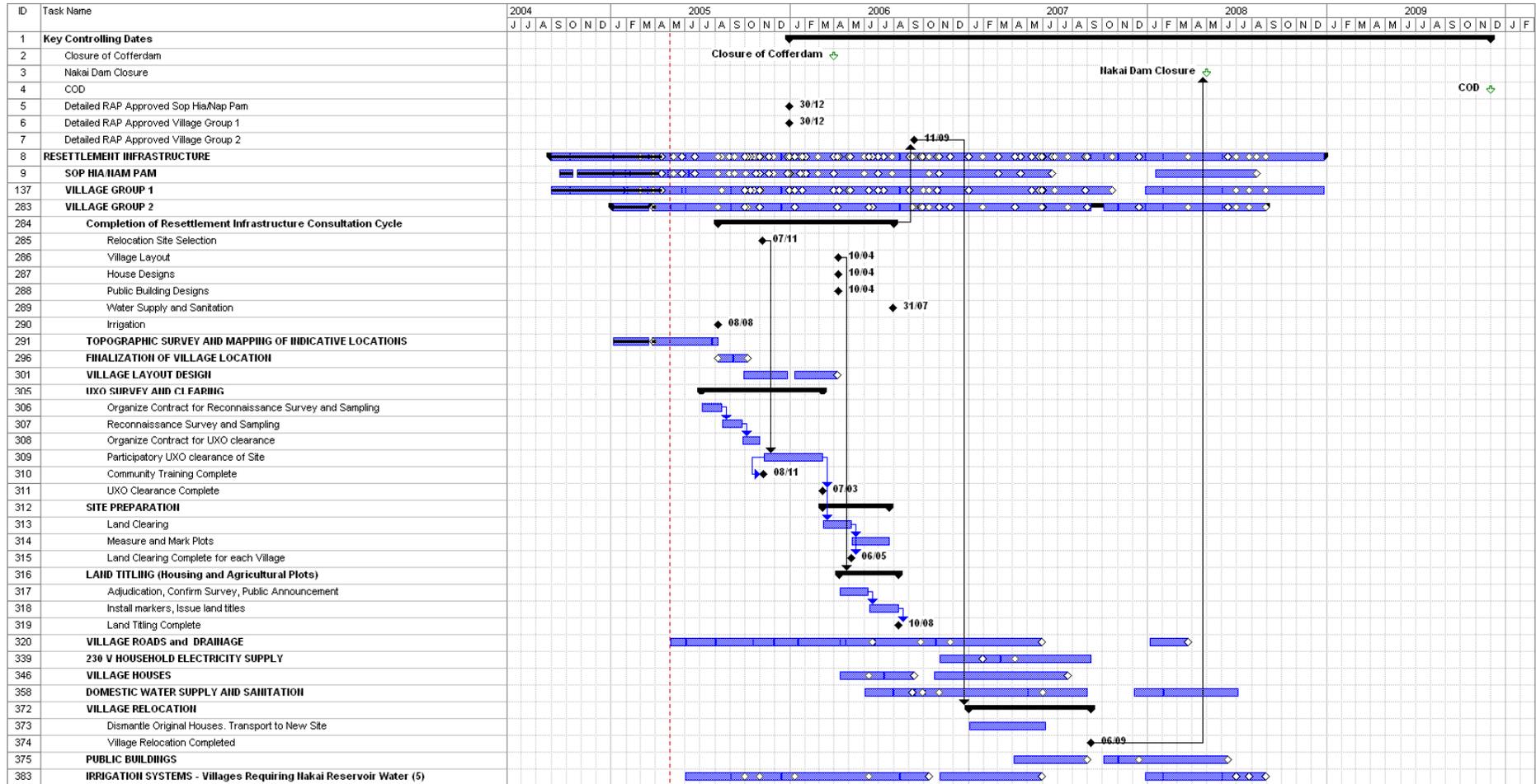
<b>SOP HIA/NAM PAM</b>	<b>Start</b>	<b>Finish</b>
<b>UXO SURVEY AND CLEARING</b>	<b>Jan-05</b>	<b>May-06</b>
Organize Contract for UXO Reconnaissance Survey and Sampling	Jan-05	Feb-05
Reconnaissance Survey and Sampling	Feb-05	Apr-05
Organize Contract for Village Housing Area UXO clearance	Jun-05	Jul-05
Participatory UXO clearance of Village Housing Site	Jul-05	Sep-05
Organize Contract for Irrigation Area UXO clearance	Oct-05	Dec-05
Participatory UXO clearance of Irrigation Area	Dec-05	Feb-06
<b>◆ Community Training Complete</b>	<b>Jul-05</b>	
<b>◆ UXO Clearance Complete for each village housing area</b>	<b>Sep-05</b>	
<b>◆ UXO Clearance Complete for each village irrigation area</b>	<b>Dec-05</b>	
<b>◆ Roving Unit Established</b>	<b>May-06</b>	
<b>SITE PREPARATION</b>	<b>Oct-05</b>	<b>Mar-06</b>
Land Clearing	Oct-05	Dec-05
Land Clearing Complete for each Village	Dec-05	
Measure and Mark Plots	Jan-06	Mar-06
<b>LAND TITLING (Housing and Agricultural Plots)</b>	<b>Mar-06</b>	<b>Jun-06</b>
Adjudication, Confirm Survey, Public Announcement	Mar-06	Apr-06
Install markers, Issue land titles	May-06	Jun-06
<b>◆ Land Titling Complete</b>	<b>Jun-06</b>	

<b>VILLAGE GROUP 1</b>	<b>Start</b>	<b>Finish</b>
<b>UXO SURVEY AND CLEARING</b>	<b>Aug-04</b>	<b>Oct-05</b>
Organize Contract for Reconnaissance Survey and Sampling	Jan-05	Feb-05
Reconnaissance Survey and Sampling	Feb-05	Apr-05
Organize Contract for UXO clearance	Apr-05	Jun-05
Participatory UXO clearance of Site	Jun-05	Oct-05
<b>◆ Community Training Complete</b>	<b>Jun-05</b>	
<b>◆ UXO Clearance Complete</b>	<b>Oct-05</b>	
<b>SITE PREPARATION</b>	<b>Oct-05</b>	<b>Feb-06</b>
Land Clearing	Oct-05	Dec-05
Measure and Mark Plots	Dec-05	Feb-06
<b>◆ Land Clearing Complete for each Village</b>	<b>Dec-05</b>	
<b>LAND TITLING (Housing and Agricultural Plots)</b>	<b>Feb-06</b>	<b>Jun-06</b>
Adjudication, Confirm Survey, Public Announcement	Feb-06	Apr-06
Install markers, Issue land titles	Apr-06	Jun-06
<b>◆ Land Titling Complete</b>	<b>Jun-06</b>	

<b>VILLAGE GROUP 2</b>	<b>Start</b>	<b>Finish</b>
<b>UXO SURVEY AND CLEARING</b>	<b>Jul-05</b>	<b>Mar-06</b>
Organize Contract for Reconnaissance Survey and Sampling	Jul-05	Aug-05
Reconnaissance Survey and Sampling	Aug-05	Sep-05
Organize Contract for UXO clearance	Sep-05	Oct-05
Participatory UXO clearance of Site	Nov-05	Mar-06
<b>◆ Community Training Complete</b>	<b>Nov-05</b>	
<b>◆ UXO Clearance Complete</b>	<b>Mar-06</b>	
<b>SITE PREPARATION</b>	<b>Mar-06</b>	<b>Jul-06</b>
Land Clearing	Mar-06	May-06
Measure and Mark Plots	May-06	Jul-06
<b>◆ Land Clearing Complete for each Village</b>	<b>May-06</b>	
<b>LAND TITLING (Housing and Agricultural Plots)</b>	<b>Apr-06</b>	<b>Aug-06</b>
Adjudication, Confirm Survey, Public Announcement	Apr-06	Jun-06
Install markers, Issue land titles	Jun-06	Aug-06
<b>◆ Land Titling Complete</b>	<b>Aug-06</b>	







### 2.2.5 Arrangements for Procurement & Implementation

<i>Description</i>	<i>Activity</i>	<i>Implementation</i>	<i>Village Consultation or participation</i>
UXO Surveys and Clearance	Tendering procedures, identification of NGOs and subsequent negotiation	NTPC	None
	Survey and Clearance	Private Companies	Participation
	Conduct Community Awareness Training	RMU/DWG	Participation
	Establish On call Roving Unit	RMU/DWG	None
Site Preparation: trees	Identify and log commercially useful trees	NPVFA	Yes
Site Preparation: small trees and bushes	Clearance by slash and burn methods	Resettlement farmers	Yes

Source: SDP Vol 2 Table 20-2

### 2.2.6 Monitoring

Refer also to Section 1.9 above – the following table shows specific parameters relevant to this sub-component:

<b>Parameters:</b>	<b>Monitored by:</b>
Progress against schedule and budget	NTPC /RMU
Area surveyed	
Area cleared	
UXO clearance	
UXO detected in community forest area	
Community training delivered	
Injuries sustained from UXO	

### 2.2.7 Milestones

- Mobile (roving) unit established
- Community training delivered.
- UXO clearance complete for each village housing area
- UXO clearance complete for each village irrigation area
- Land clearing complete for each village
- Land titling complete.

## 2.3 Roads and Electricity Network

### 2.3.1 Issues

Relocated households require road access and household electricity.

### 2.3.2 Objectives / Measures

To provide basic road and electricity infrastructure to all persons displaced by the Project, to standards defined in the CA.

### 2.3.3 Obligations per CA

#### NTPC Obligations

<i>Reference:</i>	<i>Description:</i>
Volume 2A, Schedule 4, Part 1, Section	
7.1.1, 7.1.2	Detailed surveys for suitability of village land areas
7.2.1	Prepare village location options
7.2.2	Ensure consultative and participatory approach in planning of village layouts (with RMU)
7.3.1	Develop village layout options through participatory planning (with RMU) and prepare technical plans to reflect village preferences
7.3.2	Assist RMU to consult Resettlers on development of Village Development Plans prepared by RO, and seek input from Resettlers.
7.3.3	Preference of resettlers to be primary factor in determining size and location of resettlement villages.
7.4.1	Prepare and move pilot village
7.5	Preparation of forest and land use plans for each village
7.6.1	Prepare detailed site and plot plans
7.7.2	Revision of Detailed Village Plans to reflect community consultations
7.8.1	Assist RMU to ensure the final choice of site is made by Resettlers in consultation with Company and GOL
7.8.2	Requirements to be satisfied prior to confirmation of sites
7.11.1	Ensure construction contractors prepare and implement site specific environmental plans for each site, in accordance with standards specified in CA, Schedule 4, Part 2
8.5	RO to ensure design and supervision of construction of infrastructure carried out by experts; Company must consult with RMU during design process and ensure no-objection; ensure consultation with and/or participation by Resettlers incorporated into the process.
8.5.1	Village access roads south of Oudomsouk; all weather access roads to each resettler house and farm lot; all weather forest management roads.
8.5.2	Provision of electricity (at no cost to Resettlers) prior to provision of grid connection and electricity through the grid to each household and applicable community building as per paragraph 5.1 of clause 15.1
8.5.3	Electricity supply to each resettler house and newly constructed community buildings
8.5.22	Seek GOL guidance regarding items of cultural heritage and implement relocation
8.5.23	22 kW electricity supply from the Power Station. Transformers and switchyard capacity 20MW total. Design, construction and maintenance per period liable under CA Clause 17.8.

<b>Reference:</b>	<b>Description:</b>
8.6.6	Electrical wiring, safety devices and fittings for Resettlers' houses and community buildings.
9.10.4	Access roads to fish landing places <sup>7</sup>

**GoL Obligations (for reference)**

<b>Reference:</b>	<b>Description:</b>
Schedule 4, Part 1 Section	
7.3.4	RMU to advise RO of Resettlers' input and advice.
7.5.1	Nam Theun 2 Land Decree.
7.7.1	RMU to consult with Resettlers on Detailed Village Plans, provide rationale and relevant data, and seek input and advice
7.9.1	RMU to inform each resettler of new location
8.1.2	RMU to liaise with Khammouane Provincial Government to obtain land certificate
8.1.3	GOL obligations regarding land titles
8.5	GOL to ensure consultation with and/or participation by Resettlers incorporated into the process.
8.5.21	GOL to provide detailed plans to the Company regarding relocation of items of cultural heritage.

**2.3.4 Scope of Work and Key Dates**

♦ denotes milestone(s)

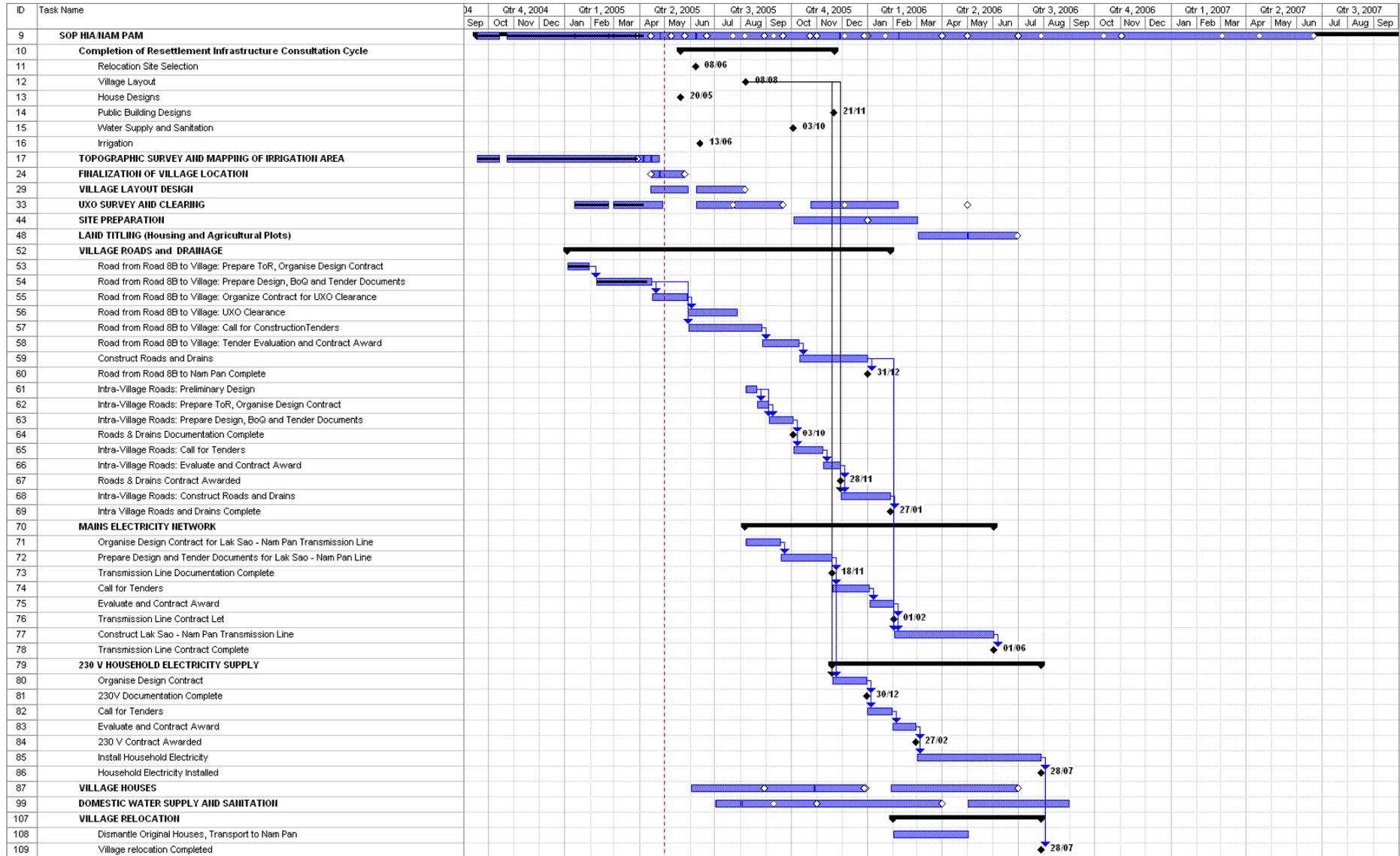
<b>SOP HIA/NAM PAM</b>	<b>Start</b>	<b>Finish</b>
<b>VILLAGE ROADS and DRAINAGE</b>	<b>Jan-05</b>	<b>Jan-06</b>
Road from Road 8B to Village <sup>8</sup> : Prepare ToR, Organise Design Contract	Jan-05	Jan-05
Road from Road 8B to Village: Prepare Design, BoQ and Tender Documents	Feb-05	Apr-05
Road from Road 8B to Village: Organize Contract for UXO Clearance	Apr-05	May-05
Road from Road 8B to Village: UXO Clearance	May-05	Jul-05
Road from Road 8B to Village: Call for ConstructionTenders	May-05	Aug-05
Road from Road 8B to Village: Tender Evaluation and Contract Award	Aug-05	Oct-05
Construct Roads and Drains	Oct-05	Dec-05
<b>♦ Road from Road 8B to Nam Pan Complete</b>	<b>Dec-05</b>	
Intra-Village Roads: Preliminary Design	Aug-05	Aug-05
Intra-Village Roads: Prepare ToR, Organise Design Contract	Aug-05	Sep-05
Intra-Village Roads: Prepare Design, BoQ and Tender Documents	Sep-05	Oct-05
<b>♦ Roads &amp; Drains Documentation Complete</b>	<b>Oct-05</b>	
Intra-Village Roads: Call for Tenders	Oct-05	Nov-05
Intra-Village Roads: Evaluate and Contract Award	Nov-05	Nov-05
<b>♦ Roads &amp; Drains Contract Awarded</b>	<b>Nov-05</b>	
Intra-Village Roads: Construct Roads and Drains	Nov-05	Jan-06
<b>♦ Intra Village Roads and Drains Complete</b>	<b>Jan-06</b>	
<b>MAINS ELECTRICITY NETWORK</b>	<b>Aug-05</b>	<b>Jun-06</b>
Organise Design Contract for Lak Sao - Nam Pan Transmission Line	Aug-05	Sep-05
Prepare Design and Tender Documents for Lak Sao - Nam Pan Line	Sep-05	Nov-05
<b>♦ Transmission Line Documentation Complete</b>	<b>Nov-05</b>	
Call for Tenders	Nov-05	Jan-06
Evaluate and Contract Award	Jan-06	Feb-06
<b>♦ Transmission Line Contract Let</b>	<b>Feb-06</b>	

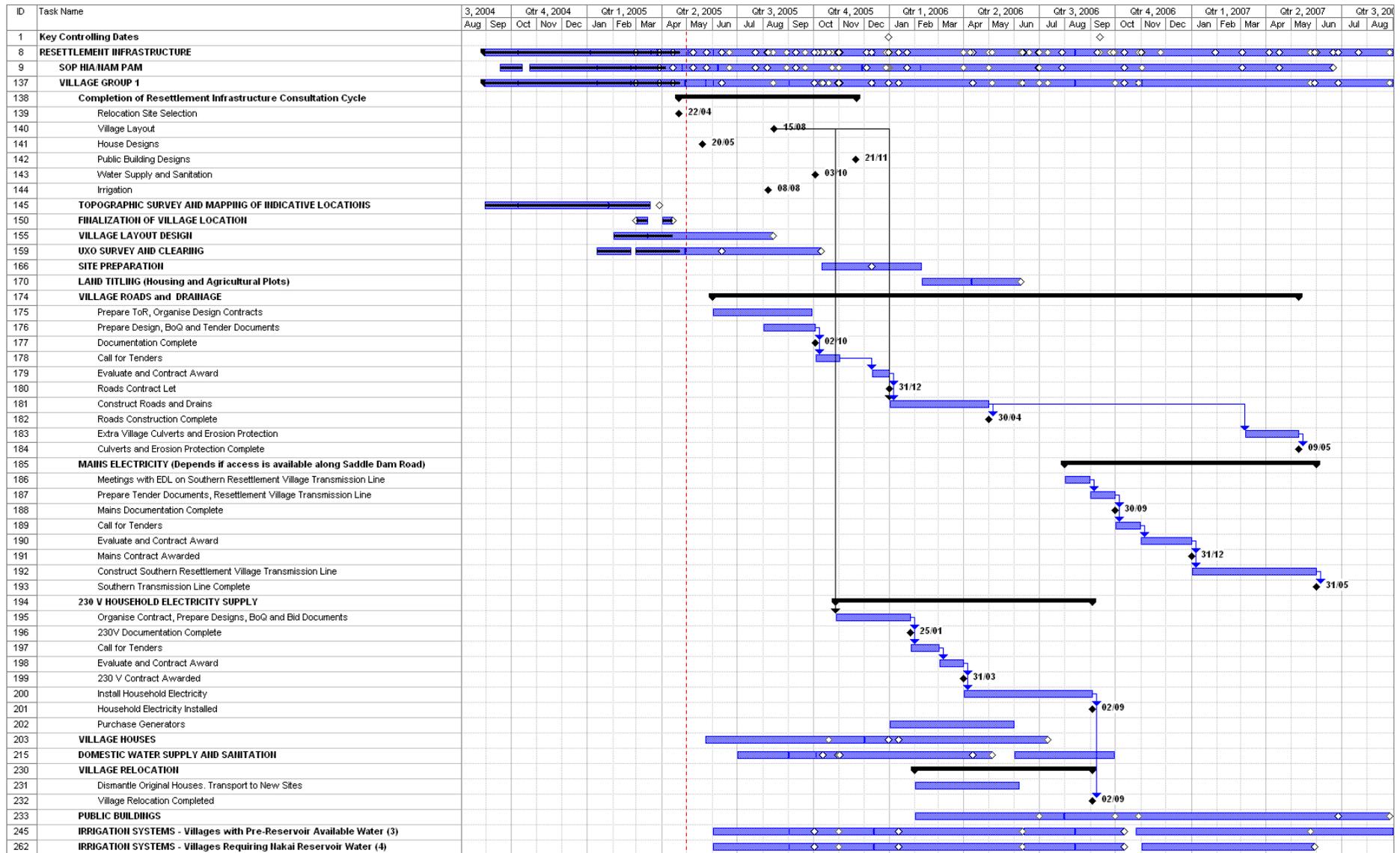
<sup>7</sup> Access roads to pump station will provide access to fish landing places<sup>8</sup> HCJV responsible for relocated Road 8B for resettled villages north of Oudomsouk. HCJV responsible for new road from Oudomsouk to Nakai reservoir saddle dams, for resettled villages south of Udomsouk. Resettlement program to extend saddle dam road to connect villages further south (there will be at least 2). Intra village roads, min. pavement width 4m, formation width 8m, to connect to main roads

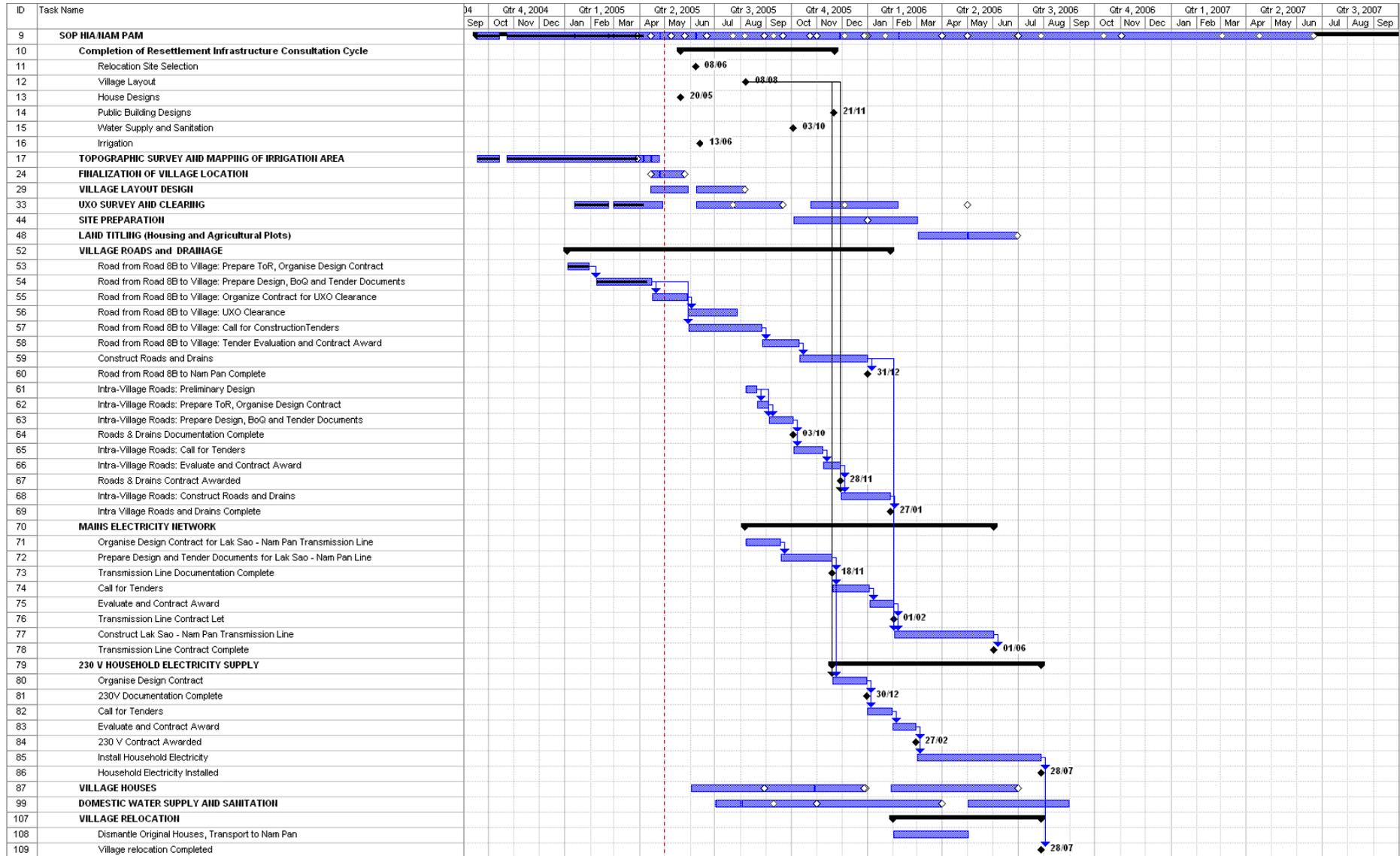
<b>SOP HIA/NAM PAM</b>	<b>Start</b>	<b>Finish</b>
<b>VILLAGE ROADS and DRAINAGE</b>	<b>Jan-05</b>	<b>Jan-06</b>
Construct Lak Sao - Nam Pan Transmission Line	Feb-06	Jun-06
<b>◆ Transmission Line Contract Complete</b>	<b>Jun-06</b>	
<b>230 V HOUSEHOLD ELECTRICITY SUPPLY</b>	<b>Nov-05</b>	<b>Jul-06</b>
Organise Design Contract	Nov-05	Dec-05
<b>◆ 230V Documentation Complete</b>	<b>Dec-05</b>	
Call for Tenders	Dec-05	Jan-06
Evaluate and Contract Award	Jan-06	Feb-06
<b>◆ 230 V Contract Awarded</b>	<b>Feb-06</b>	
Install Household Electricity	Mar-06	Jul-06
<b>◆ Household Electricity Installed</b>	<b>Jul-06</b>	

<b>VILLAGE GROUP 1</b>	<b>Start</b>	<b>Finish</b>
<b>VILLAGE ROADS and DRAINAGE</b>	<b>Jun-05</b>	<b>May-07</b>
Prepare ToR, Organise Design Contracts	Jun-05	Sep-05
Prepare Design, BoQ and Tender Documents	Aug-05	Oct-05
<b>◆ Documentation Complete</b>	<b>Oct-05</b>	
Call for Tenders	Oct-05	Nov-05
Evaluate and Contract Award	Dec-05	Dec-05
<b>◆ Roads Contract Let</b>	<b>Dec-05</b>	
Construct Roads and Drains	Jan-06	Apr-06
<b>◆ Roads Construction Complete</b>	<b>Apr-06</b>	
Extra Village Culverts and Erosion Protection	Mar-07	May-07
<b>◆ Culverts and Erosion Protection Complete</b>	<b>May-07</b>	
<b>MAINS ELECTRICITY (Depends if access is available along Saddle Dam Road)</b>	<b>Aug-06</b>	<b>May-07</b>
Meetings with EDL on Southern Resettlement Village Transmission Line	Aug-06	Aug-06
Prepare Tender Documents, Resettlement Village Transmission Line	Aug-06	Sep-06
<b>◆ Mains Documentation Complete</b>	<b>Sep-06</b>	
Call for Tenders	Oct-06	Oct-06
Evaluate and Contract Award	Oct-06	Dec-06
<b>◆ Mains Contract Awarded</b>	<b>Dec-06</b>	
Construct Southern Resettlement Village Transmission Line	Jan-07	May-07
<b>◆ Southern Transmission Line Complete</b>	<b>May-07</b>	
<b>230 V HOUSEHOLD ELECTRICITY SUPPLY</b>	<b>Oct-05</b>	<b>Sep-06</b>
Organise Contract, Prepare Designs, BoQ and Bid Documents	Oct-05	Jan-06
<b>◆ 230V Documentation Complete</b>	<b>Jan-06</b>	
Call for Tenders	Jan-06	Mar-06
Evaluate and Contract Award	Mar-06	Mar-06
<b>◆ 230 V Contract Awarded</b>	<b>Mar-06</b>	
Install Household Electricity	Apr-06	Sep-06
<b>◆ Household Electricity Installed</b>	<b>Sep-06</b>	
Purchase Generators	Jan-06	May-06

<b>VILLAGE GROUP 2</b>	<b>Start</b>	<b>Finish</b>
<b>VILLAGE ROADS and DRAINAGE</b>	<b>May-05</b>	<b>Mar-08</b>
All Weather Access Road (South of Oudomsouk): Organize Design Contract	May-05	Jun-05
All Weather Access Road: Prepare Design, BoQ and Tender Documents	Jun-05	Aug-05
Organize and Implement Contract for UXO Clearance	Aug-05	Nov-05
All Weather Access Road: Call for Tenders	Oct-05	Nov-05
All Weather Access Road: Evaluate Tenders and Contract Award	Nov-05	Jan-06
All Weather Access Road: Construct Road	Jan-06	Jun-06
<b>♦ All Weather Access Road Completed</b>	<b>Jun-06</b>	
Intra-Village Roads: Preliminary Design (Use Topo Maps and Village Layout)	Apr-06	Jun-06
Intra-Village Roads: Prepare ToR, Organise Design Contract	Apr-06	Jun-06
Intra-Village Roads: Prepare Design, BoQ and Tender Documents	Jun-06	Sep-06
<b>♦ Intra Village Roads Documentation Complete</b>	<b>Sep-06</b>	
Intra-Village Roads: Call for Tenders	Sep-06	Oct-06
Intra-Village Roads: Evaluate and Contract Award	Oct-06	Nov-06
<b>♦ Intra Village Roads Contract Awarded</b>	<b>Nov-06</b>	
Intra-Village Roads: Construct Roads and Drains	Nov-06	May-07
<b>♦ Intra Village Roads Constructed</b>	<b>May-07</b>	
Intra-Village Roads: Extra Village Culverts and Erosion Protection	Jan-08	Mar-08
<b>♦ Extra Culverts and Erosion Protection Complete</b>	<b>Mar-08</b>	
<b>230 V HOUSEHOLD ELECTRICITY SUPPLY</b>	<b>Nov-06</b>	<b>Sep-07</b>
Organise Contract, Prepare Designs, BoQ and Bid Documents	Nov-06	Jan-07
<b>♦ 230V Documentation Complete</b>	<b>Jan-07</b>	
Call for Tenders	Jan-07	Mar-07
Evaluate and Contract Award	Mar-07	Apr-07
<b>♦ 230V Contract Awarded</b>	<b>Apr-07</b>	
Install Household Electricity	Apr-07	Sep-07
<b>♦ Household Electricity Installed</b>	<b>Sep-07</b>	







### 2.3.5 Arrangements for Procurement & Implementation

<i>Description</i>	<i>Activity</i>	<i>Implementation</i>	<i>Village Consultation or participation</i>
Roads and Drains	Design	Consulting firms	Some
	Tendering	NTPC	None
	Construction	Local Contractors by Local Competitive Bidding (LCB)	None
Transmission Line & Transformers	Design	NTPC/EDL	None
	Construction	NTPC/EDL	None
Village Networks	Design	EDL	None
	Construction	EDL / Contractors	None
House Connections	Design	EDL	None
	Construction	EDL/Contractors	None

Source: SDP Vol 2 Table 20-2

### 2.3.6 Monitoring

Refer also to Section 1.9 above – the following table shows specific parameters relevant to this sub-component:

<b>Parameters:</b>	<b>Monitored by:</b>
Contracts awarded	NTPC
Design and documentation progress against schedule and budget	
Construction progress against schedule and budget	
Compliance with construction standards as per CA	
Condition of constructed works	
Maintenance training delivered	

### 2.3.7 Milestones

#### **Sop Hia / Nam Pan**

- Road from Road 8B to Nam Pam complete

#### **Village Roads and Drainage:**

- Documentation complete
- Contract let
- Construction complete

#### **Mains Electricity Network (Lak Sao-Nam Pan Transmission Line)**

- Documentation complete
- Contract let
- Construction complete

#### **230V Household Electricity Supply**

- Design contract complete

- Contract let
- Household electricity installed

### **Village Group 1**

#### **Roads:**

- Documentation complete
- Contract let
- Roads/drains construction complete
- Extra culverts and erosion protection complete

### **Mains Electricity Network (Southern Resettlement Village Transmission Line)**

- Documentation complete
- Contract let
- Construction complete

### **230V Household Electricity Supply**

- Design contract complete
- Contract let
- Household electricity installed
- Electric generators purchased

### **Village Group 2**

- All weather access road south of Oudomsouk complete

#### **Village Roads and Drainage:**

- Documentation complete
- Contract let
- Roads/drains construction complete
- Extra culverts and erosion protection complete

### **230V Household Electricity Supply**

- Design contract complete
- Contract let
- Household electricity installed

## 2.4 Houses and Buildings Construction

### 2.4.1 Issues

Relocated households require accommodation and public buildings, including schools, community halls, markets, clinics, rice mills, workshops and fertilizer factories. Structures of religious and cultural significance including temples and spirit houses also will need relocation / reconstruction. Land for irrigated agriculture is an entitlement as compensation for loss of livelihood.

### 2.4.2 Objectives / Measures

Provide each resettled house with a 600 m<sup>2</sup> plot of land for construction of new timber house with garden surround, and a 0.65 ha plot for irrigated agriculture.<sup>9</sup>

Designs developed through a process of community consultation.

Providing houses of adequate size in a style preferred by villagers and in accordance with accepted traditions.

Incorporation of traditional house designs, including three “zones”: private, public and production.

Salvage as much as possible from existing houses for re-use by resettled households.

Connect all resettlers’ houses and public buildings to electricity.

Provide nursery facilities, equipped with rainwater collection facilities, latrines, simple bedding, mosquito nets and first aid kits to every resettlement village<sup>10</sup>

Provide primary schools and equipment (tables, chairs, blackboard and cupboard for each class room) connected to water supply with at least one latrine per class room (and minimum of two per school – for girls and boys), and provide school supplies for the first three years. School yard must have wooden fence surround and wooden flagpole in yard.

Provide a multipurpose building or group of buildings, connected to water supply and with a toilet, to serve as a communal meeting area, village office and training area.

Provide a roofed market with concrete floor to every village.

Provide one rice mill and workshop for every 50 families

Establish an organic fertiliser factory in most villages.<sup>11</sup>

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<sup>9</sup> If required, houses of same standard as resettlers, with same facilities, also to be provided to teachers and clinic staff.

<sup>10</sup> Villagers to decide if nurseries are to be part of or separate from village primary school

<sup>11</sup> In some cases one factory will be able to be shared by more than one village. Experience gained in Ban Nong Boua pilot village will be used to finalise designs of fertiliser factory and seed processing / storage facility.

Provide seed processing and storage facilities, which may be aligned to the organic fertiliser factory, for each village or group of villages. Facility to include covered and concreted area for final seed drying and cleaning, at least one air conditioned room, and rat/mice proofing measures.

Construct and operate at least two clinics, one in north-west and one in south-east, equipped with sink and furniture appropriate to clinic size, and constructed from concrete and hardwood, with concrete flooring.

### 2.4.3 Obligations per CA

#### NTPC Obligations

<i>Reference:</i>	<i>Description:</i>
Volume 2A, Schedule 4, Part 1, Section	
7.1.1, 7.1.2	Detailed surveys for suitability of village land areas
7.2.1	Prepare village location options
7.2.2	Ensure consultative and participatory approach in planning of village layouts (with RMU)
7.3.1	Develop village layout options through participatory planning (with RMU) and prepare technical plans to reflect village preferences
7.3.2	Assist RMU to consult Resettlers on development of Village Development Plans prepared by RO, and seek input from Resettlers.
7.3.3	Preference of resettlers to be primary factor in determining size and location of resettlement villages.
7.4.1	Prepare and move pilot village
7.5	Preparation of forest and land use plans for each village
7.6.1	Prepare detailed site and plot plans
7.7.2	Revision of Detailed Village Plans to reflect community consultations
7.8.1	Assist RMU to ensure the final choice of site is made by Resettlers in consultation with Company and GOL
7.8.2	Requirements to be satisfied prior to confirmation of sites
7.11.1	Ensure construction contractors prepare and implement site specific environmental plans for each site, in accordance with standards specified in CA, Schedule 4, Part 2
8.1.1	Provide information required for granting of land certificate to Resettlers.
8.4.1	Assist RMU providing transport and labour assistance to Resettlers
8.4.2	Assist RMU in provision of disturbance allowance to Resettlers (USD\$15/person)
8.4.3	Assist RMU to dismantle existing houses
8.5	Design & construct infrastructure & equipment: RO to ensure design and supervision of construction of infrastructure carried out by experts; Company must consult with RMU during design process and seek RC's no-objection; Company to ensure consultation with and/or participation by Resettlers incorporated into the process.
8.5.7a	Community buildings – nursery school
8.5.7b	Community buildings – primary schools
8.5.8	Community buildings – teachers' housing
8.5.9	School equipment
8.5.10	Community buildings – health centres (2 No.)
8.5.11	Community buildings – health centre staff housing
8.5.12	Community buildings – health centre equipment and supplies
8.5.13	Community buildings – meeting hall and village office, including furniture
8.5.14	Community buildings – roofed market
8.5.15	Community buildings – godown/warehouse
8.5.16	Community buildings – rice mill and workshop

<b>Reference:</b>	<b>Description:</b>
8.5.17	Community buildings – seed processing and storage facility
8.5.18	Community buildings – organic fertiliser factory
8.5.19	Community buildings – cattle yard and crush
8.5.20	Community buildings – tree nursery
8.5..22	Company responsible for moving items of cultural heritage
8.6	Construction of house for each family of resettlers: RO to ensure design and supervision of construction of infrastructure carried out by experts; Company must consult with RMU during design process and seek RC's no-objection; Company to consult regularly with Resettlers throughout process to ascertain preferences.
8.6.1	Construction of houses to standards specified; ensure Resettlers given every opportunity to be involved in construction, with labour paid.
8.6.2	Construct one toilet/bathroom per family
8.6.3	Provide water jar for toilet (one per family).
8.6.4	Construct granary, one per family.
8.6.5	Construct roofed compost bin, one per family
8.7.2	Reservoir implementation impoundment must not be commenced until all resettlers have been relocated in accordance with CA
8.7.2	Reservoir implementation impoundment not to commence until all Resettlers relocated.
9.3.1	Establish three farm and house plots and relocate three households
9.4.1	Evaluation of three pilot farms
11.2.1	Conduct training needs assessment and develop training program for RMU, DRWGs and VRCs
11.3.1	Assist RMU with pre-relocation activities plan
15.1	Plateau Resettlers' Entitlements

**GoL Obligations (for reference)**

<b>Reference:</b>	<b>Description:</b>
Schedule 4, Part 1 Section	
7.3.4	RMU to advise RO of Resettlers' input and advice.
7.5.1	Nam Theun 2 Land Decree.
7.7.1	RMU to consult with Resettlers on Detailed Village Plans, provide rationale and relevant data, and seek input and advice
7.9.1	RMU to inform each resettler of new location
8.1.2	RMU to liaise with Khammouane Provincial Government to obtain land certificate
8.1.3	GOL obligations regarding land titles
8.5	GOL to ensure consultation with and/or participation by Resettlers incorporated into the process.
8.5.21	GOL to provide detailed plans to the Company regarding relocation of items of cultural heritage.
8.7.1	Physical relocation: RMU to ensure relocation does not commence until after housing and essential community infrastructure complete; provide support to ensure all rituals deemed necessary can be conducted prior to relocation.
8.7.3	RMU to ensure that no establishment of households other than bona fide Resettlers permitted in the Resettlement Area until Resettlers have fully established themselves.
8.7.4	Flexibility required to allow for return of relatives
8.7.5	Relocation of Resettlers planned in two stages
11.1.1	Set up Village Resettlement Committee in each village
15.1	Plateau Resettlers' Entitlements

## 2.4.4 Scope of Work and Key Dates

◆ denotes milestone(s)

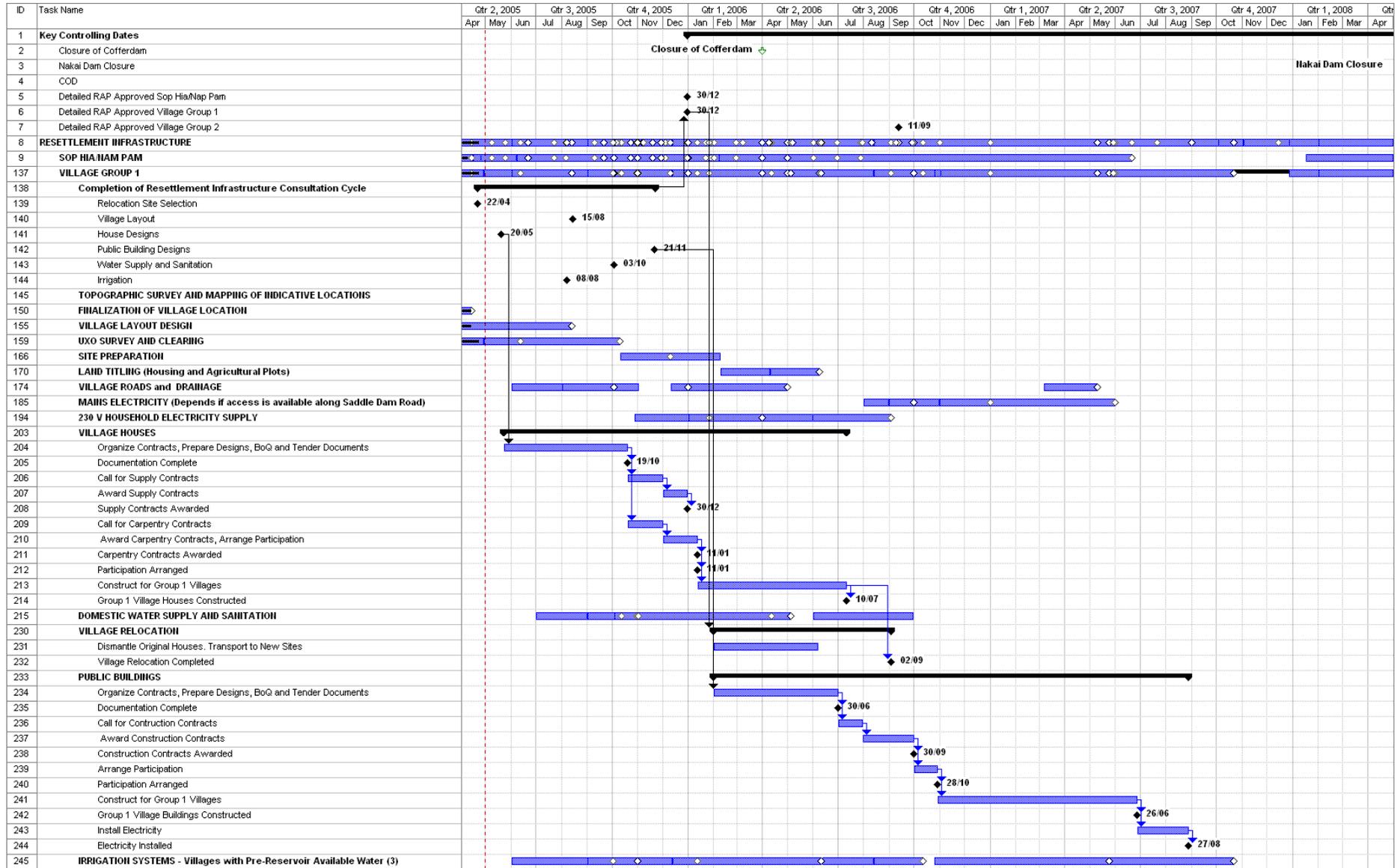
<b>SOP HIA/NAM PAM</b>	<b>Start</b>	<b>Finish</b>
<b>VILLAGE HOUSES</b>	<b>Jun-05</b>	<b>Jun-06</b>
Prepare Designs and BoQ	Jun-05	Aug-05
<b>◆ Documentation Complete</b>	<b>Aug-05</b>	
Call for Supply Contracts	Aug-05	Oct-05
Award Supply Contracts	Oct-05	Dec-05
<b>◆ Supply Contracts Awarded</b>	<b>Dec-05</b>	
Call for Carpentry Contracts	Aug-05	Oct-05
Award Carpentry Contracts, Arrange Participation	Oct-05	Dec-05
<b>◆ Carpentry Contracts Awarded</b>	<b>Dec-05</b>	
Participation Arranged	Dec-05	Dec-05
Construct for Sop Hia/Nam Pan Village	Jan-06	Jun-06
<b>◆ Sop Hia &amp; Nam Pan Houses Constructed</b>	<b>Jun-06</b>	
<b>VILLAGE RELOCATION</b>	<b>Feb-06</b>	<b>Jul-06</b>
Dismantle Original Houses, Transport to Nam Pan	Feb-06	May-06
<b>◆ Village relocation Completed</b>	<b>Jul-06</b>	
<b>PUBLIC BUILDINGS</b>	<b>Mar-06</b>	<b>Apr-07</b>
Organize Contracts, Prepare Designs, BoQ and Tender Documents	Mar-06	Jul-06
<b>◆ Documentation Complete</b>	<b>Jul-06</b>	
Call for Construction Contracts	Aug-06	Aug-06
Award Construction Contracts	Aug-06	Oct-06
<b>◆ Contracts Awarded</b>	<b>Oct-06</b>	
Arrange participation	Oct-06	Nov-06
<b>◆ Participation Arranged</b>	<b>Nov-06</b>	
Construct Buildings	Nov-06	Mar-07
<b>◆ Buildings Construction Complete</b>	<b>Mar-07</b>	
Install Building Electricity	Jan-07	Apr-07
<b>◆ Building Electricity Installed</b>	<b>Apr-07</b>	

<b>VILLAGE GROUP 1</b>	<b>Start</b>	<b>Finish</b>
<b>VILLAGE HOUSES</b>	<b>May-05</b>	<b>Jul-06</b>
Organize Contracts, Prepare Designs, BoQ and Tender Documents	May-05	Oct-05
<b>◆ Documentation Complete</b>	<b>Oct-05</b>	
Call for Supply Contracts	Oct-05	Nov-05
Award Supply Contracts	Dec-05	Dec-05
<b>◆ Supply Contracts Awarded</b>	<b>Dec-05</b>	
Call for Carpentry Contracts	Oct-05	Nov-05
Award Carpentry Contracts, Arrange Participation	Dec-05	Jan-06
<b>◆ Carpentry Contracts Awarded</b>	<b>Jan-06</b>	
<b>◆ Participation Arranged</b>	<b>Jan-06</b>	
Construct for Group 1 Villages	Jan-06	Jul-06
<b>◆ Group 1 Village Houses Constructed</b>	<b>Jul-06</b>	
<b>VILLAGE RELOCATION</b>	<b>Feb-06</b>	<b>Sep-06</b>
Dismantle Original Houses. Transport to New Sites	Feb-06	Jun-06
<b>◆ Village Relocation Completed</b>	<b>Sep-06</b>	

<b>VILLAGE GROUP 1</b>	<b>Start</b>	<b>Finish</b>
<b>VILLAGE HOUSES</b>	<b>May-05</b>	<b>Jul-06</b>
<b>PUBLIC BUILDINGS</b>	<b>Feb-06</b>	<b>Aug-07</b>
Organize Contracts, Prepare Designs, BoQ and Tender Documents	Feb-06	Jun-06
<b>◆ Documentation Complete</b>	<b>Jun-06</b>	
Call for Construction Contracts	Jul-06	Jul-06
Award Construction Contracts	Jul-06	Sep-06
<b>◆ Construction Contracts Awarded</b>	<b>Sep-06</b>	
Arrange Participation	Oct-06	Oct-06
<b>◆ Participation Arranged</b>	<b>Oct-06</b>	
Construct for Group 1 Villages	Oct-06	Jun-07
<b>◆ Group 1 Village Buildings Constructed</b>	<b>Jun-07</b>	
Install Electricity	Jun-07	Aug-07
<b>◆ Electricity Installed</b>	<b>Aug-07</b>	

<b>VILLAGE GROUP 2</b>	<b>Start</b>	<b>Finish</b>
<b>VILLAGE HOUSES</b>	<b>Apr-06</b>	<b>Jul-07</b>
Prepare Designs and BoQ	Apr-06	Jun-06
<b>◆ Documentation Complete</b>	<b>Jun-06</b>	
Call for Supply Contracts	Jun-06	Jul-06
Award Supply Contracts	Jul-06	Sep-06
<b>◆ Supply Contracts Awarded</b>	<b>Sep-06</b>	
Call for Carpentry Contracts	Jun-06	Jul-06
Award Carpentry Contracts, Arrange Participation	Jul-06	Sep-06
<b>◆ Carpentry Contracts Awarded</b>	<b>Sep-06</b>	
<b>◆ Participation Arranged</b>	<b>Sep-06</b>	
Construct for Group 2 Villages	Oct-06	Jul-07
<b>◆ Group 2 Village Houses Constructed</b>	<b>Jul-07</b>	
<b>VILLAGE RELOCATION</b>	<b>Jan-07</b>	<b>Sep-07</b>
Dismantle Original Houses. Transport to New Site	Jan-07	Jun-07
<b>◆ Village Relocation Completed</b>	<b>Sep-07</b>	
<b>PUBLIC BUILDINGS</b>	<b>Apr-07</b>	<b>Jun-08</b>
Organize Contracts, Prepare Designs, BoQ and Tender Documents	Apr-07	Aug-07
<b>◆ Documentation Complete</b>	<b>Aug-07</b>	
Call for Construction Contracts	Oct-07	Nov-07
Award Construction Contracts	Nov-07	Dec-07
<b>◆ Construction Contracts Awarded</b>	<b>Dec-07</b>	
Construct for Group 2 Villages	Dec-07	Jun-08
<b>◆ Group 2 Village Buildings Constructed</b>	<b>Jun-08</b>	







### 2.4.5 Arrangements for Procurement & Implementation

<i>Description</i>	<i>Activity</i>	<i>Implementation</i>	<i>Village Consultation or participation</i>
<b><i>House Design and Construction:</i></b>			
Design	Design Houses	NTPC	Yes – consultations
Construction: Supply Materials	Tendering Procedures	NTPC	None
	Supply Materials	Wood: NPFVA Other: Supply Companies	Yes – via NPFVA None
House Construction	Tendering Procedures	NTPC	None
	Construct Houses	Individual carpenters, small & larger contractors	Yes- help builders <sup>12</sup>
<b><i>Public / Community Buildings</i></b>			
Design	Design Buildings	NTPC	None
Construction: Supply Materials	Tendering Procedures	NTPC	None
	Supply Materials	Supply companies, contractors, NPVFA	Yes – if NPFVA
Construction	Tendering Procedures	NTPC	None
	Construct Buildings	Small and larger contractors	Villagers can tender for construction

Source: SDP Table 20-2

### 2.4.6 Monitoring

Refer also to Section 1.9 above – the following table shows specific parameters relevant to this sub-component:

<b>Parameters:</b>	<b>Monitored by:</b>
Numbers and types of community buildings constructed	NTPC
Records of householder participation in design/ construction	
Design and documentation progress against schedule and budget	
Construction progress against schedule and budget	
Contracts awarded Households relocated	
Compliance with construction standards per CA	
Establishment and implementation of a maintenance program	
Design and implementation of an on-the-job training	

<sup>12</sup> Builders will be given an allowance to employ the householder, in order to ensure that householders are fully involved in their own house construction and to instil a sense of ownership.

<b>Parameters:</b>	<b>Monitored by:</b>
program for resettlers to learn construction / building skills;	NTPC
Participation of resettlers in on-the-job training program	
Participation of resettlers in the maintenance program	

## 2.4.7 Milestones

### **Sop Hia / Nam Pan**

#### **Village Houses:**

- Documentation complete
- Supply Contracts awarded
- Carpentry Contracts awarded
- Participation arranged
- Construction complete

#### **Village Relocation:**

- Relocation complete

#### **Public Buildings**

- Documentation complete
- Supply Contracts awarded
- Carpentry Contracts awarded,
- Participation arranged
- Construction complete
- Building electricity installed

### **Village Group 1**

#### **Village Houses**

- Documentation complete
- Supply Contracts awarded
- Carpentry Contracts awarded
- Participation arranged
- Construction complete

#### **Village Relocation**

- Relocation complete

#### **Public Buildings**

- Documentation complete
- Supply Contracts awarded
- Carpentry Contracts awarded,
- Participation arranged
- Construction complete
- Building electricity installed

## **Village Group 2**

### **Village Houses**

- Documentation complete
- Supply Contracts awarded
- Carpentry Contracts awarded
- Participation arranged
- Construction complete

### **Village Relocation**

Relocation complete

### **Public Buildings**

- Documentation complete
- Construction Contracts awarded
- Construction complete
- Maintenance program established

## 2.5 Irrigation Systems, Domestic Water and Sanitation

### 2.5.1 Issues

Priority issues are the provision of irrigation facilities for livelihood and domestic water and sanitation for basic needs and health.

All the resettlement households and most of the community buildings must be provided with domestic water supply and sanitation. In addition, irrigation infrastructure is to be provided.

Prior to reservoir inundation, irrigation water supply systems cannot be used for domestic supply. However, at this stage boreholes can be constructed in suitable areas.

Following reservoir inundation, lower area boreholes will no longer be accessible, although water table in the area will be higher and groundwater more accessible in general. At this stage it will also be possible to divert some water pumped from reservoir to the irrigation system for domestic purposes.

The locations of gully stop dams and ponds have will be identified when further local knowledge of the hydrology of the potential sites is available, and after village consultations on possible grazing areas.

Resettlement villages irrigation areas are above the reservoir full supply level, therefore pumping of irrigation water will be required.

### 2.5.2 Objectives / Measures

To design and construct appropriate irrigation conveyance and distribution systems, based on the topography of the areas, soil types, and on consultation with resettled communities.

To provide sufficient quantities of safe domestic water to all resettlers, following a community consultative procedure to determine the most appropriate and acceptable domestic water supply system

To consider a range (or combination) of possible options, including rainwater, water pumped from open wells, water pumped from lined boreholes, and water pumped from irrigation header tanks and filtered (following reservoir inundation)<sup>13</sup>

Where possible, and subject to water quality, irrigation systems will be designed to incorporate additional water supply for domestic use other than drinking

To ensure that all domestic water sources are protected from contamination.<sup>14</sup>

<sup>13</sup> Where gravity piped water supplies are used, water will be distributed to stand pipes located within household groups, with each standpipe serving approximately 5 households.

To encourage rainwater harvesting by presenting it to villagers as a preferred wet season source and a possible supplemental dry season source.

To provide clean water and sanitation facilities to public buildings as specified in the CA

To promote the link between clean water and sanitation to the resettlers through the provision of hygiene education (implemented by RMU) and provision of a latrine for each household. Appropriate types of latrine will be determined in consultation with communities.

To deliver appropriate training programs to communities to ensure that operation and maintenance of water supply, sanitation and irrigation facilities are conducted in a sustainable manner

Figure 6 (for reference information only) shows a schematic layout and location of the proposed Nam Pan Irrigation Scheme.

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<sup>14</sup> Details of a proposed filtration system are shown in SDP Volume 2 Figure 20-7

Figure 6: **Location of Proposed Nam Pan Irrigation Scheme.**

Note: high res picture removed from this draft to facilitate e-mailing. Low resolution version supplied for information as separate file:  
*“Figure 7: Location of Proposed Nam Pan Irrigation Scheme”.*

### 2.5.3 Obligations per CA

<b>Reference:</b>	<b>Description:</b>
Volume 2A, Schedule 4, Part 1, Section	
7.1.1, 7.1.2	Detailed surveys for suitability of village land areas
7.2.1	Prepare village location options
7.2.2	Ensure consultative and participatory approach in planning of village layouts (with RMU)
7.3.1	Develop village layout options through participatory planning (with RMU) and prepare technical plans to reflect village preferences
7.3.2	Assist RMU to consult Resettlers on development of Village Development Plans prepared by RO, and seek input from Resettlers.
7.3.3	Preference of resettlers to be primary factor in determining size and location of resettlement villages.
7.4.1	Prepare and move pilot village
7.5	Preparation of forest and land use plans for each village
7.6.1	Prepare detailed site and plot plans
7.7.2	Revision of Detailed Village Plans to reflect community consultations
7.8.1	Assist RMU to ensure the final choice of site is made by Resettlers in consultation with Company and GOL
7.8.2	Requirements to be satisfied prior to confirmation of sites
7.11.1	Ensure construction contractors prepare and implement site specific environmental plans for each site, in accordance with standards specified in CA, Schedule 4, Part 2
8.5.4 /5	Gully stop dams and associated wells (up to 1 per 5 families where physical conditions allow).
8.5.6	Irrigation and household water supply and distribution to each house and farm lot
8.5.7a	Water supply and sanitation for nursery schools
8.5.7b	Water supply and sanitation for primary schools
8.5.8	Water supply and sanitation for teachers' housing
8.5.10	Water supply and sanitation for health centres (2 No)
8.5.11	Water supply and sanitation for health centres' staff housing
8.5.13	Water supply and sanitation for meeting hall / village office
8.5.14	Water supply and sanitation for roofed market
8.5.16	Water supply to rice mill and workshop
8.5.20	Water supply to tree nursery
8.5..22	Company responsible for moving items of cultural heritage
8.6.1,	Resources to be provided to each household.
8.6.2	Construct toilet/bathroom for each family.
8.6.3	Provide water jar for toilet (one per family).
9.10.4	Village fish landing places
9.10.8	Employment opportunities
12.1.2	Follow GOL national and provincial policies and targets re potable water supply
12.2.1	Facilitate and strengthen all national health programs that are in place for sanitation and clean water supplies,
12.2.2	Assist RMU implement health education program for maintenance of water supply and sanitation facilities

**GoL Obligations (for reference)**

<b>Reference:</b>	<b>Description:</b>
Schedule 4, Part 1 Section	
7.3.4	RMU to advise RO of Resettlers' input and advice.
7.5.1	Nam Theun 2 Land Decree.
7.7.1	RMU to consult with Resettlers on Detailed Village Plans, provide rationale and relevant data, and seek input and advice
7.9.1	RMU to inform each Resettler of new location
8.5	GOL to ensure consultation with and/or participation by Resettlers incorporated into the process.
8.5.21	GOL to provide detailed plans to the Company regarding relocation of items of cultural heritage.
11.1.1	Set up Village Resettlement Committee in each village
15.1	Plateau Resettlers' Entitlements

**2.5.4 Scope of Work and Key Dates**

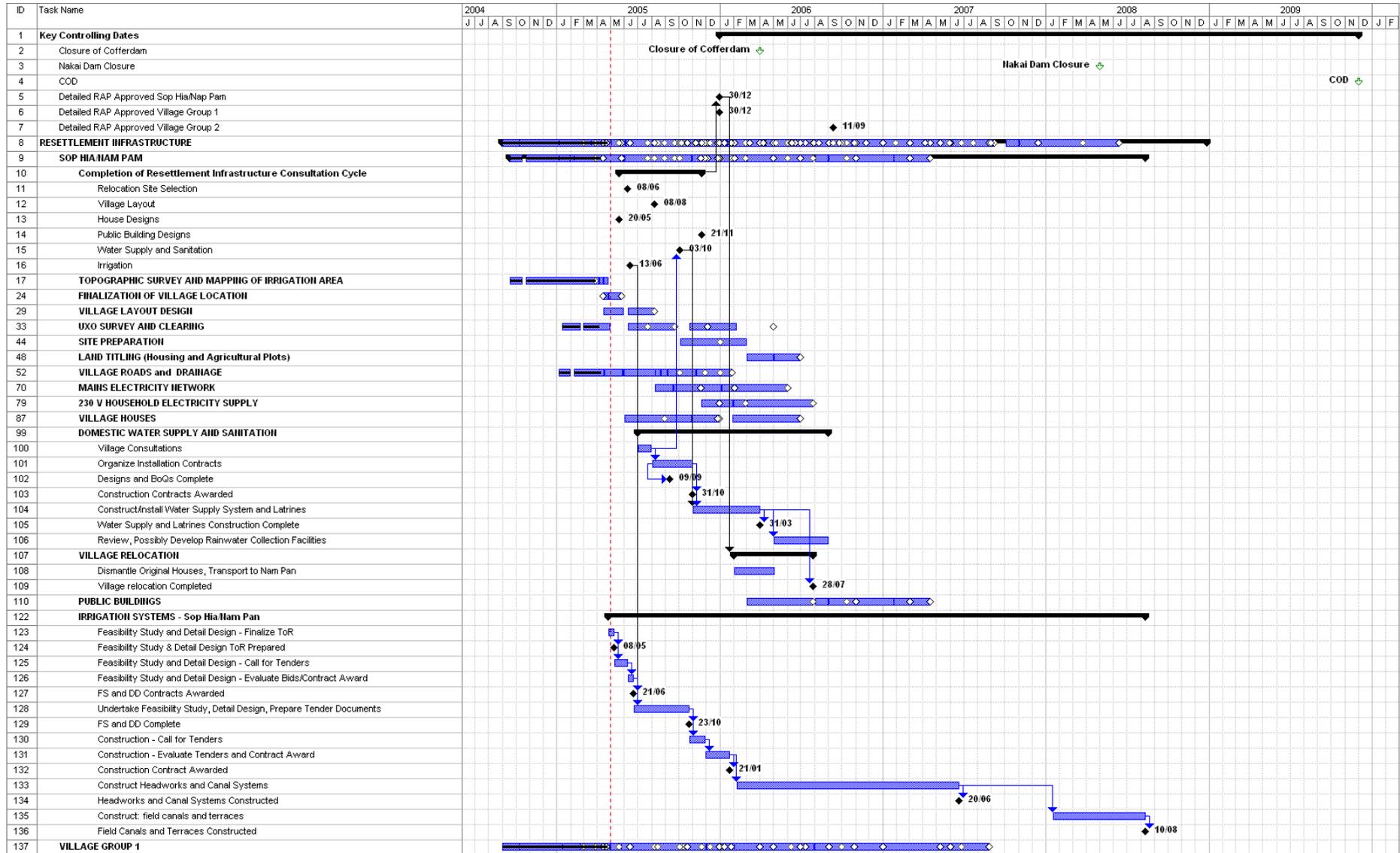
◆ denotes milestone(s)

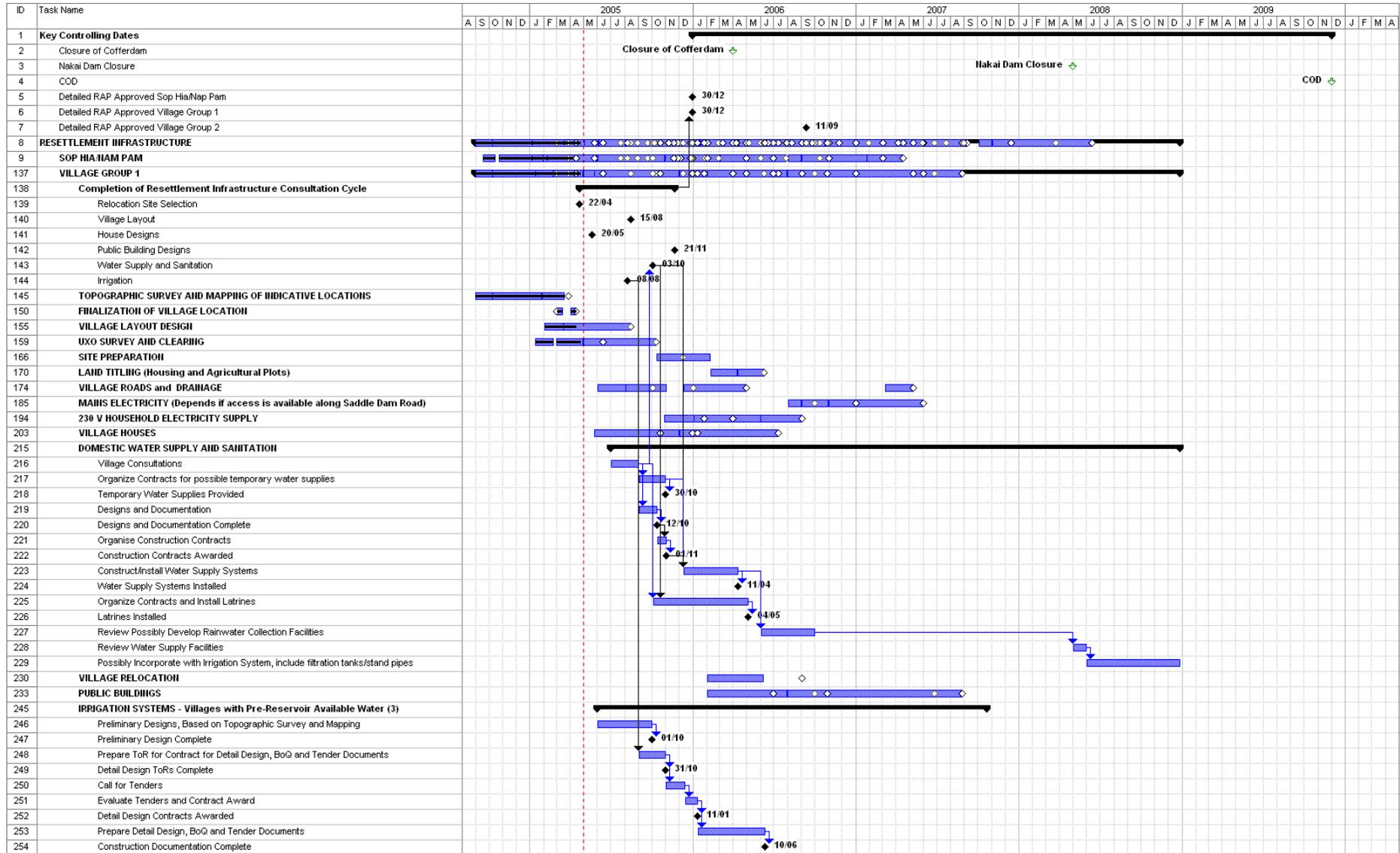
<b>SOP HIA/NAM PAM</b>	<b>Start</b>	<b>Finish</b>
<b>DOMESTIC WATER SUPPLY AND SANITATION</b>	<b>Jul-05</b>	<b>Aug-06</b>
Village Consultations	Jul-05	Jul-05
Organize Installation Contracts	Aug-05	Oct-05
<b>◆ Designs and BoQs Complete</b>	<b>Sep-05</b>	
<b>◆ Construction Contracts Awarded</b>	<b>Oct-05</b>	
Construct/install Water Supply System and Latrines	Nov-05	Mar-06
<b>◆ Water Supply and Latrines Construction Complete</b>	<b>Mar-06</b>	
Review, Possibly Develop Rainwater Collection Facilities	May-06	Aug-06
<b>◆ Village relocation Completed</b>	<b>Jul-06</b>	
<b>IRRIGATION SYSTEMS - Sop Hia/Nam Pan</b>	<b>Apr-05</b>	<b>Aug-08</b>
Feasibility Study and Detail Design - Finalize ToR	Apr-05	May-05
<b>◆ Feasibility Study &amp; Detail Design ToR Prepared</b>	<b>May-05</b>	
Feasibility Study and Detail Design - Call for Tenders	May-05	Jun-05
Feasibility Study and Detail Design - Evaluate Bids/Contract Award	Jun-05	Jun-05
<b>◆ FS and DD Contracts Awarded</b>	<b>Jun-05</b>	
Undertake Feasibility Study, Detail Design, Prepare Tender Documents	Jun-05	Oct-05
<b>◆ FS and DD Complete</b>	<b>Oct-05</b>	
Construction - Call for Tenders	Oct-05	Nov-05
Construction - Evaluate Tenders and Contract Award	Nov-05	Jan-06
<b>◆ Construction Contract Awarded</b>	<b>Jan-06</b>	
Construct Headworks and Canal Systems	Feb-06	Jun-07
<b>◆ Headworks and Canal Systems Constructed</b>	<b>Jun-07</b>	
Construct: field canals and terraces	Jan-08	Aug-08
<b>◆ Field Canals and Terraces Constructed</b>	<b>Aug-08</b>	

<b>VILLAGE GROUP 1</b>	<b>Start</b>	<b>Finish</b>
<b>DOMESTIC WATER SUPPLY AND SANITATION</b>	<b>Jul-05</b>	<b>Dec-08</b>
Village Consultations	Jul-05	Aug-05
Organize Contracts for possible temporary water supplies	Sep-05	Oct-05
<b>♦ Temporary Water Supplies Provided</b>	<b>Oct-05</b>	
Designs and Documentation	Sep-05	Oct-05
<b>♦ Designs and Documentation Complete</b>	<b>Oct-05</b>	
Organise Construction Contracts	Oct-05	Nov-05
<b>♦ Construction Contracts Awarded</b>	<b>Nov-05</b>	
Construct/install Water Supply Systems	Dec-05	Apr-06
<b>♦ Water Supply Systems Installed</b>	<b>Apr-06</b>	
Organize Contracts and Install Latrines	Oct-05	May-06
<b>♦ Latrines Installed</b>	<b>May-06</b>	
Review Possibly Develop Rainwater Collection Facilities	Jun-06	Sep-06
Review Water Supply Facilities	May-08	May-08
Possibly Incorporate with Irrigation System, include filtration tanks/stand pipes	Jun-08	Dec-08
<b>IRRIGATION SYSTEMS - Villages with Pre-Reservoir Available Water (3)</b>	<b>Jun-05</b>	<b>Oct-07</b>
Preliminary Designs, Based on Topographic Survey and Mapping	Jun-05	Oct-05
<b>♦ Preliminary Design Complete</b>	<b>Oct-05</b>	
Prepare ToR for Contract for Detail Design, BoQ and Tender Documents	Sep-05	Oct-05
<b>♦ Detail Design ToRs Complete</b>	<b>Oct-05</b>	
Call for Tenders	Nov-05	Dec-05
Evaluate Tenders and Contract Award	Dec-05	Jan-06
<b>♦ Detail Design Contracts Awarded</b>	<b>Jan-06</b>	
Prepare Detail Design, BoQ and Tender Documents	Jan-06	Jun-06
<b>♦ Construction Documentation Complete</b>	<b>Jun-06</b>	
Construction - Call for Tenders	Jun-06	Aug-06
Evaluate and Contract Award	Aug-06	Oct-06
<b>♦ Construction Contract Awarded</b>	<b>Oct-06</b>	
Construct: intake canals, pump stations, header tanks, distribution systems	Oct-06	May-07
<b>♦ Intake canals, pump stations, header tanks, dist systems constructed</b>	<b>May-07</b>	
Construct: on-farm distribution systems and terraces	May-07	Oct-07
<b>♦ On-farm distribution systems and terraces constructed</b>	<b>Oct-07</b>	
<b>IRRIGATION SYSTEMS - Villages Requiring Nakai Reservoir Water (4)</b>	<b>Jun-05</b>	<b>Aug-08</b>
Preliminary Designs, Based on Topographic Survey and Mapping	Jun-05	Oct-05
<b>♦ Preliminary Designs Complete</b>	<b>Oct-05</b>	
Prepare ToR for Contracts for Detail Design, BoQ and Tender Documents	Sep-05	Oct-05
<b>♦ Detail Design Documentation Prepared</b>	<b>Oct-05</b>	
Call for Tenders	Nov-05	Dec-05
Evaluate Tenders and Contract Award	Dec-05	Jan-06
<b>♦ Detail Design Contract Awarded</b>	<b>Jan-06</b>	
Prepare Detail Design, BoQ and Bid Documents	Jan-06	Jun-06
<b>♦ Detail Design &amp; Documentation Complete</b>	<b>Jun-06</b>	
Construction - Call for Tenders	Jun-06	Aug-06
Evaluate and Contract Award	Aug-06	Oct-06
<b>♦ Construction Contract Awarded</b>	<b>Oct-06</b>	
Construct: intake canals, pump station foundations/pipelines, header tanks	Nov-06	May-07
<b>♦ Intake canals, pump stn foundations/pipes, header tanks constructed</b>	<b>May-07</b>	
Construct: conveyance and distribution canal/pipe systems, install pumps	Dec-07	Jul-08
<b>♦ Conveyance and distn canal/pipe systems constructed, pumps installed</b>	<b>Jul-08</b>	
Construct: field distribution systems	Feb-08	Jun-08

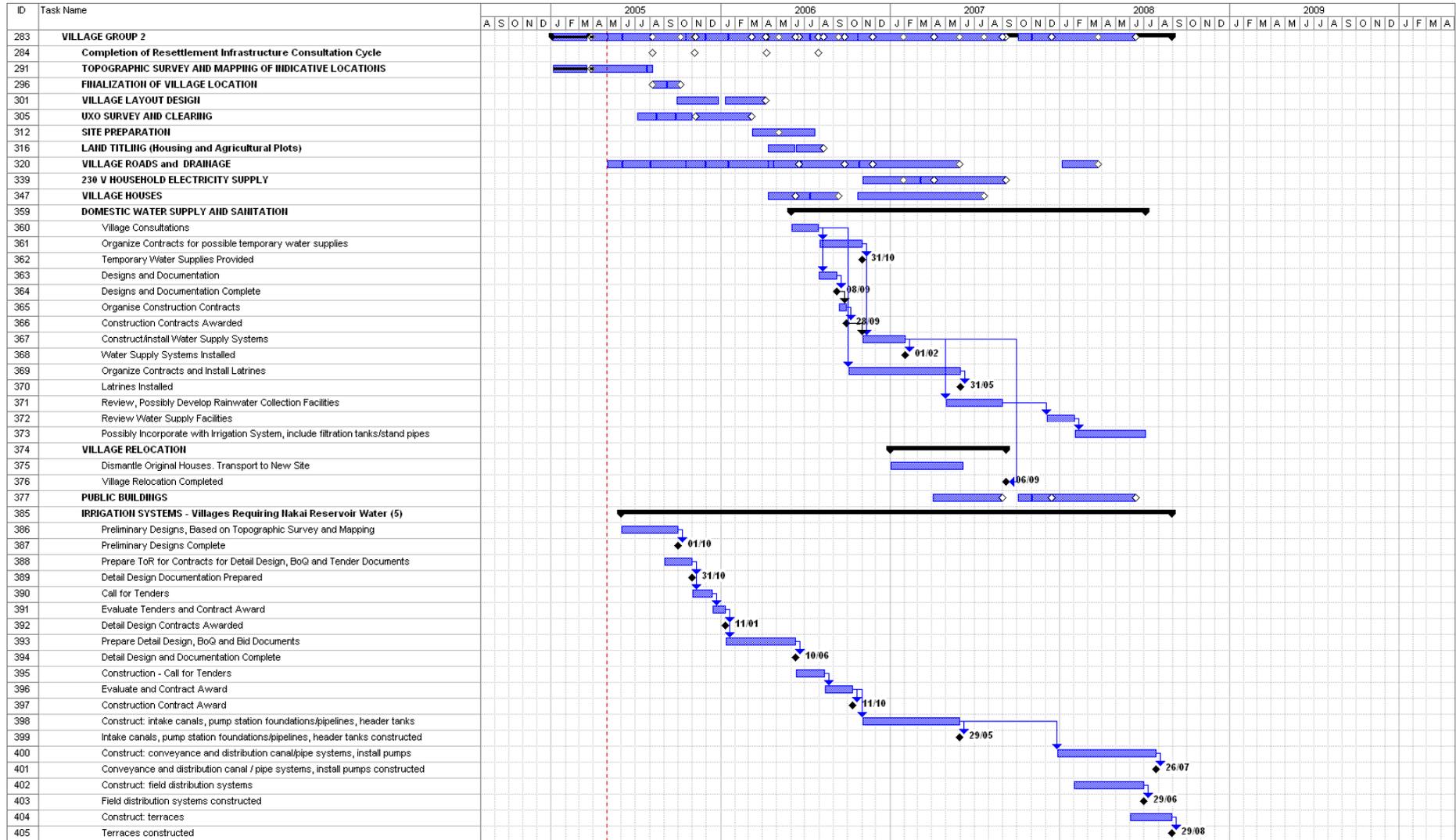
<b>VILLAGE GROUP 1</b>	<b>Start</b>	<b>Finish</b>
<b>DOMESTIC WATER SUPPLY AND SANITATION</b>	<b>Jul-05</b>	<b>Dec-08</b>
♦ <b>Field Distribution Systems Constructed</b>	<b>Jun-08</b>	
Construct: terraces	Jun-08	Aug-08
♦ <b>Terraces Constructed</b>	<b>Aug-08</b>	

<b>VILLAGE GROUP 2</b>	<b>Start</b>	<b>Finish</b>
<b>DOMESTIC WATER SUPPLY AND SANITATION</b>	<b>Jun-06</b>	<b>Jul-08</b>
Village Consultations	Jun-06	Jul-06
Organize Contracts for possible temporary water supplies	Aug-06	Oct-06
♦ <b>Temporary Water Supplies Provided</b>	<b>Oct-06</b>	
Designs and Documentation	Jul-06	Sep-06
♦ <b>Designs and Documentation Complete</b>	<b>Sep-06</b>	
Organise Construction Contracts	Sep-06	Sep-06
♦ <b>Construction Contracts Awarded</b>	<b>Sep-06</b>	
Construct/install Water Supply Systems	Nov-06	Feb-07
Organize Contracts and Install Latrines	Oct-06	May-07
♦ <b>Water Supply Systems Installed</b>	<b>Feb-07</b>	
♦ <b>Latrines Installed</b>	<b>May-07</b>	
Review, Possibly Develop Rainwater Collection Facilities	May-07	Aug-07
Review Water Supply Facilities	Dec-07	Feb-08
Possibly Incorporate with Irrigation System, include filtration tanks/stand pipes	Feb-08	Jul-08
<b>IRRIGATION SYSTEMS - Villages Requiring Nakai Reservoir Water (5)</b>	<b>Jun-05</b>	<b>Aug-08</b>
Preliminary Designs, Based on Topographic Survey and Mapping	Jun-05	Oct-05
♦ <b>Preliminary Designs Complete</b>	<b>Oct-05</b>	
Prepare ToR for Contracts for Detail Design, BoQ and Tender Documents	Sep-05	Oct-05
♦ <b>Detail Design Documentation Prepared</b>	<b>Oct-05</b>	
Call for Tenders	Nov-05	Dec-05
Evaluate Tenders and Contract Award	Dec-05	Jan-06
♦ <b>Detail Design Contracts Awarded</b>	<b>Jan-06</b>	
Prepare Detail Design, BoQ and Bid Documents	Jan-06	Jun-06
♦ <b>Detail Design and Documentation Complete</b>	<b>Jun-06</b>	
Construction - Call for Tenders	Jun-06	Aug-06
Evaluate and Contract Award	Aug-06	Oct-06
♦ <b>Construction Contract Award</b>	<b>Oct-06</b>	
Construct: intake canals, pump station foundations/pipelines, header tanks	Nov-06	May-07
♦ <b>Intake canals, pump stn foundations/pipes, header tanks constructed</b>	<b>May-07</b>	
Construct: conveyance and distribution canal/pipe systems, install pumps	Dec-07	Jul-08
♦ <b>Conveyance and distn canal / pipe systems, install pumps constructed</b>	<b>Jul-08</b>	
Construct: field distribution systems	Feb-08	Jun-08
♦ <b>Field distribution systems constructed</b>	<b>Jun-08</b>	
Construct: terraces	Jun-08	Aug-08
♦ <b>Terraces constructed</b>	<b>Aug-08</b>	









### 2.5.5 Arrangements for Procurement & Implementation

<i>Description</i>	<i>Activity</i>	<i>Implementation</i>	<i>Village Consultation or participation</i>
Groundwater Assessment	Tendering procedures	NTPC	None
	Investigations	Private companies	None
Wells / Boreholes	Tendering procedures	NTPC	None
	Locate and design	GoL (Nam Saat)	Yes – consultations
	Construction	GoL and resettlers	Yes – participation
	Assess supply success	RMU and villagers	Yes - consultations
Rainwater Collection	Prepare sketches and BoQs	GoL/RMU	Yes - consultations
	Tendering procedures for supply contracts	NTPC/RMU	None
	Tank placement, installation of guttering and down-pipes	Villagers	Yes-participation
	Assess supply success	RMU and villagers	Yes – consultation
Incorporate with Irrigation Supply	Assess feasibility of gravity supply from irrigation systems	RMU and villagers	Yes – consultation
	Prepare drawings and BoQs	GoL/RMU	Yes – consultations
	Construction tendering procedures	NTPC/RMU	None
	Install gravity supplies	Contractors	Yes – participation
Monitor water quality	Samples and analysis	NTPC/GoL	Yes – participation
Sanitation	Review and choose latrine type	RMU/GoL/WHO	Yes – consultations
	Prepare BoQs	RMU/GoL	None
	Tendering procedures for supply contracts	NTPC/RMU	None
	Installation	RMU and villages	Participation
Hygiene education	Undertake workshops	RMU/GoL	Participation
Irrigation Systems	Topo Survey & Mapping	Local Firms	No
	Soil Survey and Mapping		
	Geotechnical Investigations		
	Further consultation with resettlers	NTPC/RMU	Yes - consultation
	Tendering procedures	NTPC	No
	Design	Local Firms	Yes - consultation
	Construction:	Contractors	Yes – consultation as required
	Supply canal		
	Pontoon pump station		
	Steel delivery pipes		
	Header tanks and stilling basins		
	Pipeline and canal distribution systems		

Source: SDP Vol 2 Table 20-2; 22.10

### 2.5.6 Monitoring

Refer also to Section 1.9 above – the following table shows specific parameters relevant to this sub-component:

Parameter	Monitored by:
Contracts awarded	NTPC
Design and documentation progress against schedule and budget	
Construction progress against schedule and budget	
Compliance with construction standards per CA	
Numbers and types of systems installed	
Maintenance carried out and participation of PAPs	
Spare parts supply chain	
Water quality from all sources	
Well discharges and depths	
Operation and maintenance costs for systems <sup>15</sup>	
Location of all facilities, including buried pipes and location of all latrines in relation to wells.	
Records of householder participation in design/ construction.	
Records of all training delivered and participation in training.	
Design and implementation of an on-the-job training program for resettlers	
Establishment and implementation of a maintenance program, with participation of resettlers	

### 2.5.7 Milestones

#### Irrigation Systems – Sop Hia / Nam Pan:

- Feasibility Study and Detail Design ToRs prepared
- Feasibility Study and Detail Design contracts awarded
- Feasibility Study and Detail Design Complete
- Construction Contract Award
- Headworks & Canal Systems constructed
- Field Canals & Terraces constructed

#### Irrigation Systems – Villages with Pre-Reservoir Available Water (3 No from Village Group 1):

- Preliminary Design Complete
- Detail Design ToRs Complete
- Detail Design Contracts Awarded
- Construction Documentation Complete
- Construction Contract Award
- Intake canals, pump stations, header tanks, distribution systems constructed
- On-farm distribution systems and terraces constructed

<sup>15</sup> SDP Vol 2: 20.8.3: The costs of operation and maintenance of the water supply and irrigation systems will be borne by NTPC prior to COD, and by the Social and Environmental (SERF) after COD.

**Irrigation Systems – Villages Requiring Nakai Reservoir Water (9 No from Village Groups 1 and 2.):**

- Preliminary Designs Complete
- Detail Design Documentation prepared
- Detail Design contracts awarded
- Detail Design Complete
- Construction Contract Award
- Intake canals, pump station foundations/pipelines, header tanks constructed
- Conveyance and distribution canal / pipe systems, install pumps constructed
- Field distribution systems constructed
- Terraces, remaining villages constructed

**Domestic Water Supply and Sanitation**

**Sop Hia / Nam Pan:**

- Designs and BOQs complete
- Construction/Installation contracts awarded
- Construction of water supply systems and latrines complete

**Village Group 1:**

- Temporary water supplies provided as required
- Designs and Documentation complete
- Water Supply Construction contracts awarded
- Water Supply systems installed
- Latrines installed

**Village Group 2:**

- Temporary water supplies provided as required
- Designs and Documentation complete
- Water Supply Construction contracts awarded
- Water Supply systems installed
- Latrines installed

### 3 Livelihood Plans (Nakai Plateau: Zones 1 and 3)

The plateau communities have traditionally depended on a range of food and income sources. Aside from rice cultivation, they subsist on livestock, fishing, hunting and gathering of forest products and to a small extent wage labour. The Resettlers will be able to choose from a range of livelihood options that the NT2 Project will support.

- Agriculture: wet and dry season cropping with irrigation water pumped from Nam Theun 2 Reservoir;
- Livestock: raised on a mixture of feed-crops or forages grown on the irrigated areas and grazing under the forest of the resettlement area and drawdown zone;
- Community Forestry: management and harvest of natural forest, reforestation of degraded forest and primary and secondary wood processing providing both employment and dividends;
- Fisheries: subsistence and commercial fishing in the newly created reservoir;
- Non-farm employment: wage or self employment in a range of activities such as small shops, repair and fabrication shops, handicrafts, primary produce trading and construction labour.

#### 3.1 Integration of Livelihood Options

While the project will aim to ensure that the plateau people are able to derive a reliable income to sustain a reasonable standard of living, the choice or adoption of one, some or all of these of the livelihood options (above) will not be the same for each family. Key considerations in choice or adoption of livelihood activities include:

- **Family size and composition:** the amount of labour available as well as the basic food and income requirement;
- **Experience in any of the livelihood activity:** For example, some current riverine fishers may adapt better to reservoir fisheries, or current wet and/or dry season paddy farmers may adapt quicker to intensive agriculture;
- **Employment skills:** Some family members may already be experienced, as tree loggers, carpenters, machinery repairers, for example; and
- **Resource opportunities** presented in or near each new village location. Some village resettlements locations - chosen by the villagers themselves - may provide better fishing opportunities, or better grazing areas, for example.

In addition, the particular way in which any family may integrate its livelihood options will also depend on the technical feasibility of that option in any particular location, which will dictate the yield, quality of yields, the cost of inputs and the returns of marketing the produce.

The other consideration is the **timing of** livelihood option availability, as follows:

- not all of the livelihood opportunities will come on stream, or be available, at the same time - irrigated agriculture and fisheries will only be widely available after reservoir impoundment (PIOP page 25, SDP Table 18-7); and
- the period of relocation and construction of the NT2 Project will create temporary income generating opportunities, which could either (a) interfere with the smooth adoption of the long term resettlement options or (b) complement the gradual adoption of the resettlement options, at least two of which will not be available until construction is complete.

Thus, depending on experience, skills and resources availability, each household will develop their own livelihood system (combination of livelihood options or household livelihood mix) (SDP 16.3).

### 3.2 Detailed Household Livelihood Planning

Detailed long term livelihood planning at the household level will not be undertaken prior to actual relocation (the uniform entitlement of 0.65 ha of irrigated and developed land per family will be provided to all). However, the relocation period will see detailed transitional livelihood planning (SDP 16.2) This will include the provision of labour for construction activities, in which case the projects CD staff and the District labour committee will work with the village committees to ensure equity in the allocation of construction jobs to each villages.

It should be realised that some current agriculture activities - shifting cultivation in the future reservoir area, paddy rice farming (near Nakai Dtai and Naki Neua, for instance) and livestock raising, may be able to continue to some extent, on the plateau proper during this transition period if not adversely affected by the coffer dam backwater affects.

During the transition period, household socio-economic monitoring will identify how each family has integrated its active between agriculture (irrigated agriculture for a few villages) livestock raising, employment in forestry, and off-farm employment. The way that each family undertakes (and integrates) its livelihoods will be summarised at the biannual livelihood workshops. Indeed, village level plans (1.2 above) will necessarily be based on the requirements and aspirations of each household in the village.

The extent to which the Project actually follows the livelihood integration of each and every family will have to be ascertained with experience, although the monitoring of each household should provided some family level information. As a general rule, livelihood planning is done on the basis of a village and then groups within a village - paddy rice groups, vegetable groups, livestock groups etc. However, when the reservoir is impounded and the full range of options becomes available - especially irrigated agriculture and reservoir fisheries, livelihood planning of each household will most likely have to be revisited.

In addition, the livelihood plans and actual implementation of these plans by vulnerable families will have to be followed on an individual basis (by village committees assisted by project CD staff) , even during the transition period.

### 3.3 Organisation

Figure 7: Proposed Reservoir Management

Source: SDP

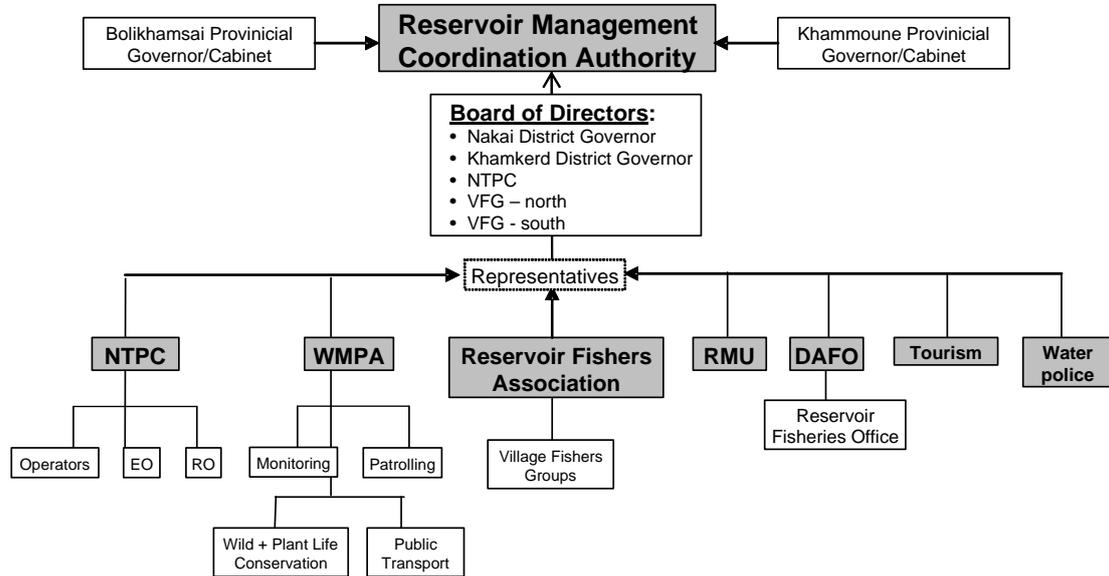


Figure 8: Possible Organizational Linkages between Reservoir Stakeholders

Source: SDP

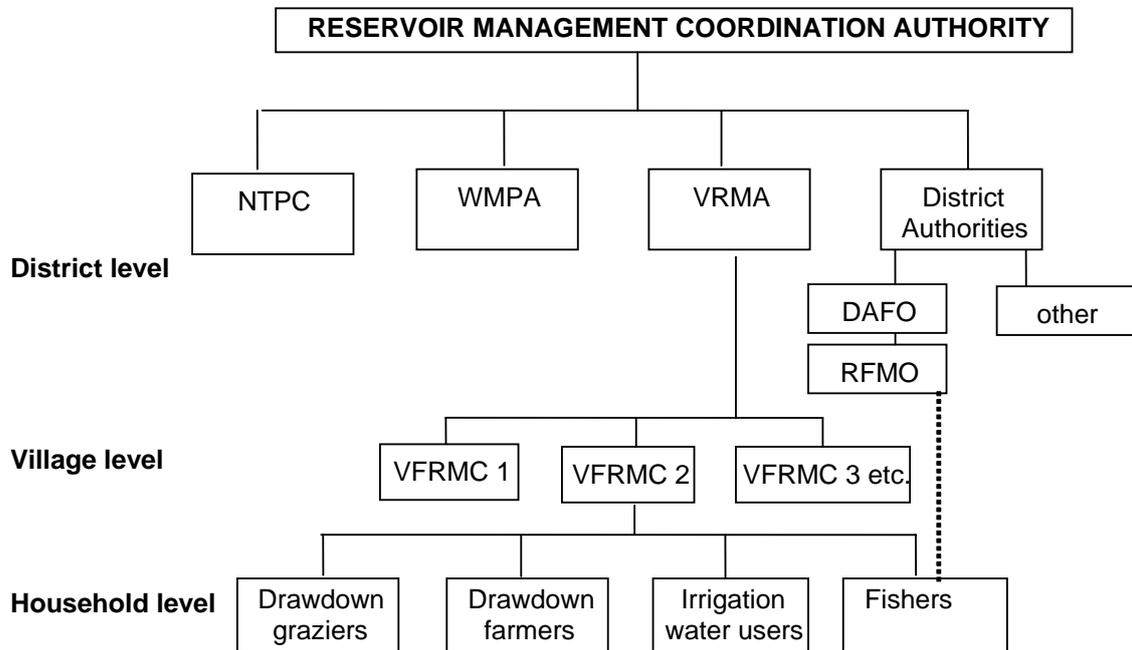
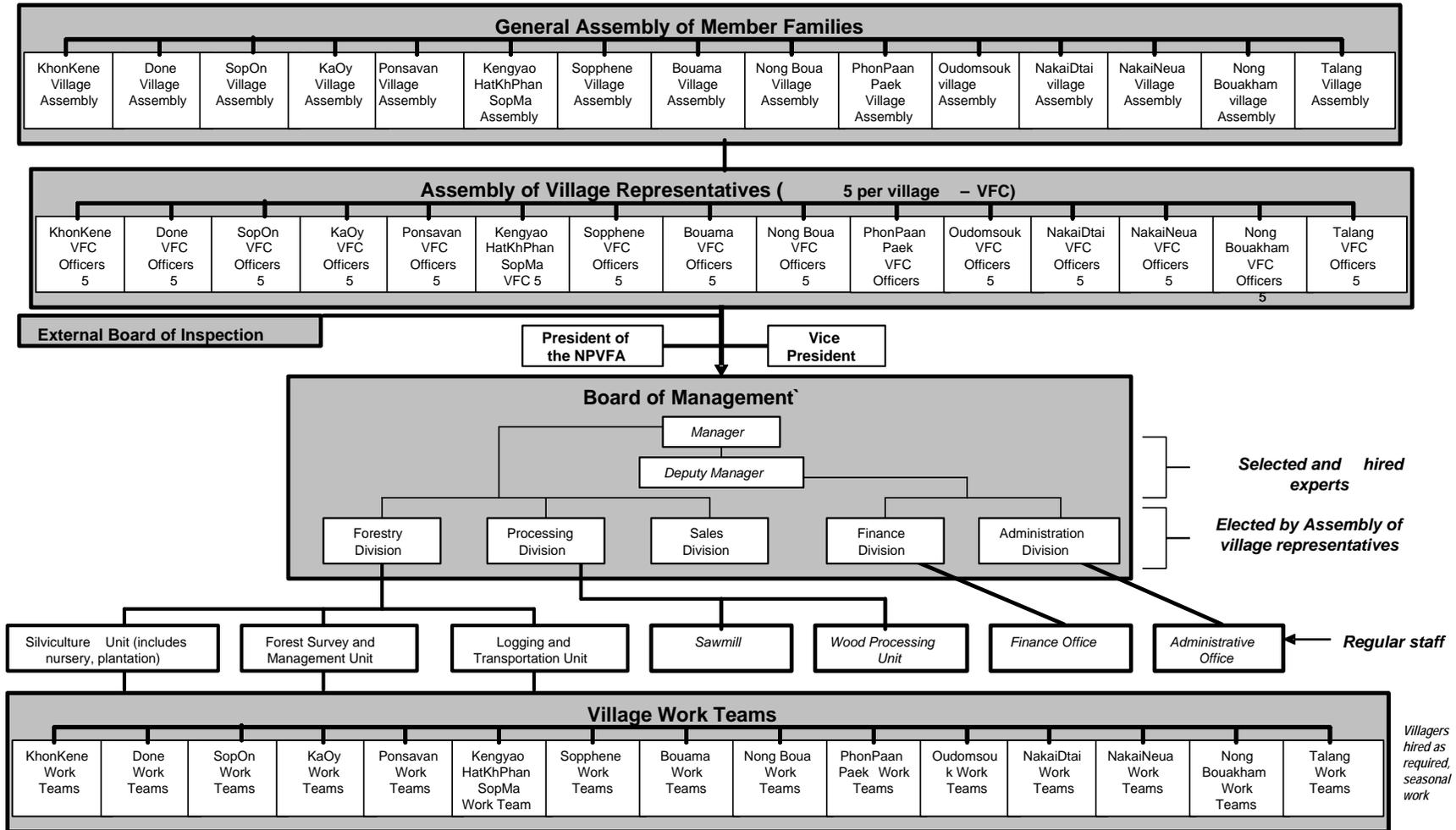


Figure 9: Indicative Organization of the NPVFA

Source: SDP



### 3.4 Nakai Plateau Forestry Development Program

#### 3.4.1 Issues

Under current administrative and management arrangements, local communities receive little benefit from commercial forestry operations.

Villagers are not currently authorised to engage in timber harvesting for commercial purposes, but have legal rights to 5 cu m per family to build houses for newly established families.

Forest resources provide for rural energy needs, fodder, housing, fencing, wildlife and non timber forest products (NTFP).

Logging and shifting cultivation have in the past contributed to degradation of much of the forested land.

Development of organised community forestry on the Nakai Plateau has good potential to provide diversified income and employment opportunities.

The GOL has allocated the whole forest area on the southern side of Nakai Reservoir as Resettlement Area to be used by re-settlers as a community forest for sustainable commercial harvesting and timber utilization (SDP 23.1.2).

There are 18,106 ha of forestland in the resettlement area or 88 percent of the whole area. The size by forest ecotype and average volume per hectare is presented below:

<i>Forest Type</i>	<i>Area (ha)</i>	<i>Volume (Cu m/ has)</i>
Dry Dipterocarp	310	35
Dry Evergreen	3,684	126
Mixed Deciduous	3,408	74
Mixed Broadleaf and Pine	10,704	103
Total	18,106	100

Source: SDP Table 23-5

Through sustainable forest management, the communities can harvest up to 6,000 cu m of timber on a sustainable basis from the 5,590 ha of production forest. The profits from timber production can be used as dividends and reinvested in employment generating forest management activities (SDP 23.1.3).

#### 3.4.2 Objectives / Measures

Establish and train a Board of Management (NPVFA) to manage forest resources and run forestry enterprises on behalf of the PAP.

Ensure that PAPs participate in the planning and implementation of, and obtain financial benefits, from commercial forest operations conducted in a sustainable manner.

Increase off-farm employment in the Resettlement Area through sustainable forest management, harvesting and processing of forest products;

Provide a regular income to resettled households in the form of annual dividends (or other benefit mechanisms as outlined in legislation and accepted by the NPVFA) from the net revenue of organized forestry operation;

Provide self-sufficiency in timber, fuel-wood, under-forest pasture and other NTFP in the Resettlement Area;

Protect watersheds especially in steep areas and conserving biodiversity, both in the site and in specially zoned areas as well as sites of scenic, historical and cultural significance.

Provide organisation and support for participatory planning and zoning of stocked and degraded forest lands at village level.

Facilitate participatory planning and provide technical and financial assistance to domestic NTFP development.

Assist in the development of a Forest Management Plan, to be updated every 5 years, to provide for the long term management of the resettlement areas.

### 3.4.3 Obligations per CA

#### NTPC Obligations

<i>Reference:</i>	<i>Description:</i>
Schedule 4, Part 1 Section	
7.3.2	Assist RMU in consulting Resettlers on development of Village Development Plans
7.5.2	Preparation of Forest and Land Use Plans for each village - of participatory resource and land use management planning.
8.5.1	Construction of forest management roads to specifications per forest management plan
8.5.20	Tree nursery (at least one per village) 120 m2, to be established as part of the agriculture and forestry programs.
9.1.1	Opportunities for employment for resettlers
9.1.3	Assist RMU to consult with villagers on livelihood issues
9.1.4	Steps to mitigate additional risks to ethnic groups, including monitoring of non timber forest products (NTFP) harvesting for sustainability.
9.2	Demonstration Farm Nursery
9.5	Identify Forest Resources
9.6	Community Forestry Programs
9.6.1	Plan for sustainable forestry
9.9.1	Assist RMU to consult with Villagers in Livelihood Package
10.2	Assist RMU training for resettlers on new farming techniques (forestry management)
10.4.1	Assist RMU training on forestry management.
10.5	Assist RMU with provision of Other Livelihood Equipment (sawmill)
11.2	Training needs assessment with technical assistance for RMU, DRWGs and VRCs
11.4	Assist RMU with development of Community Development Plan
12.3.1	Assist RMU to coordinate the provision of income support
12.3.3	Opportunity for Resettlers to participate in employment activities
15.1(a)4.2	Compensation and rehabilitation measures for Resettlers – forest based livelihoods
15.1(a) 9.3	Wage labour

**GoL Obligations (for reference)**

<b>Reference:</b>	<b>Description:</b>
Schedule 4, Part 1 Section	
7.5.1	Nam Theun 2 Land Decree.
9.1.2	Forest resources in Resettlement Area for exclusive use of Plateau Resettlers for seventy (70) years from the establishment of the NPVFA
10.6.1	Hand over community forest
11.5.1	RMU to consult with villages on community development plan.

### 3.4.4 Scope of Work and Key Dates

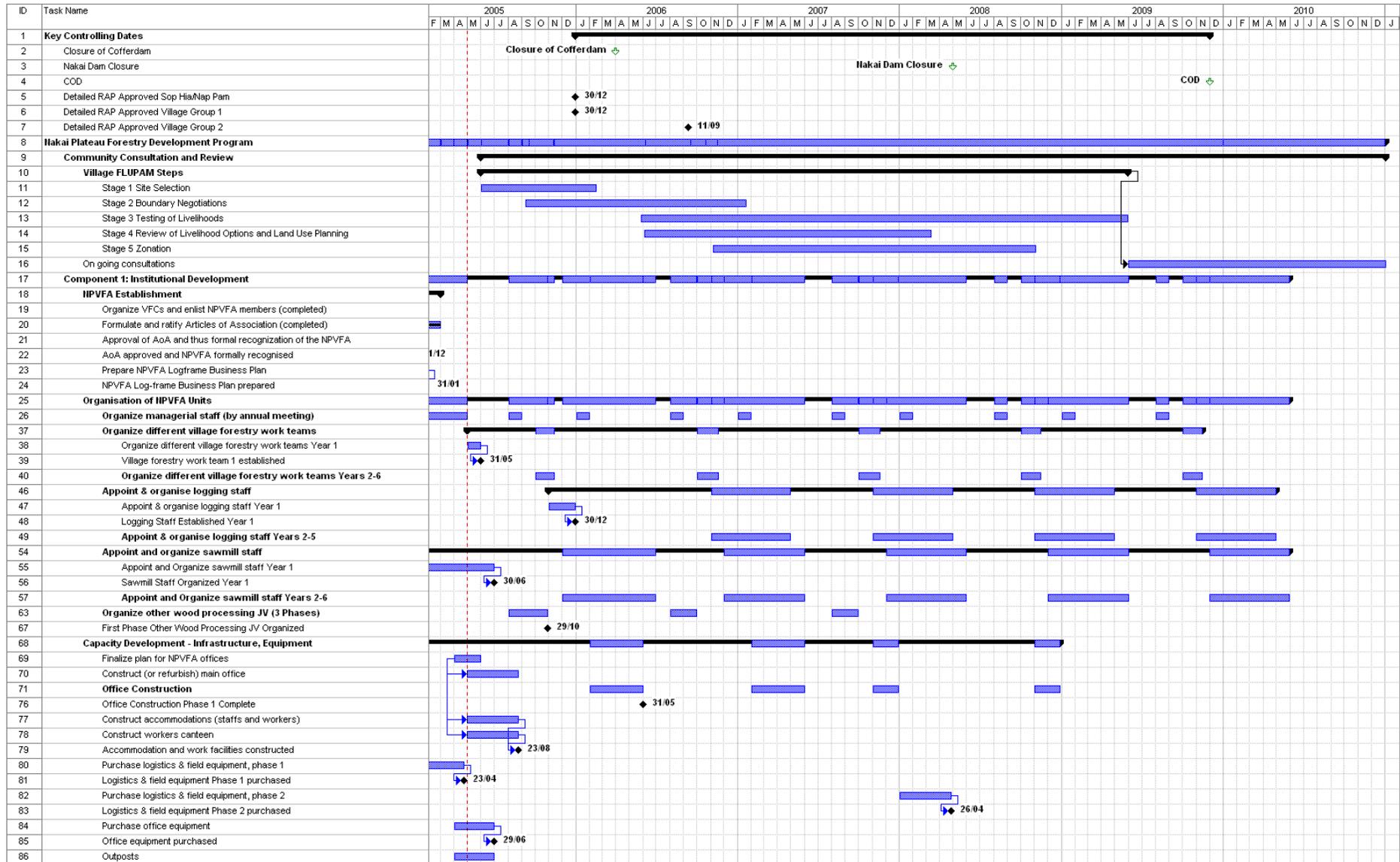
◆ denotes milestone(s)

	<b>Start</b>	<b>Finish</b>
<b>Nakai Plateau Forestry Development Program</b>		
<b>Community Consultation and Review</b>	<b>Jun-05</b>	<b>Jan-11</b>
<b>Village FLUPAM Steps</b>	<b>Jun-05</b>	<b>May-09</b>
Stage 1 Site Selection	Jun-05	Feb-06
Stage 2 Boundary Negotiations	Sep-05	Jan-07
Stage 3 Testing of Livelihoods	May-06	May-09
Stage 4 Review of Livelihood Options and Land Use Planning	Jun-06	Mar-08
Stage 5 Zonation	Nov-06	Nov-08
On going consultations	May-09	Jan-11
<b>Component 1: Institutional Development</b>	<b>Jul-04</b>	<b>May-10</b>
<b>NPVFA Establishment</b>	<b>Jul-04</b>	<b>Feb-05</b>
Organize VFCs and enlist NPVFA members (completed)	Jul-04	Jul-04
Formulate and ratify Articles of Association (completed)	Jan-05	Feb-05
Approval of AoA and thus formal recognition of the NPVFA	Aug-04	Dec-04
◆ <b>AoA approved and NPVFA formally recognised</b>		<b>Dec-04</b>
Prepare NPVFA Logframe Business Plan	Dec-04	Jan-05
◆ <b>NPVFA Log-frame Business Plan prepared</b>		<b>Jan-05</b>
<b>Organisation of NPVFA Units</b>	Nov-04	May-10
Organize managerial staff (by annual meeting)	Nov-04	Aug-09
Organize different village forestry work teams	May-05	Nov-09
Organize different village forestry work teams Year 1	May-05	May-05
◆ <b>Village forestry work team 1 established</b>		<b>May-05</b>
Organize different village forestry work teams Years 2-6	Oct-05	Nov-09
Appoint & organise logging staff	Nov-05	Apr-10
Appoint & organise logging staff Year 1	Nov-05	Dec-05
◆ <b>Logging Staff Established Year 1</b>		<b>Dec-05</b>
Appoint & organise logging staff Years 2-5	Nov-06	Apr-10
Appoint and organize sawmill staff	Dec-04	May-10
Appoint and Organize sawmill staff Year 1	Dec-04	Jun-05
◆ <b>Sawmill Staff Organized Year 1</b>		<b>Jun-05</b>
Appoint and Organize sawmill staff Years 2-6	Dec-05	May-10
Organize other wood processing JV (3 Phases)	Aug-05	Sep-07
◆ <b>First Phase Other Wood Processing JV Organized</b>		<b>Oct-05</b>
<b>Capacity Development - Infrastructure, Equipment</b>	<b>Jan-05</b>	<b>Dec-08</b>
Finalize plan for NPVFA offices	Apr-05	May-05
Construct (or refurbish) main office	Apr-05	Aug-05
Office Construction	Feb-06	Dec-08
◆ <b>Office Construction Phase 1 Complete</b>		<b>May-06</b>
Construct accommodations (staffs and workers)	Apr-05	Aug-05
Construct workers canteen	Apr-05	Aug-05
◆ <b>Accommodation and work facilities constructed</b>		<b>Aug-05</b>
Purchase logistics & field equipment, phase 1	Jan-05	Apr-05
◆ <b>Logistics &amp; field equipment Phase 1 purchased</b>		<b>Apr-05</b>
Purchase logistics & field equipment, phase 2	Jan-08	Apr-08
◆ <b>Logistics &amp; field equipment Phase 2 purchased</b>		<b>Apr-08</b>
Purchase office equipment	Apr-05	Jun-05
◆ <b>Office equipment purchased</b>		<b>Jun-05</b>
Outposts	Apr-05	Jun-05

	<b>Start</b>	<b>Finish</b>
<b>Nakai Plateau Forestry Development Program</b>		
<b>Capacity Development: Training NPVFA Units</b>	<b>May-05</b>	<b>Dec-09</b>
Training of VFC: Village Forestry Committees (Admin/Fin)	Jun-05	Jul-05
♦ <b>VFC Training Complete</b>		<b>Jul-05</b>
Training of NPVFA management staff - production & inventories	Jul-05	Aug-05
Training of NPVFA in business planning and management	Jul-05	Aug-05
♦ <b>NPVFA training complete</b>		<b>Aug-05</b>
Monthly and quarterly Board reporting/performance (continuing)	May-05	Dec-09
<b>Component 2: Forest Management</b>	<b>Jul-04</b>	<b>May-10</b>
<b>Resource Assessment and Management Planning</b>	<b>Jul-04</b>	<b>Dec-08</b>
Indicative survey - 1% (completed 2004)	Jul-04	Jul-04
Survey 100% of resettlement sites (agric and housing land)	Jul-04	Apr-05
♦ <b>100% of resettlement sites surveyed</b>		<b>Apr-05</b>
Survey - 100% - of Project Lands in RA	Jul-04	Mar-05
♦ <b>100% of Project Lands in RA surveyed</b>		<b>Mar-05</b>
<b>Investigations to improve management zonation</b>	<b>Nov-04</b>	<b>Dec-08</b>
Investigations to improve management zonation 1	Nov-04	Mar-05
♦ <b>First management zonation investigations completed</b>		<b>Mar-05</b>
Investigations to improve management zonation 2	Dec-05	Mar-06
Investigations to improve management zonation 3	Nov-08	Dec-08
Production Forest Survey - 100%	Nov-07	Dec-08
♦ <b>Production Forest Surveyed</b>		<b>Dec-08</b>
Finalize Forest Management Agreement	May-05	Sep-05
Forest Management Agreement Finalized	Sep-05	Sep-05
Finalize Forest Management Plans	Jan-07	Feb-07
Forest Management Plans Finalized	Feb-07	Feb-07
<b>Logging Planning - Project (Construction) Lands</b>	<b>Dec-04</b>	<b>Mar-10</b>
Pre-harvest inventory and tree marking	May-05	Mar-10
Logging planning	May-05	May-09
Apply for quota for salvage logging	Dec-04	Jul-06
Secure salvage harvesting quota	Dec-04	Aug-06
♦ <b>Pre-harvest inventory and tree marking complete 1</b>		<b>May-05</b>
♦ <b>Logging plan complete 1</b>		<b>May-05</b>
♦ <b>Salvage harvesting quota secured 1</b>		<b>Feb-05</b>
<b>Harvest/Sustainable Logging Planning</b>	<b>Nov-06</b>	<b>Sep-09</b>
Pre harvest (100%) inventory tree marking	Nov-06	May-09
♦ <b>Pre-harvest (100%) inventory tree marking complete 1</b>		<b>May-07</b>
Apply for quota	Jun-07	Jul-09
Secure sustainable logging quota	Sep-07	Sep-09
♦ <b>Sustainable logging quota secured 1</b>		<b>Sep-07</b>
<b>Regeneration and Plantations</b>	<b>Jan-05</b>	<b>Dec-09</b>
Draft/Finalize annual regeneration program	May-05	Jun-05
♦ <b>Annual regeneration program finalised</b>		<b>Jun-05</b>
Establish and maintain nursery	Jan-05	Dec-09
♦ <b>Nursery established</b>		<b>Jun-05</b>
Implement annual regeneration programs	Jun-05	Jul-09
♦ <b>First annual regeneration plan implemented</b>		<b>Jul-05</b>
Establish regeneration and plantation trial plots	Aug-05	Aug-08
♦ <b>First regeneration and plantation trial plots established</b>		<b>Sep-05</b>
Monitor evaluation trials	Oct-05	Oct-08
Draft/finalize annual plantation program	Dec-05	Oct-08
Implement annual plantation program	Jun-06	Jul-09
♦ <b>First annual plantation program implemented</b>		<b>Jul-06</b>

	<b>Start</b>	<b>Finish</b>
<b>Nakai Plateau Forestry Development Program</b>		
<b>Forest Fire Protection and Monitoring</b>	<b>Dec-04</b>	<b>May-10</b>
Establish and operate fire patrol teams/stations	Dec-04	May-10
♦ <b>First fire patrol teams and stations established</b>		<b>Apr-05</b>
<b>Component 3: Forestry Business</b>	<b>Jul-04</b>	<b>Dec-10</b>
<b>Capacity Development: Training NPVFA Units</b>	<b>Jan-05</b>	<b>Dec-08</b>
Training of salvage logging and transportation teams	Jan-05	Nov-06
♦ <b>Salvage logging and transportation teams trained 1</b>		<b>Feb-05</b>
Training of sustainable logging and transportation teams	Feb-08	Dec-08
♦ <b>Sustainable logging and transport teams trained 1</b>		<b>Mar-08</b>
Training of salvage wood processing staff 1	Sep-05	Mar-06
♦ <b>Salvage wood processing staff trained</b>		<b>Mar-06</b>
Training of salvage sawmilling staff	Sep-05	Jan-07
♦ <b>Salvage sawmilling staff trained 1</b>		<b>Apr-06</b>
Training of wood preservation staff	Oct-05	Dec-05
♦ <b>Wood preservation staff trained</b>		<b>Dec-05</b>
Training in Post Harvest Assessment	Mar-06	Apr-06
♦ <b>Post harvest assessment training delivered</b>		<b>Apr-06</b>
Training in stock inventory	Mar-05	Jul-07
♦ <b>First stock inventory and accounting training delivered</b>		<b>Mar-05</b>
<b>Business Licences</b>	<b>Jul-04</b>	<b>Feb-05</b>
Apply for wood processing business licence	Jul-04	Jul-04
♦ <b>Wood processing licence obtained</b>		<b>Jul-04</b>
Apply for logging and transportation licence	Jul-04	Aug-04
♦ <b>Logging and transportation licence obtained</b>		<b>Dec-04</b>
Apply for sawmilling licence	Jul-04	Aug-04
♦ <b>Sawmilling licence obtained</b>		<b>Dec-04</b>
Apply for wood treatment licence	Dec-04	Jan-05
♦ <b>Wood treatment licence obtained</b>		<b>Feb-05</b>
<b>Infrastructure and Equipment - Logging</b>	<b>May-05</b>	<b>Sep-09</b>
Purchase or hire chainsaws for PL salvage logging	May-05	Aug-05
Purchase or hire log extraction trucks	May-05	Aug-05
Hire bulldozer	May-05	Jun-05
Hire excavator	May-05	Aug-05
Purchase or hire loader	May-05	Jun-05
Purchase or hire hauling truck	May-05	Jun-05
Purchase or hire dump truck	May-05	May-05
Purchase or hire chainsaws for selective logging	Oct-07	Nov-08
Purchase or hire log extraction trucks, if required	Jun-09	Sep-09
Purchase or hire bulldozer, if required	Jun-09	Sep-09
Purchase or hire excavator, if required	Jun-09	Sep-09
Purchase or hire another loader, if required	Jun-09	Sep-09
Purchase or hire hauling trucks, if required	Jun-09	Sep-09
<b>Infrastructure and Equipment - Sawmilling</b>	<b>May-05</b>	<b>Nov-05</b>
Designs and tendering	May-05	Jul-05
♦ <b>Designs and tendering complete</b>		<b>Jul-05</b>
Site layout, foundation works, security fence	Jul-05	Oct-05
Construct sawmill	Aug-05	Nov-05
♦ <b>Sawmill established</b>		<b>Nov-05</b>
Purchase or hire sawmill equipment and planer/gauger	Aug-05	Oct-05
Purchase or hire treatment plant and purchase chemicals	Aug-05	Oct-05
Install equipment (including electrical works, transformers, lights)	Aug-05	Oct-05
Purchase or hire additional sawmill equipment, as required	Oct-05	Nov-05
Purchase or hire forklift	May-05	Oct-05

	<b>Start</b>	<b>Finish</b>
<b>Nakai Plateau Forestry Development Program</b>		
♦ <b>Equipment installed</b>		<b>Nov-05</b>
<b>Infrastructure and Equipment - Wood Processing</b>	<b>Jul-04</b>	<b>Oct-07</b>
Construct "transition" WP factory	Apr-05	Jul-05
♦ <b>Transition WP factory constructed</b>		<b>Jul-05</b>
Purchase or hire wood processing machinery (with JV)	May-05	May-06
Construct post transition - long term WP factories	Jul-04	Aug-04
♦ <b>Post transition-long term WP factories constructed</b>		<b>Aug-04</b>
Purchase or hire more wood processing machinery, as required	Sep-07	Oct-07
<b>Operations - Logging</b>	<b>May-05</b>	<b>Jun-10</b>
Conduct salvage logging in RA Project Lands	May-05	May-06
♦ Salvage logging in RA project lands conducted	May-06	May-06
Provide logs to sawmill	May-05	May-06
Conduct selective logging in RA	Nov-06	Jun-10
First selective logging in RA project lands conducted	Jun-07	Jun-07
Provide log to sawmill	Nov-06	Jun-10
Sale other logs, if appropriate	Nov-05	Jun-10
<b>Operations - Sawmilling</b>	<b>Jun-05</b>	<b>Dec-10</b>
Undertaking sawmilling of logs from PLs	Jun-05	Jun-06
♦ <b>Sawmilling of logs from PLs completed</b>		<b>Jun-06</b>
Provide sawn timber etc to wood processing plants	Nov-05	Jun-06
Sell sawn timber to house construction	Feb-06	May-07
Undertaking sawmilling of logs from selective harvest	Nov-06	May-09
♦ <b>First saw-milling of logs from selective harvest undertaken</b>		<b>Jun-07</b>
Provide sawn timber to processing factories	Nov-06	May-09
Market the remaining timber	Nov-05	Dec-10
<b>Operations - Wood Processing (optional)</b>	<b>Aug-05</b>	<b>Aug-10</b>









### 3.4.5 Arrangements for Procurement and Implementation

<i>Description</i>	<i>Activity</i>	<i>Implementers</i>	<i>Village Consultation/ Participation</i>
Prepare Legal Foundation	Enact legislations to enable the re-settlers manage the resettlement area forest. The legislations are Decree No 193/PM, Decree No 37.PM, Authorization No 0063/MAF and Regulation No 484.KM.GOV	GOL	None
	Draft and Approve NPVFA Articles of Association	NPVFA	Yes
	Sign 70-year Forest Management Contract between NPFVFA and GOL	NPVFA, DAFO, PAFO, NTPC TA, Khammouane Provincial Administration	Yes
Planning	Develop Forest Management Plan and update it very five years	NPVFA, DAFO, PAFO, NTPC TA	Yes
	Provide technical assistance to NPVFA in all phases of forestry development: organize the NNVFA, formulate forest management plan, train villagers and oversee village forestry work	DAFO aided by NTPC TA	Yes
Supervision	Prepare and issue resettlement regulations and internal rules	RC	No
	Allocate roles and responsibilities for relevant agencies involved in resettlement including the RMU, DRWG, VRC and RO	RC	No
	Provide technical supervision of field level activities implemented by Extension Workers and Village Forestry Agents	RMU Livelihood Development and Training Unit	Yes
Implementation	Administer NPVFA and its forest management, utilization and marketing operation	VFC / NPVFA Board of Management	Yes
	Hire a professional manager to plan and run the regular business of NPVFA, provide management assistance to VFC, supervise village foresters and look after the business enterprise of NPVFA. He will organize a management staff	Board of Management under Assembly of Village Representatives	Yes
	Implement different forest management and utilization activities assigned by NPVFA	Forestry Work Teams	Yes
	Annually assess the operation and audit the accounts of VFC which in turn be subject to similar review by Board of Inspection.	NPVFA	Yes
	Provide assistance in forest surveys, logging, processing etc	RO	
	Conduct resource surveys and establish and strengthen VFA through training and TA support	RO	
Training	Build the capacity of the NPVFA into a competent business organization through training and immediate application of knowledge and skills	NTPC, PMU, DAFO and PAFO	Yes
	Develop systems and procedures and prepare training activities	Experts, NTPC and DAFO	
	Train district staff on their activities and systems and procedures	Experts, NTPC and PAFO	
	Train Village Work Teams on systems and	DAFO under the	

<i>Description</i>	<i>Activity</i>	<i>Implementers</i>	<i>Village Consultation/ Participation</i>
	procedures but simplified	supervision of NTPC/PFO	
	Apply knowledge and skills to conduct given activities under the supervision of the DAFO	Village Work Teams	
	Organize new skills training for affected individuals and villages	RMU and DRWG	Yes
	Implement livelihood program and assist in related training activities	DRWG and DCWG	Yes
Scheduling	Maintain and update the social and resettlement program schedule	NTPC RO	No
Procurement	Engage assistance of international experts	NTPC	No
Financing	Provide start-up funds and TA during the first 3 to 4 years operation of the NPVA which is also the NT2 construction period and the Project lands salvage logging period	NTPC	NO
	Reinvest some profits from NPVFA forestry business in capital and operating cost	NPVFA	Yes
	Provide any cost associated with the mitigating the social effects of the project on any PAP in accordance to CA	NTPC	No

### 3.4.6 Monitoring

Refer also to Section 1.9 above – the following table shows specific parameters relevant to this Component:

Parameters:	Monitored by:	Comments;
Progress in livelihood and community development	RMU	Monthly resettlement progress report for each village will be prepared and aggregated by the RMU (SDP 17.1)
Progress of all activities	DRWG and DCWG	Report to the RMU and District Government (SDP 6.4)
Socio-economic status and development in the plateau PAP	NTPC RO	Develop and maintain essential databases (SDP 6.5.3)
Socio-economic data and completed resettlement delivery	RMU Compensation, Monitoring and Evaluation Unit <sup>16</sup>	Maintain GOL database in coordination with NTPC; provide information to internal and external monitoring organization (SDP 6.3.2)
Annual pre-harvest inventories		10% sampling intensity with 100% enumeration and mapping of large trees (>40 cm DBH) to provide accurate assessment of timber resources (SDP 23.13)
Logging and accessibility assessment of the northernmost part of the RA is planned in the dry season of 2007.		The assessment will include the location of a preliminary line for forest roads and 3% inventory of the forest in accessible areas (SDP 23.13).

The RC will appoint independent monitoring agency (SDP 6.2.1)

Household Livelihood Monitoring books record information on a regular basis with monthly summaries and annual analysis of the outcomes. The program will be implemented by external monitors with assistance from RMU. Information relevant to forestry collected through Socioeconomic Monitoring Family Book is as follows:

<i>Record</i>	<i>Type of Information</i>	<i>Time</i>
Demographic	Occupation and labour status	Annual
Asset Inventory	House type and condition,	Annual
Land use	Land parcel, land area, land type and tenure status and cropping pattern	Annual
Labour use	Labour allocation among livelihood options included to analyze returns from different enterprises	
Income	Source and amount of all household income including NTFP	Monthly
Expenditure	Expenditure on all household needs including agriculture	Monthly
Others	Any other information the households wishes or is asked to record N.V. for potentially vulnerable households	

Source: SDP Table 8-7

<sup>16</sup> Social and Cultural Development and the Compensation, Monitoring and Evaluation Units will have branches in each District, with RMU and NTPC will maintain control over finances and databases.

### 3.4.7 Milestones

#### **Component 1: Institutional Development**

##### **NPVFA Establishment:**

- AoA approved and NPVFA formally recognised
- NPVFA Log-frame Business Plan prepared

##### **Organization of NPVA Units:**

- Village forestry work teams established
- Logging staff established
- Sawmill staff established
- Wood processing JV established

##### **Capacity Development: Infrastructure and Equipment:**

- Offices constructed / refurbished
- Accommodation and work facilities constructed
- Logistics and field equipment purchased (Phase 1)
- Logistics and field equipment purchased (Phase 2).
- Office equipment purchased

##### **Capacity development: Training NPVFA Units**

- Village Forest Committees training complete
- NPVFA training complete

#### **Component 2: Forest Management**

##### **Resource Assessment and Management Planning**

- 100% of resettlement sites (agricultural and housing land) surveyed
- 100% of Project Lands in RA surveyed.
- Improved management zonation investigations completed
- Production forest surveyed
- Forest Management Agreement finalised
- Forest Management Plans finalised

##### **Logging Planning: Project (Construction) Lands:**

- Pre-harvest inventory and tree marking complete
- Logging plan complete
- Salvage harvesting quota secured

##### **Harvest/Sustainable Logging Planning**

- Pre-harvest (100%) inventory tree marking complete
- Sustainable logging quota secured

##### **Regeneration and Plantations**

- Annual regeneration program finalised
- Nursery established
- Annual regeneration program implemented

- Regeneration and plantation trial plots established
- Annual plantation program finalised

**Forest Fire Protection and Monitoring:**

- Fire patrol teams and stations established

**Component 3: Forest Business**

**Capacity Development: Training NPVFA Units:**

- Salvage logging and transportation teams trained
- Sustainable logging and transport teams trained
- Salvage wood processing staff trained
- Salvage sawmilling staff trained
- Wood preservation staff trained
- Post harvest assessment training delivered
- Stock inventory and accounting training delivered

**Business Licenses**

- Logging and transportation license obtained
- Saw-milling license obtained
- Wood treatment license obtained

**Infrastructure and equipment: Sawmilling**

- Design and tendering complete
- Sawmill established
- Equipment installed

**Infrastructure and equipment: Wood Processing**

- Transition WP factory constructed
- Post transition-long term WP factories constructed

**Operations: Logging**

- Salvage logging in RA project lands conducted
- Selective logging in RA conducted

**Operations: Saw-milling**

- Sawmilling of logs from PLs completed
- Saw-milling of logs from selective harvest undertaken

### 3.5 Nakai Plateau Livestock Development Program

#### 3.5.1 Issues

Loss of 45,000 ha of grazing area with a sustainable stocking rate of 14.2 ha per animal;

Concentration of existing animal population to remaining area increasing gross stocking rate to 1 animal per 5.4 ha;

Need for forage development activities as fundamental part of resettlement;

Shift in the style of management for its resettled households, involving shift from relatively extensive to intensive production systems with considerable labour demand.

The entitlement of each resettled household will include the following:

- Access to identified reservoir drawdown area for grazing of existing animals;
- Flexibility to maintain current livestock numbers;
- Households with no large livestock (about 60%) will be eligible for up to two large animals to supplement their livelihood.

All the affected households own some form of livestock but distribution is very skewed. The average number of buffaloes is over four per household; however, 59 % of households have no buffalo at all.. Cattle are less common. All households have at least one pig and some poultry. These are all raised with very few, if any, external inputs.

#### 3.5.2 Objectives / Measures

Improve the quality of animal feed through the intensive production of fodder and legume crops on home gardens;

Manage buffalo and cattle in the RA through the development of forage production activities and water source and the provision of fencing and mineral licks;

Improve animal health and nutrition through enhanced veterinary staff capacity and the training of farmers on animal management, disease diagnosis and treatment;

Introduce improved pasture species into appropriate forest area to improve dry matter yields and stocking rate;

Improve extension services to train farmers;

Upgrade breeding stock through animal feeding program and the establishment and equipping of animal breeding centres;

Provide institutional support through strengthening government organization and provision of technical assistance;

Utilize drawdown areas as appropriate;

Implement other measures as appropriate to adhere to objectives referred to above.

### 3.5.3 Obligations per CA

#### NTPC Obligations

<b>Reference:</b>	<b>Description:</b>
Schedule 4, Part 1 Section	
7.3.2	Assist RMU in consulting Resettlers on development of Village Development Plans
7.5.2	Participatory resource management planning to accommodate the initiation and development of the livelihood options for families and villages.
7.6.1	Prepare detailed site plans and plot plans
8.5.19	Community buildings – cattle yard and crush
9.1.3	Assist RMU to consult with villagers on livelihood issues
9.1.4	Steps to mitigate additional risks to ethnic minority groups, including additional training and options for livelihood development
9.2	Demonstration Farm
9.3	Establish three pilot farms and house plots and relocate three households
9.4	Evaluation of three pilot farms
9.7.1	Develop and implement a livestock development program
9.9.1	Assist RMU to consult with Villagers on livelihood packages
10.2.1	Assist RMU in training for Resettlers in livestock management
10.3	Assist RMU in provision of farm equipment
10.4.1	Assist RMU in training on Other Income Generating Activities and Technical Support
10.5.1	Assist RMU to Provide Other Livelihood Equipment
11.3.1	Assist RMU with pre-relocation activities plan – relocation of livestock
11.4.1	Assist RMU develop a community development plan
15.1(a)4.1	Compensation and rehabilitation measures for Resettlers – agricultural livelihoods
15.1(a)6.2	Compensation and rehabilitation measures for Resettlers - grazing land
15.1(c)	Livelihood Operational Support for Resettlers – veterinary medicines

#### GoL Obligations (for reference)

<b>Reference:</b>	<b>Description:</b>
Schedule 4, Part 1 Section	
11.5.1	RMU to consult with villages on community development plan.

### 3.5.4 Scope of Work and Key Dates

◆ denotes milestone(s)

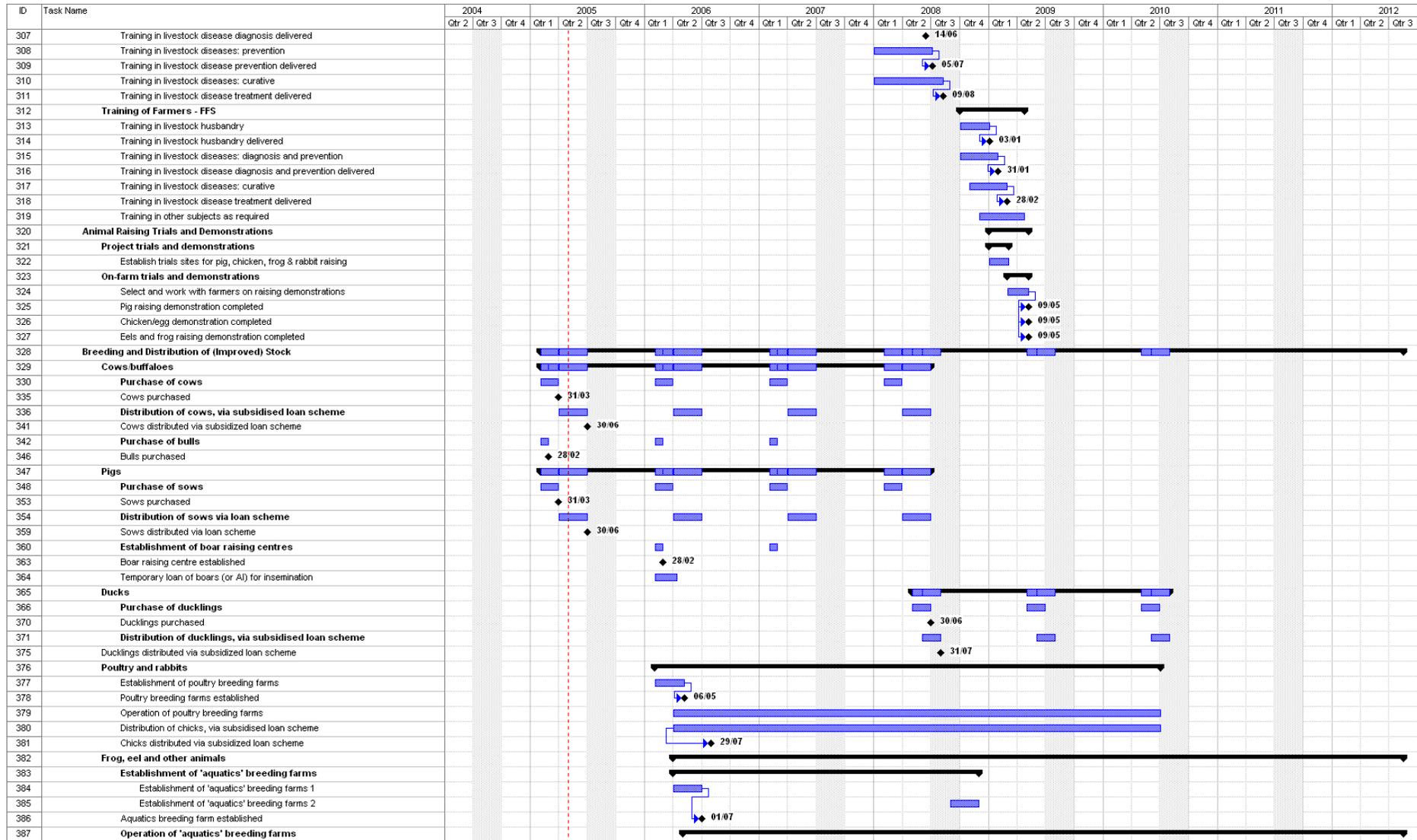
	<b>Start</b>	<b>Finish</b>
<b>Agriculture and Livestock Development Program</b>		
Community Consultation and Review	Jun-05	Jun-10
Village FLUPAM Steps	Jun-05	Nov-08
Stage 1 Site Selection	Jun-05	Feb-06
Stage 2 Boundary Negotiations	Sep-05	Jan-07
Stage 3 Testing of Livelihoods	May-06	Mar-08
Stage 4 Review of Livelihood Options and Land Use Planning	Jun-06	Mar-08
Stage 5 Zonation	Nov-06	Nov-08
On going consultations	Nov-08	Jun-10
<b>LIVESTOCK RAISING</b>	<b>Apr-04</b>	<b>Aug-12</b>
<b>Forage</b>	<b>Apr-04</b>	<b>Jul-10</b>
Establishment of Forage Nurseries	Apr-04	Jun-08
Procurement of seed, planting material	Apr-04	Apr-08
◆ <b>Seeds and planting materials procured 2</b>		<b>Apr-06</b>
◆ <b>Seeds and planting materials procured 3</b>		<b>Apr-08</b>
Establish and maintain nurseries (fencing of nurseries)	Apr-04	Jun-08
◆ <b>Nurseries established</b>		<b>Jun-06</b>
Ensure distribution of planting materials to farmers	Apr-04	Jun-08
◆ <b>Planting materials distributed to farmers</b>		<b>Jun-06</b>
Establishment of Forage - Irrigated Depots	May-04	Jul-10
Establish grasses on contour bund - selected farmers	May-04	Jul-10
◆ <b>Grasses on contour bund- established for selected farmers</b>		<b>Jul-05</b>
Establish pastures - selected farmers	May-04	Jul-08
◆ <b>Pastures established for selected farmers</b>		<b>Jul-05</b>
Use plots as FFS and field day sites	Jul-04	Dec-05
Support the expansion of areas, as required	May-07	Jul-10
Establishment of Forage - Upland Rainfed Areas	Jan-05	Aug-08
Survey of potential grazing areas	Jan-05	Feb-06
◆ <b>Potential grazing areas surveyed</b>		<b>Feb-06</b>
Establish trials and demonstration plots	May-06	Jun-07
◆ <b>Trials and demonstration plots established</b>		<b>Jun-06</b>
Use plots as FFS and field day sites	Mar-06	Aug-08
Develop methods for sward establishment	May-06	Jul-07
◆ <b>Methods for sward establishment developed</b>		<b>Jul-06</b>
Establishment of Forage - Drawdown Zones	Mar-09	Jun-10
Survey of potential forage areas	Mar-09	Apr-10
◆ <b>Potential forage areas surveyed</b>		<b>Apr-09</b>
Establish trials and demonstration plots	Mar-10	Jun-10
◆ <b>Trials and demonstration plots established</b>		<b>Jun-10</b>
<b>Training in Livestock Management &amp; Disease Control</b>	<b>Jan-08</b>	<b>Apr-09</b>
Training of Village Livestock Agents	Jan-08	Aug-08
Training in livestock husbandry: breeding and housing	Jan-08	Jun-08
◆ <b>Training in livestock husbandry, breeding and housing delivered</b>		<b>Jun-08</b>
Training in livestock husbandry: forage and feeding	Jan-08	Jun-08
◆ <b>Training in livestock husbandry, forage and feeding delivered</b>		<b>Jun-08</b>
Training in livestock diseases: diagnosis	Jan-08	Jun-08
◆ <b>Training in livestock disease diagnosis delivered</b>		<b>Jun-08</b>
Training in livestock diseases: prevention	Jan-08	Jul-08
◆ <b>Training in livestock disease prevention delivered</b>		<b>Jul-08</b>

	<b>Start</b>	<b>Finish</b>
<b>Agriculture and Livestock Development Program</b>		
Training in livestock diseases: curative	Jan-08	Aug-08
<b>♦ Training in livestock disease treatment delivered</b>		<b>Aug-08</b>
Training of Farmers - FFS	Oct-08	Apr-09
Training in livestock husbandry	Oct-08	Jan-09
<b>♦ Training in livestock husbandry delivered</b>		<b>Jan-09</b>
Training in livestock diseases: diagnosis and prevention	Oct-08	Jan-09
<b>♦ Training in livestock disease diagnosis and prevention delivered</b>		<b>Jan-09</b>
Training in livestock diseases: curative	Nov-08	Feb-09
<b>♦ Training in livestock disease treatment delivered</b>		<b>Feb-09</b>
Training in other subjects as required	Dec-08	Apr-09
<b>Animal Raising Trials and Demonstrations</b>	<b>Jan-09</b>	<b>May-09</b>
Project trials and demonstrations	Jan-09	Mar-09
Establish trials sites for pig, chicken, frog & rabbit raising	Jan-09	Mar-09
On-farm trials and demonstrations	Mar-09	May-09
Select and work with farmers on raising demonstrations	Mar-09	May-09
<b>♦ Pig raising demonstration completed</b>		<b>May-09</b>
<b>♦ Chicken/egg demonstration completed</b>		<b>May-09</b>
<b>♦ Eels and frog raising demonstration completed</b>		<b>May-09</b>
<b>Breeding and Distribution of (Improved) Stock</b>	<b>Feb-05</b>	<b>Aug-12</b>
Cows/buffaloes	Feb-05	Jun-08
Purchase of cows	Feb-05	Mar-08
<b>♦ Cows purchased</b>		<b>Mar-05</b>
Distribution of cows, via subsidised loan scheme	Apr-05	Jun-08
<b>♦ Cows distributed via subsidized loan scheme</b>		<b>Jun-05</b>
Purchase of bulls	Feb-05	Feb-07
<b>♦ Bulls purchased</b>		<b>Feb-05</b>
Pigs	Feb-05	Jun-08
Purchase of sows	Feb-05	Mar-08
<b>♦ Sows purchased</b>		<b>Mar-05</b>
Distribution of sows via loan scheme	Apr-05	Jun-08
<b>♦ Sows distributed via loan scheme</b>		<b>Jun-05</b>
Establishment of boar raising centres	Feb-06	Feb-07
<b>♦ Boar raising centre established</b>		<b>Feb-06</b>
Temporary loan of boars (or AI) for insemination	Feb-06	Apr-06
Ducks	May-08	Jul-10
Purchase of ducklings	May-08	Jun-10
<b>♦ Ducklings purchased</b>		<b>Jun-08</b>
Distribution of ducklings, via subsidised loan scheme	Jun-08	Jul-10
<b>♦ Ducklings distributed via subsidized loan scheme</b>		<b>Jul-08</b>
Poultry and rabbits	Feb-06	Jul-10
Establishment of poultry breeding farms	Feb-06	May-06
<b>♦ Poultry breeding farms established</b>		<b>May-06</b>
Operation of poultry breeding farms	Apr-06	Jul-10
Distribution of chicks, via subsidised loan scheme	Apr-06	Jul-10
<b>♦ Chicks distributed via subsidized loan scheme</b>		<b>Jul-06</b>
Frog, eel and other animals	Apr-06	Aug-12
Establishment of 'aquatics' breeding farms	Apr-06	Nov-08
Establishment of 'aquatics' breeding farms 1	Apr-06	Jul-06
Establishment of 'aquatics' breeding farms 2	Sep-08	Nov-08
<b>♦ Aquatics breeding farm established</b>		<b>Jul-06</b>
Operation of 'aquatics' breeding farms	May-06	Aug-12
Operation of 'aquatics' breeding farms	May-06	Aug-12
<b>Procurement of Veterinary Supplies, Livestock Equipment</b>	<b>Jan-08</b>	<b>Jun-08</b>

	<b>Start</b>	<b>Finish</b>
<b>Agriculture and Livestock Development Program</b>		
Procurement of veterinary tool kits	Jan-08	Mar-08
<b>◆ Veterinary tool kits procured</b>		<b>Mar-08</b>
Establish procedures for distribution and use	Feb-08	Mar-08
Manage the distribution and use of kits	Apr-08	Jun-08
Procurement of medicine (transfer to private)	Jan-08	Mar-08
<b>◆ Medicine procured</b>		<b>Mar-08</b>
Establish procedures for distribution and uses	Feb-08	Mar-08
Monitor the distribution and use of kits	Apr-08	Jun-08
Procurement of animal feed supplements	Jan-08	Mar-08
<b>◆ Animal feeds supplements procured</b>		<b>Mar-08</b>
Manage the distribution and use of supplements	Apr-08	Jun-08
<b>Facilities of Range Grazing</b>	<b>Oct-07</b>	<b>May-09</b>
Gully stops	Oct-07	Jun-08
Survey areas and sites for gully stop/dam construction	Oct-07	Dec-07
<b>◆ Areas for gully stop/ dam construction surveyed</b>		<b>Dec-07</b>
Construction of gully stops	Jan-08	May-08
<b>◆ Construction of gully stops complete</b>		<b>May-08</b>
Develop tenure and maintenance procedures	Mar-08	Jun-08
<b>◆ Tenure and maintenance procedures developed</b>		<b>Jun-08</b>
Fencing	Oct-07	May-09
Survey grazing area etc, and plan for fencing	Oct-07	Jan-08
<b>◆ Grazing area surveyed and plan for fencing complete</b>		<b>Jan-08</b>
Coordinate with village forest and land use committees	Oct-07	Feb-08
Progressively develop fencing - temporary and permanent	Jan-08	May-09
<b>◆ Temporary and permanent fencing developed</b>		<b>May-09</b>
Mineral licks	Jan-09	May-09



PIP Part B : Social Activities - Chapter 3: Nakai Plateau Resettlement





### 3.5.5 Arrangements for procurement and Implementation

<i>Description</i>	<i>Activity</i>	<i>Implementer</i>	<i>Village Consultation/ Participation</i>
Planning	Prepare plans and policies relating to resettlement (SDP 6.2.1)	RC	Yes
	Investigate the potential resources and developing livelihood scenarios in participation with relevant government agencies and district government (SDP 6.3.1)	RMU	Yes
	Develop Village Development Plan (SDP 6.7.10)	VRC	Yes
Supervision	Prepare and issue resettlement regulations and internal rules (SDP 6.2.1)	RC	Yes
	Allocate roles and responsibilities for relevant agencies involved in resettlement including the RMU, DRWG, VRC and RO (SDP 6.2.1)	RC	No
	Provide technical supervision of field level activities implemented by Livestock Extension Workers and other extension workers (SDP 6.3.2),	RMU Livelihood Development and Training Unit	Yes
Implementation	Provide technical assistance to RMU Livelihood Development and Training Unit (SDP 6.3.2)	RO experts and advisers	No
	Coordinate the provision of technical advice to District staff on agriculture, forestry and fisheries (SDP 6.3.2)	RMU Livelihood Development and Training Unit	No
	Take technical direction from RMU and RO in implementing development activities specific to their Districts in cooperation with villagers (SDP 6.4)	DRWG/DCWG	Yes
	Implement the livelihood program for villages and coordinate related training activities (SDP 6.4)	DRWG/DCWG	Yes
Training	Organize new skills training for affected individuals and villages (SDP 6.3.1)	RMU in collaboration with DRWG	Yes
	Train trainers for FFS for livestock disease diagnosis (SDP Table 21-19, SPD 21.10.3)	DAFO	Yes
	Implement livelihood program and assist in related training activities (SDP 6.4)	DRWG and DCWG	Yes
	Act as resource persons in Farmer Field Schools organized Agricultural Extension Workers and Livelihood Extension Workers (SDP 6.3.2)	RMU Livelihood Development and Training Unit	No
Scheduling	Maintain and update social and resettlement program schedule (SDP 6.5.3)	NTPC RO	No
Procurement	Engage assistance of international experts (SDP 6.5)	NTPC	No
	Assist in the procurement of inputs for Agricultural and Livestock Program (SDP 6.3.2)	RMU Livelihood Development and Training Unit	Yes
Financing	Provide any cost associated with the mitigating the social effects of the project on any PAP in accordance to CA (SDP 6.5)	NTPC	No

### 3.5.6 Monitoring

Refer also to Section 1.9 above – the following table shows specific parameters relevant to this Component:

Parameters:	Monitored by:	Comments:
Progress in livelihood and community development	RMU	Monthly resettlement progress report for each village will be prepared and aggregated by the RMU (SDP 17.1)
Progress of all activities	DRWG and DCWG	Report to the RMU and District Government (SDP 6.4)
Socio-economic status and development in the plateau PAP	NTPC RO	Develop and maintain essential databases (SDP 6.5.3)
Socio-economic data and completed resettlement delivery	RMU Compensation, Monitoring and Evaluation Unit <sup>17</sup>	Maintain GOL database in coordination with NTPC; provide information to internal and external monitoring organization (SDP 6.3.2)

The RC will appoint independent monitoring agency (SDP 6.2.1)

Household Livelihood Monitoring books record information on a regular basis with monthly summaries and annual analysis of the outcomes. Information relevant to livestock collected through Socioeconomic Monitoring Family Book is:

<i>Record</i>	<i>Type of Information</i>	<i>Time</i>
Demographic	Occupation and labour status	Annual
Asset Inventory	Number of buffalos owned and borrowed, Number of Buffalo for ploughing, Number of cows	Annual
Livestock	Numbers, death, births, disposal and purchased of cattle, pigs, poultry and goats	Monthly
Production	Produce amount, price (received or imputed) and returns from each livelihood component and how the produce is used	Weekly
Income	Source and amount of all household income	Monthly
Expenditure	Expenditure on all household needs including agriculture	Monthly
Others	Any other information the households wishes or is asked to record N.V. for potentially vulnerable households	

Source: SDP Table 8-5 and Annex 8-1

### 3.5.7 Milestones

#### **Forage:**

##### **Establishment of forage nurseries:**

- Seeds and planting materials procured
- Nurseries established
- Planting materials distributed to farmers

##### **Establishment of forage: irrigated depots:**

<sup>17</sup> Social and Cultural Development and the Compensation, Monitoring and Evaluation Units will have branches in each District, with RMU and NTPC will maintain control over finances and databases.

- Grasses on contour bund- established for selected farmers
- Pastures established for selected farmers

**Establishment of forage: upland rain-fed areas:**

- Potential grazing areas surveyed
- Trials and demonstration plots established
- Methods for sward establishment developed

**Establishment of forage: Draw-down zones**

- Potential forage areas surveyed
- Trials and demonstration plots established

**Training in Livestock Management and Disease Control**

**Training VLA:**

- Training in livestock husbandry, breeding and housing delivered
- Training in livestock husbandry, forage and feeding delivered
- Training in livestock disease diagnosis delivered
- Training in livestock disease prevention delivered
- Training in livestock disease treatment delivered

**Training of Farmers- FFS:**

- Training in livestock husbandry delivered
- Training in livestock disease diagnosis and prevention delivered
- Training in livestock disease treatment delivered

**Animal Raising Trials and Demonstrations**

**On-farm trials and demonstrations:**

- Pig raising demonstration completed
- Chicken/egg demonstration completed
- Eels and frog raising demonstration completed

**Breeding and Distribution of Improved Stock**

**Cows and Buffaloes:**

- Cows purchased
- Cows distributed via subsidized loan scheme
- Bulls purchased

**Pigs:**

- Sows purchased
- Sows distributed via loan scheme
- Boar raising centre established

**Ducks:**

- Ducklings purchased
- Ducklings distributed via subsidized loan scheme

**Poultry and rabbits:**

- Poultry breeding farms established

- chicks distributed via subsidized loan scheme

**Frog, eels and other animals:**

- Aquatics breeding farms established

**Procurement of Veterinary Supplies, Livestock Equipment**

- Veterinary tool kits procured
- Medicine procured
- Animal feeds supplements procured

**Facilities of Range Grazing**

**Gully stops**

- Areas for gully stop/ dam construction surveyed
- Construction of gully stops complete
- Tenure and maintenance procedures developed

**Fencing,**

- Grazing area surveyed and plan for fencing complete
- Temporary and permanent fencing developed

### 3.6 Nakai Plateau Agricultural Development Program

#### 3.6.1 Issues

Loss of agricultural land including 91 ha of rain-fed rice land, 35 ha of dry season irrigated paddy field, 434 ha of upland rice land and areas planted to maize, cassava and vegetables of 86, 49 and 4 ha respectively.

Yields are usually very poor due to flood, drought and elephant damage with a 1996 survey showing only 17% of households producing enough rice for year round consumption.

The RA is on generally poor soil and thus specific cultural practices need to be developed to ensure sustainable and economically feasible agriculture.

The need to adopt new forms of sedentary agriculture from traditional rain-fed and upland shifting agriculture-based systems.

The new agricultural systems require the introduction of new crops, improved land, soil and mulch, increased use of agricultural inputs and the marketing of surplus produce.

Among the new practices will be the use of irrigation for paddy production and production of field and vegetable crops. Organic and chemical fertilizer, selected herbicides and improved crop varieties will be used.

The entitlement of the each resettled household as per the CA includes the following:

- A 0.5 ha of irrigated land and up to 0.16 ha<sup>18</sup> of rice land or a total of 0.66 ha of irrigated land for development and improvement;
- The land will be provided with a survey and joint title to husband and wife;
- The land will be cleared and prepared for cultivation by the owner with their labour paid;
- The land will be provided with year round irrigation;
- Tools will be provided to work on the farmland and forest land;
- Planting materials for the first 3 years after the preparation of farm lot including fruit sapling will be provided as well as fertilizers, and other agrochemical;
- Training and agricultural advice in farming will be provided.

Identified reservoir drawdown areas as well as upland areas currently under degraded forest have also been allocated for developing and sustaining agricultural production

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<sup>18</sup> The CA specifies 0.15 ha but in the SDP has specified 0.16 ha as this is the traditional measure of land used (= 1 “rai”).

### 3.6.2 Objectives / Measures

The goal of the program is to enable resettled households develop productive and sustainable agriculture production as part of their livelihood system.

The strategies to be adopted as part of the program include:

- Soil fertility improvement through increased application of organic matter and fertilizers and the introduction of leguminous crops into the rotation;
- Cultivation of cash crops such as vegetables and fruits depending on market demand;
- Improving access to credit through existing institutions;
- Participatory research and extension
- Institutional support through strengthening government organizations and provision of technical assistance;

Resettlers will be encouraged to adopt Whole Farm Scenario Models, some examples of which are:

<i>Model</i>	<i>System</i>	<i>Wet season crops</i>	<i>Dry Season Crops</i>
1.1	Intensive wet season cereal/legumes with vegetable dry season production	Irrigated paddy, maize & upland rice, legumes, fruit trees	Irrigated paddy, maize. Legumes, vegetables, fruit trees
2.1	Fruit production with wet season cereal/legumes and dry season vegetable production	Irrigated paddy, fruit trees, maize, upland rice, legumes	Irrigated paddy, fruit trees, legumes, maize & vegetables
3.1	Industrial crops with cereal/legume production	Irrigated paddy, coffee, legumes	Irrigated paddy, coffee, legumes
4.1	Irrigated paddy with legumes/vegetables	Irrigated paddy, legumes, fruit trees	Watermelon, vegetables, fruit trees

Source: (SDP Table 25-3)

### 3.6.3 Obligations per CA

#### NTPC Obligations

<i>Reference:</i>	<i>Description:</i>
Schedule 4, Part 1 Section	
7.3.2	Assist RMU in consulting Resettlers on development of Village Development Plans
7.4.1	Prepare and move pilot village <sup>19</sup>
7.5.2	Participatory resource management planning to accommodate the initiation and development of the livelihood options for families and villages.
7.6.1	Prepare Detailed site Plans and Plot Plans
7.7.2	RO to revise Detailed Village Plans according to consultations with Resettlers
8.2.1	Assist RMU to clear and fence land to be used for agricultural purposes.
8.3.1	Assist RMU to develop mechanism to distribute farm and house plots among households
8.5.16	Design and construct rice mills and workshops
8.5.17	Design and construct seed processing and storage facilities
8.5.18	Design and construct organic fertiliser factories
8.5.20	Design and construct tree nurseries
8.5.22	Move items of cultural heritage

<sup>19</sup> This was done in 2002-03

<b>Reference:</b>	<b>Description:</b>
8.6.4	Construct granary
8.6.5	Construct roofed compost bin
9.1.3	Assist RMU to consult with resettlers on livelihood issues and provide training and extension support to PAPs
9.1.4	Steps to mitigate additional risks to ethnic minority groups, including additional training and options for livelihood development
9.2	Demonstration Farms
9.3	Establish three pilot farms and house plots and relocate three households
9.4	Evaluation of three pilot farms
9.8.1	Develop and implement an agriculture development program
9.9.1	Assist RMU to consult with Villagers on livelihood packages
10.1.1	Identify, clear and prepare rice areas
10.2.1	Assist RMU in training for Re-settlers on new farming techniques
10.3	Assist RMU in provision of farm equipment
10.4.1	Assist RMU in training on Other Income Generating Activities and Technical Support
10.5.1	Assist RMU to Provide Other Livelihood Equipment
11.2	Training needs assessment with technical assistance for RMU, DRWGs and VRCs
11.3.1	Assist RMU with pre-relocation activities plan – early training for new livelihood activities
11.4.1	Assist RMU develop a community development plan
12.3.1	Provide rice and protein supplements to RMU for distribution to vulnerable households during Resettlement Implementation Period
15.1(a) 1.1	Compensation and rehabilitation measures for Resettlers – permanent loss of agricultural land
15.1(a) 3	Compensation and rehabilitation measures for Resettlers –loss of standing crops or trees, other productive assets
15.1(a)4.1	Compensation and rehabilitation measures for Resettlers – agricultural livelihoods
15.1(c)	Livelihood Operational Support for Resettlers – agricultural supplies and maintenance

**GoL Obligations (for reference)**

<b>Reference:</b>	<b>Description:</b>
Schedule 4, Part 1 Section	
7.5.1	Nam Theun 2 Land Decree
7.7.1	RMU to consult with Resettlers on Detailed Village Plans
8.1.3	Land allocation and titles
8.5.21	GOL to provide detailed plans to RO regarding the relocation of items of cultural heritage
11.5.1	RMU to consult with villages on community development plan.
12.3.2	RMU to arrange for provision and distribution of transitional income support

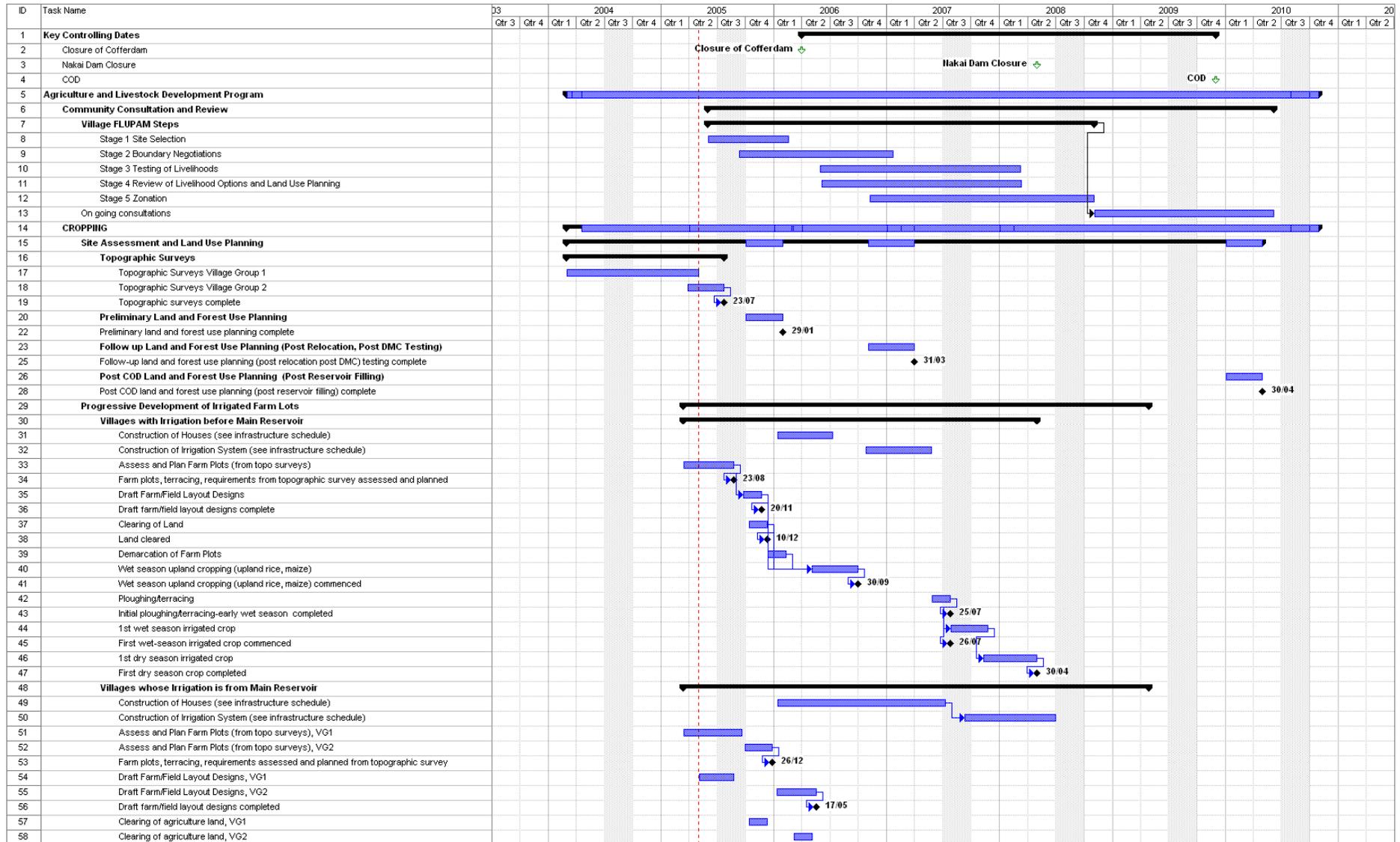
### 3.6.4 Scope of Work and Key Dates

◆ denotes milestone(s)

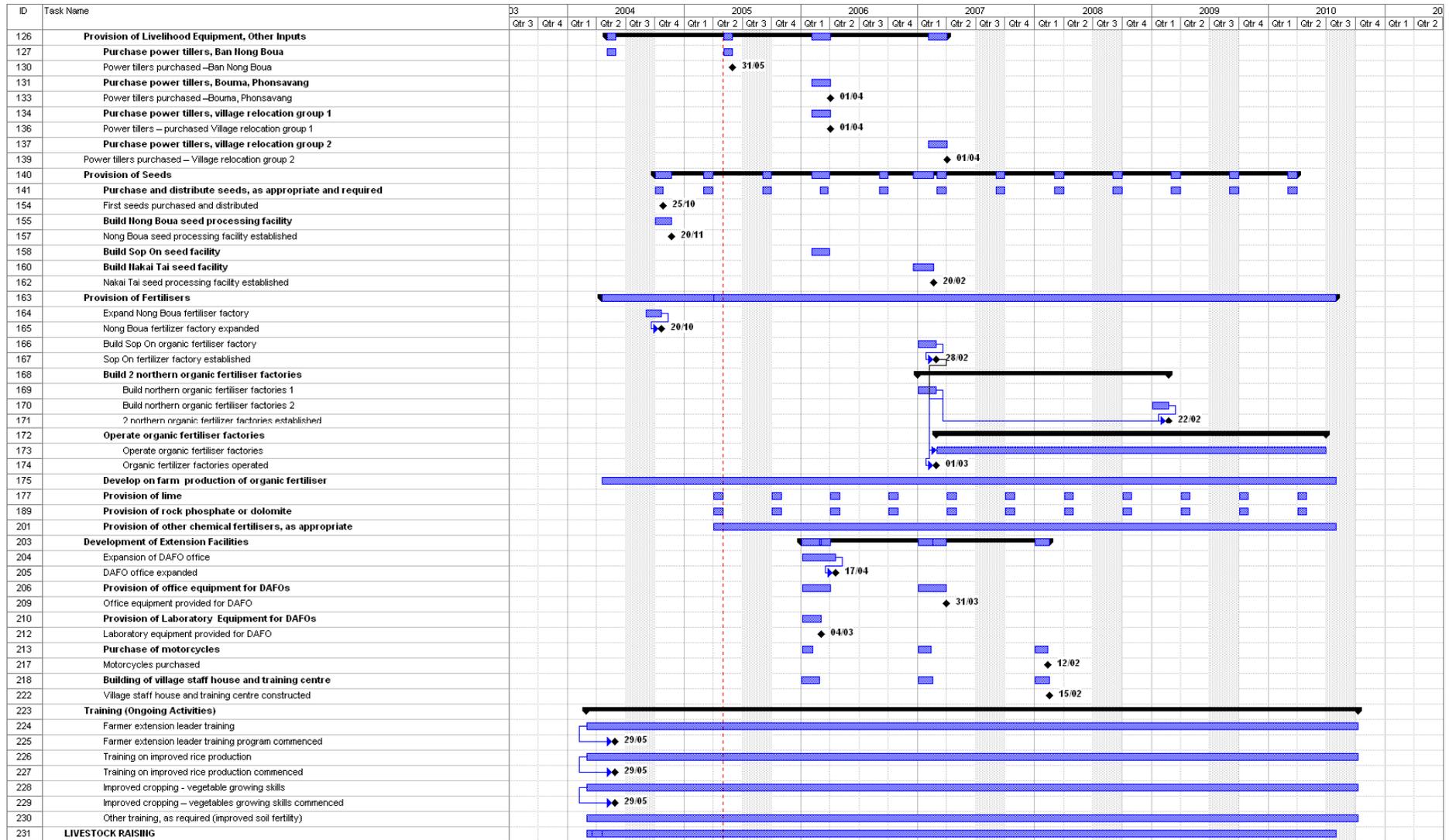
	Start	Finish
<b>Agriculture and Livestock Development Program</b>		
<b>Community Consultation and Review</b>	<b>Jun-05</b>	<b>Jun-10</b>
Village FLUPAM Steps	Jun-05	Nov-08
Stage 1 Site Selection	Jun-05	Feb-06
Stage 2 Boundary Negotiations	Sep-05	Jan-07
Stage 3 Testing of Livelihoods	May-06	Mar-08
Stage 4 Review of Livelihood Options and Land Use Planning	Jun-06	Mar-08
Stage 5 Zonation	Nov-06	Nov-08
On going consultations	Nov-08	Jun-10
<b>CROPPING</b>	<b>Mar-04</b>	<b>Oct-10</b>
<b>Site Assessment and Land Use Planning</b>	<b>Mar-04</b>	<b>Apr-10</b>
Topographic Surveys	Mar-04	Jul-05
Topographic Surveys Village Group 1	Mar-04	May-05
Topographic Surveys Village Group 2	Mar-05	Jul-05
◆ <b>Topographic surveys complete</b>		<b>Jul-05</b>
Preliminary Land and Forest Use Planning	Oct-05	Jan-06
◆ <b>Preliminary land and forest use planning complete</b>		<b>Jan-06</b>
Follow up Land and Forest Use Planning (Post Relocation, Post DMC Testing)	Nov-06	Mar-07
◆ <b>Follow-up land and forest use planning (post relocation post DMC) testing complete</b>		<b>Mar-07</b>
Post COD Land and Forest Use Planning (Post Reservoir Filling)	Jan-10	Apr-10
◆ <b>Post COD land and forest use planning (post reservoir filling) complete</b>		<b>Apr-10</b>
<b>Progressive Development of Irrigated Farm Lots</b>	<b>Mar-05</b>	<b>Apr-09</b>
<b>Villages with Irrigation before Main Reservoir</b>	<b>Mar-05</b>	<b>Apr-08</b>
Construction of Houses (see infrastructure schedule)	Jan-06	Jul-06
Construction of Irrigation System (see infrastructure schedule)	Oct-06	May-07
Assess and Plan Farm Plots (from topo surveys)	Mar-05	Aug-05
◆ <b>Farm plots, terracing, requirements from topographic survey assessed and planned</b>		<b>Aug-05</b>
Draft Farm/Field Layout Designs	Sep-05	Nov-05
◆ <b>Draft farm/field layout designs complete</b>		<b>Nov-05</b>
Clearing of Land	Oct-05	Dec-05
◆ <b>Land cleared</b>		<b>Dec-05</b>
Demarcation of Farm Plots	Dec-05	Feb-06
Wet season upland cropping (upland rice, maize)	May-06	Sep-06
◆ <b>Wet season upland cropping (upland rice, maize) commenced</b>		<b>Sep-06</b>
Ploughing/terracing	May-07	Jul-07
◆ <b>Initial ploughing/terracing-early wet season completed</b>		<b>Jul-07</b>
1st wet season irrigated crop	Jul-07	Nov-07
◆ <b>First wet-season irrigated crop commenced</b>		<b>Jul-07</b>
1st dry season irrigated crop	Nov-07	Apr-08
◆ <b>First dry season crop completed</b>		<b>Apr-08</b>
<b>Villages whose Irrigation is from Main Reservoir</b>	<b>Mar-05</b>	<b>Apr-09</b>
Construction of Houses (see infrastructure schedule)	Jan-06	Jul-07
Construction of Irrigation System (see infrastructure schedule)	Sep-07	Jun-08
Assess and Plan Farm Plots (from topo surveys), VG1	Mar-05	Sep-05
Assess and Plan Farm Plots (from topo surveys), VG2	Sep-05	Dec-05
◆ <b>Farm plots, terracing, requirements assessed and planned from topographic survey</b>		<b>Dec-05</b>
Draft Farm/Field Layout Designs, VG1	May-05	Aug-05
Draft Farm/Field Layout Designs, VG2	Jan-06	May-06
◆ <b>Draft farm/field layout designs completed</b>		<b>May-06</b>

	Start	Finish
<b>Agriculture and Livestock Development Program</b>		
Clearing of agriculture land, VG1	Oct-05	Dec-05
Clearing of agriculture land, VG2	Mar-06	May-06
♦ <b>Land cleared</b>		<b>May-06</b>
Demarcation of Farm Plots, VG1	Dec-05	Feb-06
Demarcation of Farm Plots, VG2	May-06	Jul-06
♦ <b>Final demarcation of farm lots and contour marking completed</b>		<b>Jul-06</b>
Wet season upland cropping (upland rice, maize), VG1	May-06	Oct-07
Wet season upland cropping (upland rice, maize), VG2	May-07	Sep-07
♦ <b>Wet season upland cropping (upland rice, maize) commenced</b>		<b>May-07</b>
Ploughing/terracing, VG1	Mar-06	Apr-06
Ploughing/terracing, VG2	Dec-06	Jan-07
♦ <b>Final terracing completed</b>		<b>Jan-07</b>
1st Wet Season irrigated crop, VG1	Jun-08	Oct-08
1st Wet Season irrigated crop, VG2	Jun-08	Oct-08
1st dry season irrigated crop, VG1	Oct-08	Apr-09
1st dry season irrigated crop, VG2	Oct-08	Apr-09
♦ <b>First dry season crop completed</b>		<b>Apr-09</b>
<b>Construction/Equipment</b>	<b>Jan-07</b>	<b>Jul-08</b>
Rice mills, irrigation schemes with pre-reservoir irrigation	Jan-07	Feb-07
Rice Mills, Remaining VG1 and VG2	Jan-08	Feb-08
♦ <b>Rice Mills established</b>		<b>Feb-08</b>
Maize shelter, VG1	Jan-07	Apr-07
Maize shelter, VG2	Jan-08	May-08
♦ <b>Maize Shelter established</b>		<b>May-08</b>
Equipment (forage chopper - oil press), VG1	May-07	Jul-07
Equipment (forage chopper - oil press), VG2	May-08	Jul-08
Provision of farm equipment (seeds, ...), VG1	Mar-07	May-07
Provision of farm equipment (seeds, ...), VG2	Mar-08	May-08
♦ <b>Equipment provided</b>		<b>Jul-08</b>
<b>Rainfed Cropping with DMC Systems</b>	<b>May-05</b>	<b>Oct-10</b>
Establish and operate first set of research/trial sites	May-05	Oct-06
Establish and operate first set of research/trial sites 1	May-05	Oct-05
Establish and operate first set of research/trial sites 2	May-06	Oct-06
♦ <b>First set of research/trial site established</b>		<b>Oct-06</b>
Establish second set of trial sites	May-06	Oct-07
Establish second set of trial sites 1	May-06	Oct-06
Establish second set of trial sites 2	May-07	Oct-07
♦ <b>Second set of trial sites established</b>		<b>Oct-07</b>
Annual reports of progress	Dec-05	Jan-07
Recommendations re. feasibility and applicability of DMC	Nov-07	Dec-07
Expansion of farmer areas of DMC, as appropriate	May-08	Oct-10
<b>Trials and Demonstrations</b>	<b>Apr-04</b>	<b>Sep-10</b>
Nong Boua Project trial area	Apr-04	Sep-10
♦ <b>Nong Boua Project trial area established</b>		<b>Sep-07</b>
Nong Boua - on farm trials and demonstration	Oct-04	Sep-07
♦ <b>Nong Boua – on farm trial and demonstration complete</b>		<b>Sep-07</b>
Bouma, Phonsavang - on farm trials and demonstration	Apr-06	Sep-08
♦ <b>Bouma, Phonsavang-on farm trials and demonstration complete</b>		<b>Sep-08</b>
Phonsavang Project trial area	May-06	Sep-08
♦ <b>Phonsavang Project Trail area established</b>		<b>Sep-08</b>
Other	May-06	Sep-08
Establish operate project trial areas, as appropriate	May-07	Sep-10
Establish operate on farm trial areas, as appropriate	May-07	Sep-10

	<b>Start</b>	<b>Finish</b>
<b>Agriculture and Livestock Development Program</b>		
<b>Provision of Livelihood Equipment, Other Inputs</b>	<b>May-04</b>	<b>Apr-07</b>
Purchase power tillers, Ban Nong Boua	May-04	May-05
♦ <b>Power tillers purchased –Ban Nong Boua</b>		<b>May-05</b>
Purchase power tillers, Bouma, Phonsavang	Feb-06	Apr-06
♦ <b>Power tillers purchased –Bouma, Phonsavang</b>		<b>Apr-06</b>
Purchase power tillers, village relocation group 1	Feb-06	Apr-06
♦ <b>Power tillers – purchased Village relocation group 1</b>		<b>Apr-06</b>
Purchase power tillers, village relocation group 2	Feb-07	Apr-07
♦ <b>Power tillers purchased – Village relocation group 2</b>		<b>Apr-07</b>
<b>Provision of Seeds</b>	<b>Oct-04</b>	<b>Mar-10</b>
Purchase and distribute seeds, as appropriate and required	Oct-04	Mar-10
♦ <b>First seeds purchased and distributed</b>		<b>Oct-04</b>
Build Nong Boua seed processing facility	Oct-04	Nov-04
♦ <b>Nong Boua seed processing facility established</b>		<b>Nov-04</b>
Build Sop On seed facility	Feb-06	Mar-06
Build Nakai Tai seed facility	Dec-06	Feb-07
♦ <b>Nakai Tai seed processing facility established</b>		<b>Feb-07</b>
<b>Provision of Fertilisers</b>	<b>Apr-04</b>	<b>Jul-10</b>
Expand Nong Boua fertiliser factory	Sep-04	Oct-04
♦ <b>Nong Boua fertilizer factory expanded</b>		<b>Oct-04</b>
Build Sop On organic fertiliser factory	Jan-07	Feb-07
♦ <b>Sop On fertilizer factory established</b>		<b>Feb-07</b>
Build 2 northern organic fertiliser factories	Jan-07	Feb-09
Build northern organic fertiliser factories 1	Jan-07	Feb-07
Build northern organic fertiliser factories 2	Jan-09	Feb-09
♦ <b>2 northern organic fertilizer factories established</b>		<b>Feb-09</b>
Operate organic fertiliser factories	Mar-07	Jun-10
Operate organic fertiliser factories	Mar-07	Jun-10
♦ <b>Organic fertilizer factories operated</b>		<b>Mar-07</b>
Develop on farm production of organic fertiliser	Apr-04	Jul-10
Provision of lime	Apr-05	Apr-10
Provision of rock phosphate or dolomite	Apr-05	Apr-10
Provision of other chemical fertilisers, as appropriate	Apr-05	Jul-10
<b>Development of Extension Facilities</b>	<b>Jan-06</b>	<b>Feb-08</b>
Expansion of DAFO office	Jan-06	Apr-06
♦ <b>DAFO office expanded</b>		<b>Apr-06</b>
Provision of office equipment for DAFOs	Jan-06	Mar-07
♦ <b>Office equipment provided for DAFO</b>		<b>Mar-07</b>
Provision of Laboratory Equipment for DAFOs	Jan-06	Mar-06
♦ <b>Laboratory equipment provided for DAFO</b>		<b>Mar-06</b>
Purchase of motorcycles	Jan-06	Feb-08
♦ <b>Motorcycles purchased</b>		<b>Feb-08</b>
Building of village staff house and training centre	Jan-06	Feb-08
♦ <b>Village staff house and training centre constructed</b>		<b>Feb-08</b>
<b>Training (Ongoing Activities)</b>	<b>Mar-04</b>	<b>Oct-10</b>
Farmer extension leader training	Mar-04	Oct-10
♦ <b>Farmer extension leader training program commenced</b>		<b>May-04</b>
Training on improved rice production	Mar-04	Oct-10
♦ <b>Training on improved rice production commenced</b>		<b>May-04</b>
Improved cropping - vegetable growing skills	Mar-04	Oct-10
♦ <b>Improved cropping – vegetables growing skills commenced</b>		<b>May-04</b>
Other training, as required (improved soil fertility)	Mar-04	Oct-10







### 3.6.5 Arrangements for Procurement and Implementation

<i>Description</i>	<i>Activity</i>	<i>Implementer</i>	<i>Village Consultation/ Participation</i>
Planning	Prepare plans and policies relating to resettlement (SDP 6.2.1)	RC	Yes
	Investigate potential resources and developing livelihood scenarios in participation with relevant government agencies and district government (SDP 6.3.1)	RMU	Yes
	Develop new agro-forestry production systems in coordination with government agencies and district government (SDP 6.3.1)	RMU in collaboration with RO	Yes
	Develop Village Development Plan (SDP 6.7.10)	VRC	Yes
Supervision	Preparing and issuing resettlement regulations and internal rules (SDP 6.2.1)	RC	Yes
	Allocate roles and responsibilities for relevant agencies involved in resettlement including the RMU, DRWG, VRC and RO (SDP 6.2.1)	RC	No
	Provide technical supervision of field level activities implemented by Livestock Extension Workers and other extension workers (SDP 6.3.2),	RMU Livelihood Development and Training Unit	Yes
	Supervise the VRC (SDP 6.4)	DRWG	Yes
Implementation	Provide technical assistance to RMU Livelihood Development and Training Unit (SDP 6.3.2)	RO experts and advisers	No
	Support the introduction of diversified irrigated upland cropping and paddy rice production by providing agricultural input and enhance delivery extension mechanism during the initial resettlement period (SDP 6.5.3)	RO	No
	Coordinate the provision of technical advice to District staff responsible for agriculture, forestry and fisheries (SDP 6.3.2)	RMU Livelihood Development and Training Unit	No
	Take technical direction from RMU and RO in implementing development activities specific to their Districts in cooperation with villagers (SDP 6.4)	DRWG/DCWG	Yes
	Implement the livelihood program for villages and coordinate related training activities (SDP 6.4)	DRWG/DCWG	Yes
Training	Organize new skills training for affected individuals and villages (SDP 6.3.1)	RMU in collaboration with DRWG	Yes
	Implement livelihood program and assist in related training activities (SDP 6.4)	DRWG and DCWG	Yes
	Act as resource persons in Farmer Field Schools organized Agricultural Extension Workers and Livelihood Extension Workers (SDP 6.3.2)	RMU Livelihood Development and Training Unit	No
Scheduling	Maintain and update social and resettlement program schedule (SDP 6.5.3)	NTPC RO	No
Procurement	Engage assistance of international experts (SDP 6.5)	NTPC	No
	Assist in the procurement of inputs for Agricultural and Livestock Program (SDP 6.3.2)	RMU Livelihood Development and Training Unit	Yes
Financing	Provide any cost associated with the mitigating the social effects of the project on any PAP in accordance to CA (SDP 6.5)	NTPC	No

### 3.6.6 Monitoring

Refer also to Section 1.9 above – the following table shows specific parameters relevant to this Component:

Parameters:	Monitored by:	Comments;
Progress in livelihood and community development	RMU	Monthly resettlement progress report for each village will be prepared and aggregated by the RMU (SDP 17.1)
Progress of all activities	DRWG and DCWG	Report to the RMU and District Government (SDP 6.4)
Socio-economic status and development in the plateau PAP	NTPC RO	Develop and maintain essential databases (SDP 6.5.3)
Socio-economic data and completed resettlement delivery	RMU Compensation, Monitoring and Evaluation Unit <sup>20</sup>	Maintain GOL database in coordination with NTPC; provide information to internal and external monitoring organization (SDP 6.3.2)

Teams of independent monitors will conduct external monitoring and use internal monitoring data and other information to provide recommendations. The RC will appoint independent monitoring agency.

Household Livelihood Monitoring books record information on a regular basis with monthly summaries and annual analysis of the outcomes. Information relevant to agriculture collected through Socioeconomic Monitoring Family Book is:

<i>Record</i>	<i>Type of Information</i>	<i>Time</i>
Demographic	Occupation and labour status	Annual
Asset Inventory	Number of tractor, number of carts, number of buffalos owned and borrowed, number of buffalo for ploughing, paddy field area, field area for crops and vegetables, garden area,	Annual
Livestock	Numbers, death, births, disposal and purchased of cattle, pigs, poultry and goats	Monthly
Production	Produce amount, price (received or imputed) and returns from each livelihood component and how the produce is used	Weekly
Income	Source and amount of all household income	Monthly
Expenditure	Expenditure on all household needs including agriculture	Monthly
Others	Any other information the households wishes or is asked to record N.V. for potentially vulnerable households	

Source: SDP Table 8-5 and Annex 8-1

### 3.6.7 Milestones

#### Site Assessment and Land Use Planning

- Topographic surveys complete
- Preliminary land and forest use planning complete
- Follow-up land and forest use planning (post relocation post DMC) testing complete
- Post COD land and forest use planning (post reservoir filling) complete

<sup>20</sup> Social and Cultural Development and the Compensation, Monitoring and Evaluation Units will have branches in each District, with RMU and NTPC will maintain control over finances and databases.

### **Progressive Development of Irrigated Farm Lots**

#### **Villages with Irrigation Before Main Reservoir**

- Farm plots, terracing, requirements from topographic survey assessed and planned
- Draft farm/field layout designs complete
- Land cleared
- Wet season upland cropping (upland rice, maize) commenced
- Initial ploughing/terracing-early wet season completed
- First wet-season irrigated crop commenced
- First dry season crop completed

#### **Villages with Irrigation from Main Reservoir**

- Farm plots, terracing, requirements assessed and planned from topographic survey
- Draft farm/field layout designs completed
- Land cleared
- Wet season upland cropping (upland rice, maize) commenced
- Final demarcation of farm lots and contour marking completed
- Final terracing completed
- First dry season crop completed

#### **Construction / Equipment**

- Rice Mills established
- Maize Shelter established
- Equipment provided

#### **Rainfed Cropping With DMC Systems**

- First set of research/trial site established
- Second set of trial sites established

#### **Trails and Demonstrations**

- Nong Boua Project trail area established
- Nong Boua – on farm trail and demonstration complete
- Bouma, Phonsavang-on farm trials and demonstration complete
- Phonsavang Project Trail area established

#### **Provision of Livelihood Equipment and Other Inputs**

- Power tillers purchased –Ban Nong Boua
- Power tillers purchased –Bouma, Phonsavang
- Power tillers – purchased Village relocation group 1
- Power tillers purchased – Village relocation group 2

#### **Provision of Seeds**

- First seeds purchased and distributed
- Nong Boua seed processing facility established
- Nakai Tai seed processing facility established

### **Provision of Fertilizers**

- Nong Boua fertilizer factory expanded
- Sop On fertilizer factory established
- 2 northern organic fertilizer factories established
- Organic fertilizer factories operated

### **Development of Extension Facilities**

- DAFO office expanded
- Office equipment provided for DAFO
- Laboratory equipment provided for DAFO
- Motorcycles purchased
- Village staff house and training centre constructed

### **Training**

- Farmer extension leader training program commenced
- Training on improved rice production commenced
- Improved cropping – vegetables growing skills commenced

## 3.7 Nakai Reservoir Fisheries Development and Management Program

### 3.7.1 Issues

Resettlement entails loss of existing fishing grounds and associated changes of lifestyle and livelihoods. Conversely, the creation of the reservoir will create new fishing resources for the communities.

Daily fish catch has declined - the main reason is the increase of fishing efforts by a growing population and increased access to markets.

Other reasons for declining fish catch include use of destructive fishing gear (e.g. explosives).

The impact on fisheries and fish catch of the dam construction (Year 1), reservoir filling (Year 2), elevated levels of terrestrial biomass decay in the reservoir (Years 1-3) and the subsequent seven years. These impacts have not yet been fully determined.

### 3.7.2 Objectives / Measures

The overall rationale is to devise a reservoir management program that can sustain itself by meeting all costs of production, provide secure income to entitled beneficiary fishing associations, and gradually improve the fish stock to ensure a stabilized production rate (1000-2000 tons/year) 5-10 years after impoundment (SDP 24.1)

In the resettled villages, reservoir fisheries will:

- Form an important source of animal protein for household consumption;
- Contribute to additional household cash income; and
- Provide employment opportunities both in actual fisheries and fish trade

Limiting access to fishing grounds is an important tool to avoid over-fishing, fisheries conflicts and unsustainable fisheries practices. It is proposed to limit access to the reservoir to:

- Households of the fully relocated villages
- Non-relocated villagers who are eligible to participate in the fisheries and other livelihood programs;
- Persons not currently residing on the plateau but currently travelling there to fish.

The first year of fishing after inundation of the reservoir is estimated to be 2008<sup>21</sup>

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<sup>21</sup> In this first year, the fish population is only establishing and commercial fishing will not be allowed until 2009 in order to give the fish a chance to multiply.

The MRC Fisheries Program defines co-management as a “formalized process of sharing of authority and responsibility by government and organized users groups in decentralized decision-making aimed at improved, participatory and democratic resource management... The community feeling of ownership of the resources is crucial to the success of fisheries management... co-management can be combined with natural resource conservation. (SDP 24.7.1)

### 3.7.3 Obligations per CA

#### NTPC Obligations

<b>Reference:</b>	<b>Description:</b>
Schedule 4, Part 1 Section	
7.5.2	Participatory resource management planning to accommodate the initiation and development of the livelihood options for families and villages.
9.1.3	Assist RMU to consult with resettlers on livelihood issues
9.1.4	Steps to mitigate additional risks to ethnic minority groups, including additional training and options for livelihood development
9.9.1	Assist RMU to consult with Villagers on livelihood packages
9.10.1	Procure development & implementation of a 10 year fisheries development and management program
9.10.2	Prepare a fisheries development and management plan for a sustainable fishery in the Reservoir
9.10.3	Equipment for fishing and training courses
9.10.4	Village fish landing places
9.10.5	Ice plant and vehicles for fish traders
9.10.6	Assist RMU organise marketing of fish and fish products
9.10.7	Provision of training
9.10.8	Engage Resettlers in construction of fish landing places
10.4.1	Assist RMU in training for livelihood restoration and improvement
10.5.1	Assist RMU to Provide Other Livelihood Equipment
11.4.1	Assist RMU develop Community Development Plan
15.1(a) 4.3	Compensation and rehabilitation measures for Resettlers – fisheries and aquatic products livelihoods
15.1(a) 6.3	Compensation and rehabilitation measures for Resettlers – common property resources - fisheries
15.1(a) 8.3	Wage labour for fishery association activities

#### GoL Obligations (for reference)

<b>Reference:</b>	<b>Description:</b>
Schedule 4, Part 1 Section	
9.1.2	RMU to ensure that the fisheries resource in the Reservoir (and trading of that resource) will be for the exclusive benefit of the Plateau Resettlers, those currently fishing in the inundation zone (and their respective descendants) for a period of ten (10) years after the Commercial Operations Date.
10.7.1	RMU to establish and operate reservoir coordination and management unit.
11.5.1	RMU to consult with villages on community development plan.

### 3.7.4 Scope of Work and Key Dates

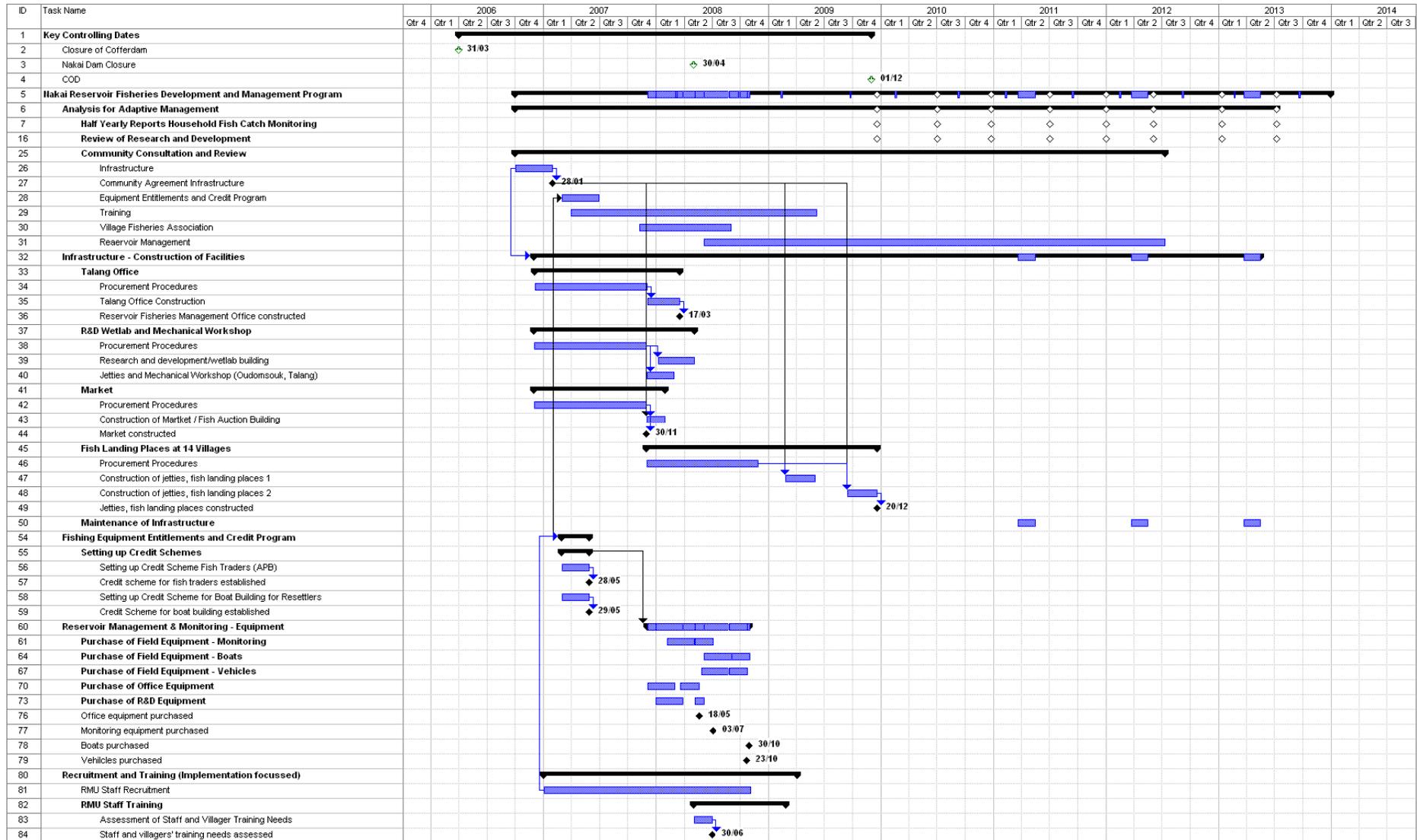
The activities supported by the project will include:

- Assistance and training of fishing households in preparation of fishing gear, in boat building, and in the operation and maintenance of boats, motors and fishing gear;
- Conditional provision of boats with motors for commercial fishers through reservoir fisheries association;
- Assistance to fish traders in procurement of ice plants, trucks and motorcycles;
- Basic infrastructure such as fish landing places at each relocated village;
- Assistance with zoning and demarcation of village fishing zones and fish sanctuaries; and
- Assistance to develop co-management aimed at sustainable and healthy fisheries

◆ denotes milestone(s)

Nakai Reservoir Fisheries Development and Management Program	Start	Finish
<b>Infrastructure - Construction of Facilities</b>	<b>Dec-06</b>	<b>May-13</b>
Talang Office	Dec-06	Mar-08
Procurement Procedures	Dec-06	Dec-07
Talang Office Construction	Dec-07	Mar-08
◆ <b>Reservoir Fisheries Management Office constructed</b>		<b>Mar-08</b>
R&D Wetlab and Mechanical Workshop	Dec-06	May-08
Procurement Procedures	Dec-06	Nov-07
Research and development/wetlab building	Jan-08	May-08
Jetties and Mechanical Workshop (Oudomsouk, Talang)	Dec-07	Feb-08
Market	Dec-06	Jan-08
Procurement Procedures	Dec-06	Nov-07
Construction of Market / Fish Auction Building	Dec-07	Jan-08
◆ <b>Market constructed</b>		<b>Nov-07</b>
Fish Landing Places at 14 Villages	Dec-07	Dec-09
Procurement Procedures	Dec-07	Nov-08
Construction of jetties, fish landing places 1	Feb-09	May-09
Construction of jetties, fish landing places 2	Sep-09	Dec-09
◆ <b>Jetties, fish landing places constructed</b>		<b>Dec-09</b>
Maintenance of Infrastructure	Mar-11	May-13
<b>Fishing Equipment Entitlements and Credit Program</b>	<b>Mar-07</b>	<b>May-07</b>
Setting up Credit Schemes	Mar-07	May-07
Setting up Credit Scheme Fish Traders (APB)	Mar-07	May-07
◆ <b>Credit scheme for fish traders established</b>		<b>May-07</b>
Setting up Credit Scheme for Boat Building for Resettlers	Mar-07	May-07
◆ <b>Credit Scheme for boat building established</b>		<b>May-07</b>
<b>Reservoir Management &amp; Monitoring - Equipment</b>	<b>Dec-07</b>	<b>Oct-08</b>
Purchase of Field Equipment - Monitoring	Feb-08	Jul-08
Purchase of Field Equipment - Boats	Jun-08	Oct-08
Purchase of Field Equipment - Vehicles	May-08	Oct-08
Purchase of Office Equipment	Dec-07	May-08
Purchase of R&D Equipment	Dec-07	Jun-08
◆ <b>Office equipment purchased</b>		<b>May-08</b>
◆ <b>Monitoring equipment purchased</b>		<b>Jul-08</b>
◆ <b>Boats purchased</b>		<b>Oct-08</b>

	<b>Start</b>	<b>Finish</b>
<b>Nakai Reservoir Fisheries Development and Management Program</b>		
♦ Vehicles purchased		<b>Oct-08</b>
<b>Recruitment and Training (Implementation focussed)</b>		<b>Dec-06</b>
<b>RMU Staff Recruitment</b>	<b>Dec-06</b>	<b>Nov-08</b>
<b>RMU Staff Training</b>	<b>May-08</b>	<b>Feb-09</b>
Assessment of Staff and Villager Training Needs	May-08	Jun-08
♦ Staff and villagers' training needs assessed		<b>Jun-08</b>
Communication Skills and Working Procedures (Staff)	Jul-08	Aug-08
♦ Training on communication skills and working procedures completed		<b>Aug-08</b>
Participatory Catch Monitoring and applied Fisheries Research	Sep-08	Oct-08
♦ Training staff and villagers on fish catch monitoring completed		<b>Oct-08</b>
Surveillance, Patrol and Enforcement	Oct-08	Dec-08
Basic Fisheries Skills	Dec-08	Feb-09
<b>Training of resettlers</b>	<b>May-07</b>	<b>Apr-09</b>
Boat Building, Operation and Maintenance	May-07	May-08
Procurement Procedures	May-07	Aug-07
Purchase of Materials and Equipment	Aug-07	Nov-07
Boat Building, Operation and Maintenance	Nov-07	May-08
♦ Boat building, operation and maintenance training delivered		<b>May-08</b>
Fishing Gear and Techniques	May-08	Jul-08
♦ Fishing Gear and Techniques Training		<b>May-08</b>
Training on gear and techniques delivered	Jul-08	Jul-08
Fish Catch Monitoring	Mar-09	Apr-09
Fish Catch Monitoring Training (Staff and Villagers) 1	Mar-09	Apr-09
♦ Fish catch monitoring training delivered		<b>Apr-09</b>
<b>Village Fisheries Association</b>	<b>Jan-08</b>	<b>Feb-09</b>
Formation of Village Fishing Groups	Jan-08	Feb-09
♦ Village Fishing Groups formed		<b>Feb-09</b>
Formation of Reservoir Fisheries Association	Jan-08	Feb-09
♦ Reservoir Fisheries Association formed		<b>Feb-09</b>
<b>Reservoir Management - Participatory Monitoring</b>	<b>Jun-08</b>	<b>Dec-13</b>
Monitoring of Household Fish Catch	Jun-08	Dec-13
Monitoring of Reservoir Fish Catch	Dec-09	Dec-13
Monitoring of Use of Drawdown Zone	Dec-09	Dec-13
<b>Reservoir Management - Zoning and Regulations</b>	<b>Sep-07</b>	<b>Dec-13</b>
<b>Registration &amp; Licensing Fishing HH &amp; HH Members</b>	Feb-08	Jun-09
Identification Potential Reservoir Fishing HH1 1	Feb-08	Apr-08
Registration & Licensing Fishing HH & HH Members 1	Apr-08	Jun-08
Identification Potential Reservoir Fishing HH1 2	Jan-09	Mar-09
♦ Potential reservoir fishing HH identified		<b>Mar-09</b>
Registration & Licensing Fishing HH & HH Members 2	Apr-09	Jun-09
♦ Registration and licensing fishing HH complete		<b>Jun-09</b>
<b>Formulation of Fishing Rules and Regulations</b>	<b>Sep-07</b>	<b>Jun-08</b>
Formulation of Fishing Rules and Regulations 1	Sep-07	Sep-07
Formulation of Fishing Rules and Regulations 2	May-08	Jun-08
♦ Fishing rules and regulations formulated		<b>Jun-08</b>
<b>Zoning &amp; Demarcation Village Fishing Area and Fish Sanctuaries in Reservoir, NBCA</b>	<b>Aug-08</b>	<b>Sep-09</b>
Zoning & Demarcation Village Fishing Area in Reservoir 1	Aug-08	Sep-08
Zoning & Demarcation Village Fishing Area in Reservoir 2	Jul-09	Sep-09
♦ Fishing area in reservoir zoned and demarked		<b>Sep-09</b>
<b>Enforcement of Fishing Rules &amp; Regulation</b>	<b>Jul-08</b>	<b>Dec-13</b>
Enforcement of Fishing Rules & Regulation	Jul-08	Dec-13
<b>NRMA Meetings - Review of Res. Uses &amp; Zonation</b>	<b>Mar-08</b>	<b>Sep-13</b>





### 3.7.5 Arrangements for Procurement and Implementation

<i>Description</i>	<i>Activity</i>	<i>Implementer</i>	<i>Village Consultation/ Participation</i>
Planning	Prepare plans and policies relating to resettlement (SDP 6.2.1)	RC	Yes
	Investigate potential resources and developing livelihood scenarios in participation with relevant government agencies and district government (SDP 6.3.1)	RMU	Yes
	Develop fisheries program (SDP 6.5.3)	NTPC RO	Yes
	Formulate fishing rules and regulations (SDP 24.7.4)	VFG, RFA, RFMO, WMPA	Yes
	Develop Village Development Plan (SDP 6.7.10)	VRC	Yes
Supervision	Prepare and issue resettlement regulations and internal rules (SDP 6.2.1)	RC	Yes
	Allocate roles and responsibilities for relevant agencies involved in resettlement including the RMU, DRWG, VRC and RO (SDP 6.2.1)	RC	No
	Provide technical supervision of field level activities implemented by Fisheries Extension Workers and other extension workers (SDP 6.3.2),	RMU Livelihood Development and Training Unit	Yes
Implementation	Provide technical assistance to RMU Livelihood Development and Training Unit (SDP 6.3.2)	RO experts and advisers	No
	Form the RFMO within the DAFO	DRWG	
	Coordinate the provision of technical advice to District staff (SDP 6.3.1)	RMU Livelihood Development and Training Unit	No
	Take technical direction from RMU and RO in implementing development activities specific to their Districts in cooperation with villagers (SDP 6.4)	DRWG/DCWG	Yes
	Implement the livelihood program for villages and coordinate related training activities (SDP 6.4)	DRWG/DCWG	Yes
	Link between fishers, government authorities and NTPC (SDP 24.7.4)	Reservoir Fisheries Association	Yes
	Manage fisheries revolving fund, maintain fish landing places and dissemination of rules and regulation (SDP 24.7.4)	Village Fishing Groups	Yes
	Register and license fishing households and members (SDP 24.7.4)	RFMO, RFA, VFG, WMPA	Yes
Training	Organize new skills training for affected individuals and villages (SDP 6.3.1)	RMU in collaboration with DRWG	Yes
	Implement livelihood program and assist in related training activities (SDP 6.4)	DRWG and DCWG	Yes
	Conduct training and awareness creation (SDP 24.7.4)	RFMO, RFA, VFG, WMPA	Yes
Scheduling	Maintain and update social and resettlement program schedule (SDP 6.5.3)	NTPC RO	No
Procurement	Engage assistance of international experts (SDP 6.5)	NTPC	No
Financing	Provide any cost associated with the mitigating the social effects of the project on any PAP in accordance to CA (SDP 6.5)	NTPC	No

### 3.7.6 Monitoring

Refer also to Section 1.9 above – the following table shows specific parameters relevant to this Component:

<b>Parameters:</b>	<b>Monitored by:</b>	<b>Comments;</b>
Progress in livelihood and community development	RMU	Monthly resettlement progress report for each village will be prepared and aggregated by the RMU (SDP 17.1)
Progress of all activities	DRWG and DCWG	Report to the RMU and District Government (SDP 6.4)
Socio-economic status and development in the plateau PAP	NTPC RO	Develop and maintain essential databases (SDP 6.5.3)
Socio-economic data and completed resettlement delivery	RMU Compensation, Monitoring and Evaluation Unit <sup>22</sup>	Maintain GOL database in coordination with NTPC; provide information to internal and external monitoring organization (SDP 6.3.2)
Daily fish catch	RFMO	In close cooperation with fishing households and the RFA VFG and WMPA (SDP 24.7.4)
Land and water use, water weeds and other flora development	RFA and the VFG the Reservoir Management Division of WMPA	In close cooperation with the RFMO (SDP 24.7.4).

Teams of independent monitors will conduct external monitoring, and will use internal monitoring data and other information to provide recommendations. The RC will appoint independent monitoring agency

Household Livelihood Monitoring books record information on a regular basis with monthly summaries and annual analysis of the outcomes. Information relevant to fisheries collected through Socioeconomic Monitoring Family Book is:

<b>Record</b>	<b>Type of Information</b>	<b>Time</b>
Demographic	Occupation and labour status	Annual
Asset Inventory	Number, area and location of fish pond	Annual
Production	Produce amount, price (received or imputed) and returns from each livelihood component and how the produce is used	Weekly
Income	Source and amount of all household income	Monthly
Expenditure	Expenditure on all household needs including agriculture	Monthly
Others	Any other information the households wishes or is asked to record N.V. for potentially vulnerable households	

Source: SDP Annex 8-1

<sup>22</sup> Social and Cultural Development and the Compensation, Monitoring and Evaluation Units will have branches in each District, with RMU and NTPC will maintain control over finances and databases.

### 3.7.7 Milestones

#### **Construction of Facilities**

- Reservoir Fisheries Management Office constructed
- Fish markets constructed
- Jetties, fish landing places constructed

#### **Fishing Equipment Entitlement and Credit Program**

- Credit scheme for fish traders established
- Credit Scheme for boat building for resettlers established

#### **Purchase of Equipment**

- Office equipment purchased
- Monitoring equipment purchased
- Boats purchased
- Vehicles purchased

#### **Village Fisheries Association**

- Village fishing groups formed
- Reservoir Fisheries Association formed

#### **Training (Implementation Focused)**

- Staff and villagers' training needs assessed
- Training staff on communication skills and working procedures completed
- Training staff and villagers on fish catch monitoring
- Training on boat building, operation and maintenance completed
- Boat building, operation and maintenance training delivered
- Training on gear and techniques completed
- Fish catch monitoring training delivered

#### **Reservoir Management: Zoning and Regulations**

- Fishing rules and regulations formulated
- Fishing area in reservoir zoned and demarcated

#### **Reservoir Management: Licensing and Enforcement**

- Potential reservoir fishing HH identified
- Fishing HH and HH members registered and licensed

### 3.8 Nakai Plateau Community Development Program

#### 3.8.1 Issues

Risk of adverse impacts associated with actual relocation processes and potential community discord;

Risk of impoverishment relating to difficulties in adapting to a new livelihood system and resource base;

Potential exploitation by others during and subsequent to relocation; and

Possible conflicts within or between communities or with government agencies over access to resources.

#### 3.8.2 Objectives / Measures

Strengthen community institutions: improve capacity of village administrative mechanisms and production groups to make decisions, manage common resources and take joint actions.

Labour issues: employ local labour in construction and encourage re-settlers to contribute their labour on a remunerated basis to resettlement site preparation.

Poverty alleviation: provide all potentially vulnerable households (PVH) with additional support and special assistance.

Gender: improve women's and men's access to labour opportunities and services to improve their decision-making powers and socio-economic conditions.

Education: provide educational support and technical assistance for nursery education, primary and secondary schooling, primary schools, secondary schooling, adult education and literacy, vocational and livelihood training; marketing training for new livelihood products

#### 3.8.3 Obligations per CA

##### NTPC Obligations

<b>Reference:</b>	<b>Description:</b>
Schedule 4, Part 1 Section	
7.3.1	Participatory planning for village layout options
7.3.2	Assist RMU to consult Resettlers on development of the village development plans
7.4.1	Prepare and move pilot village <sup>23</sup>
7.5.2	Participatory resource management planning to accommodate the initiation and development of the livelihood options for families and villages.
7.7.2	Revise Detailed Village Plans to take into account all reasonable recommendations

<sup>23</sup> This was done in 2002-03

<b>Reference:</b>	<b>Description:</b>
	from Resettlers
7.8.1	Assist GoL to ensure final choice of site to be made by resettlers
7.8.2	Ensure technical and social criteria met
8.5	Ensure consultation and/or participation by resettlers is incorporated in the process of design/construction of infrastructure/equipment
8.5.22	Move items of cultural heritage
8.6.1	Resettlers to be given every opportunity to be involved in the construction of their houses.
9.1.1	Plan and implement livelihood program and ensure employment opportunities for villagers, including Resettlers
9.1.3	Assist RMU to consult with Resettlers on livelihood issues; to provide technical training; to design appropriate methods to create awareness and stimulate interest among PAPs
9.1.4	Ensure appropriate steps to mitigate additional risks to ethnic minority groups
9.1.5	Ensure that at all times during the Resettlement Implementation Period, the Gender Resettlement Strategy (GRS) and specific gender strategy plans are implemented with due regard for SDP.
9.2.3	Adjust plans for Resettlement Process according to experience and insights gained from demonstration farm.
9.9.1	Assist RMU to consult with Villagers in Livelihood Package
10.4.1	Assist RMU training on Other Income Generating Activities and technical support
10.5.1	Assist RMU to provide Other Livelihood Equipment
11.2	Training needs assessment with technical assistance for RMU, DRWGs and VRCs
11.3.1	Assist RMU with pre-relocation activities plan – early training for new livelihood activities
11.4.1	Assist RMU to develop a community development plan
12.1.1	Assist GOL to provide a mechanism to engage stakeholders in the health program
12.3.1	Assist RMU coordinate provision of income support to households having no male working members, and provide rice and protein supplements to RMU for distribution to vulnerable households
12.3.3	Use reasonable endeavours to ensure opportunity for Resettlers to participate in employment activities
15.1(c)	Livelihood operational support for Resettlers

**GoL Obligations (for reference)**

<b>Reference:</b>	<b>Description:</b>
Schedule 4, Part 1 Section	
7.3.4	RMU to advise RO of Resettlers' input and advice
7.5.1	Nam Theun 2 Land Decree
7.7.1	RMU to consult with Resettlers on Detailed Village Plans and provide rationale and relevant data and inform RO
8.5	Ensure consultation and/or participation by resettlers is incorporated in the process of design/construction of infrastructure/equipment
8.5.21	Consultations regarding cultural heritage, and provide detailed plans to the Company regarding relocation.
8.7.1	Due time and appropriate support to be given to Resettlers to ensure that all appropriate rituals are conducted prior to relocation
8.7.3	RMU to ensure that only bona fide Resettlers permitted in the Resettlement Area until Resettlers fully established and livelihood model proven successful.
8.7.4	Flexibility required to allow relatives to return.
9.1.1	Plan and implement livelihood program and ensure employment opportunities for villagers, including Resettlers
9.1.4	Ensure appropriate steps to mitigate additional risks to ethnic minority groups
9.1.5	Ensure that at all times during the Resettlement Implementation Period, the Gender Resettlement Strategy (GRS) and specific gender strategy plans are implemented with due regard for SDP.

<b>Reference:</b>	<b>Description:</b>
11.1.1	Set up Village Resettlement Committee in each village
11.5.1	RMU to consult with villages on community development plan.
12.3.2	RMU to arrange for provision and distribution of transitional income support

### 3.8.4 Scope of Work and Key Dates

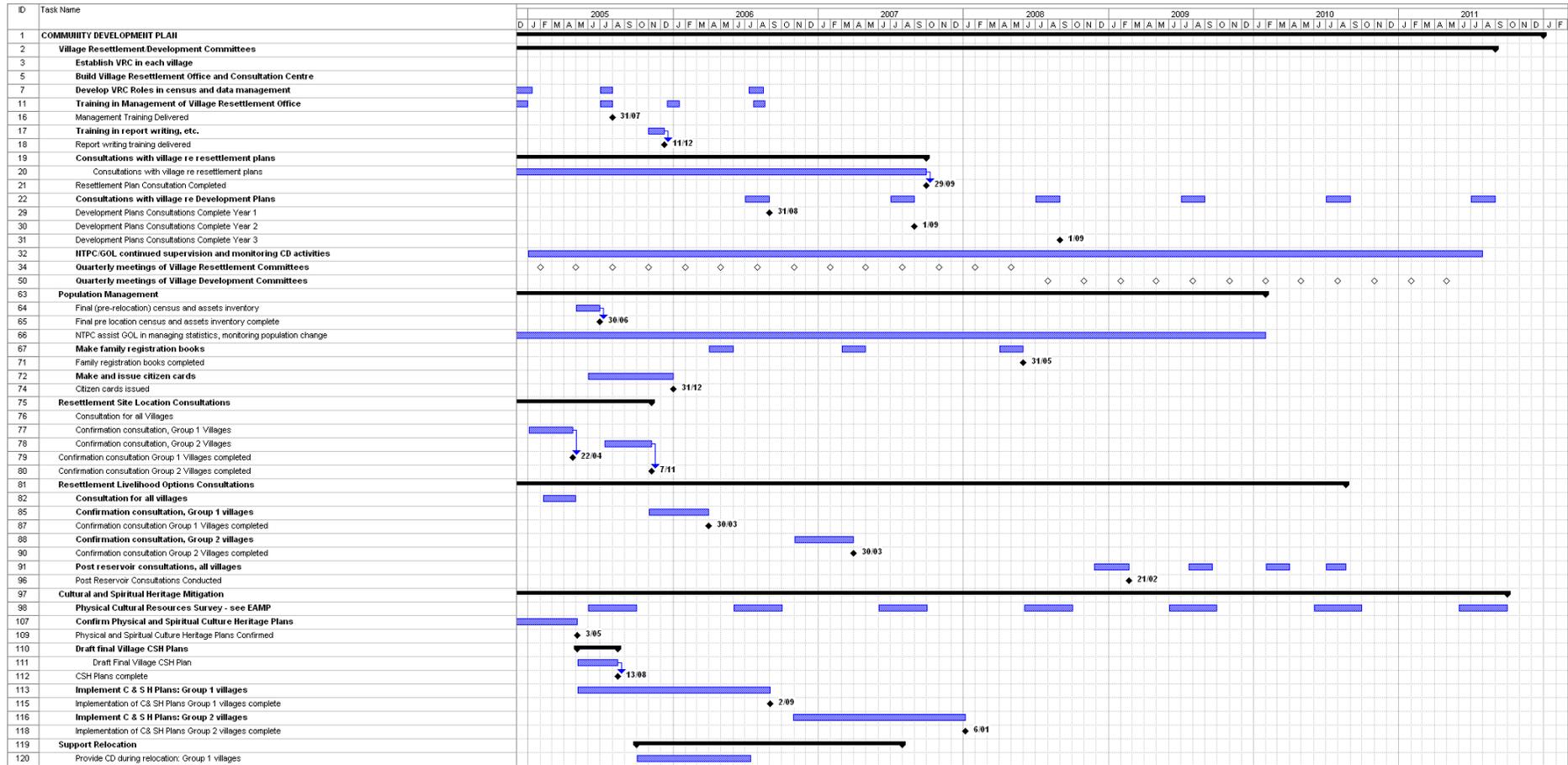
◆ denotes milestone(s)

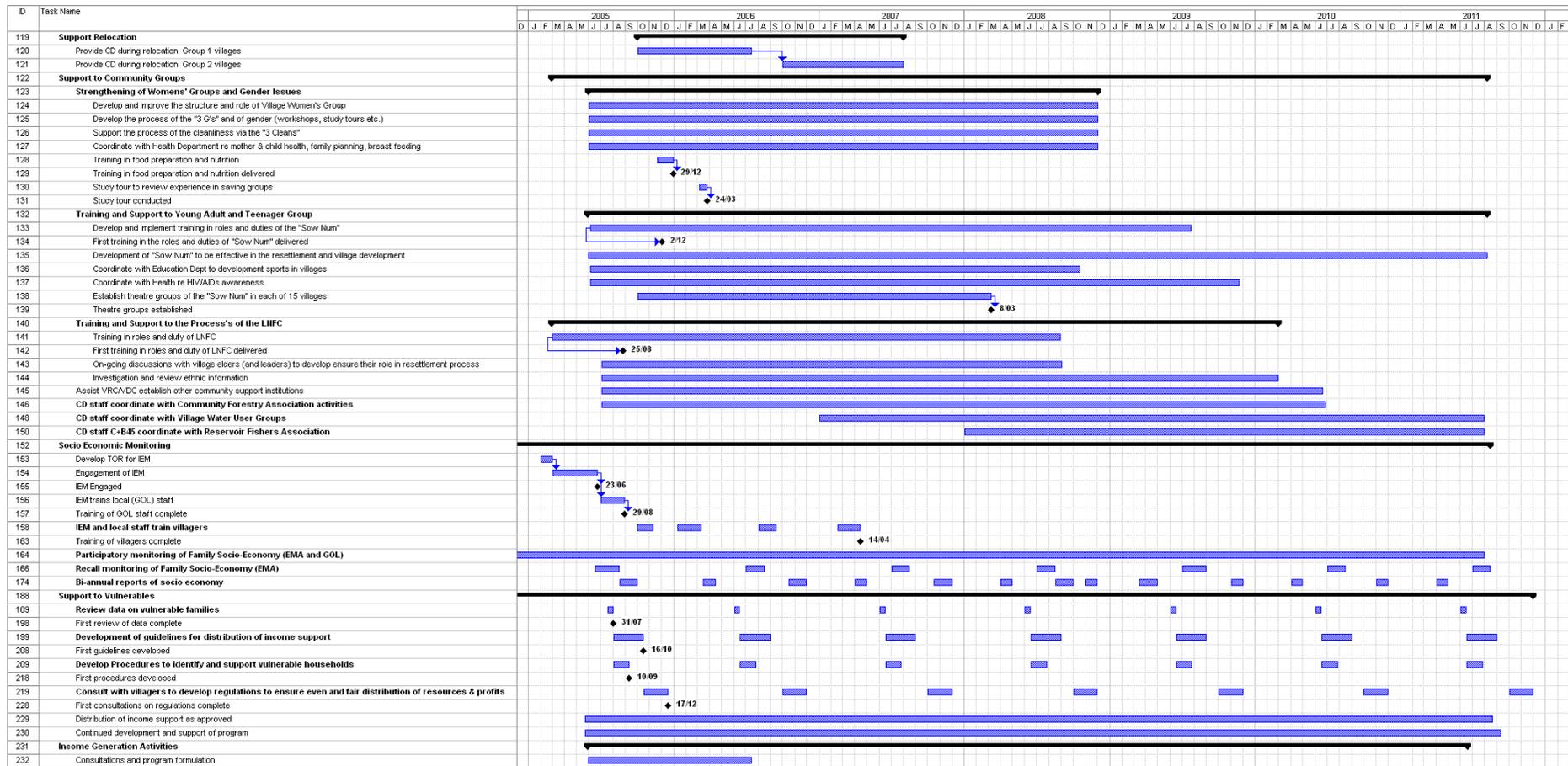
<b>COMMUNITY DEVELOPMENT PLAN</b>	<b>Start</b>	<b>Finish</b>
<b>Village Resettlement/Development Committees</b>	<b>Mar-04</b>	<b>Aug-11</b>
Establish VRC in each village	Mar-04	Mar-04
Build Village Resettlement Office and Consultation Centre	Jun-04	Nov-04
Develop VRC Roles in census and data management	Dec-04	Aug-06
Training in Management of Village Resettlement Office	Dec-04	Aug-06
◆ <b>Management Training Delivered</b>		<b>Jul-05</b>
Training in report writing, etc.	Oct-05	Dec-05
◆ <b>Report writing training delivered</b>		<b>Dec-05</b>
Consultations with village re resettlement plans	Mar-04	Sep-07
Consultations with village re resettlement plans	Mar-04	Sep-07
◆ <b>Resettlement Plan Consultation Completed</b>		<b>Sep-07</b>
Consultations with village re Development Plans	Jul-06	Aug-11
◆ <b>Development Plans Consultations Complete Year 1</b>		<b>Aug-06</b>
◆ <b>Development Plans Consultations Complete Year 2</b>		<b>Sep-07</b>
◆ <b>Development Plans Consultations Complete Year 3</b>		<b>Sep-08</b>
NTPC/GOL continued supervision and monitoring CD activities	Jan-05	Jul-11
Quarterly meetings of Village Resettlement Committees	Nov-04	May-08
Quarterly meetings of Village Development Committees	Aug-08	May-11
<b>Population Management</b>	<b>Mar-04</b>	<b>Jan-10</b>
Final (pre-relocation) census and assets inventory	May-05	Jun-05
◆ <b>Final pre location census and assets inventory complete</b>		<b>Jun-05</b>
NTPC assist GOL in managing statistics, monitoring population change	Mar-04	Jan-10
Make family registration books	Apr-06	May-08
◆ <b>Family registration books completed</b>		<b>May-08</b>
Make and issue citizen cards	Jun-05	Dec-05
◆ <b>Citizen cards issued</b>		<b>Dec-05</b>
<b>Resettlement Site Location Consultations</b>	<b>Mar-04</b>	<b>Nov-05</b>
◆ <b>Confirmation consultation Group 1 Villages completed</b>		<b>Apr-05</b>
◆ <b>Confirmation consultation Group 2 Villages completed</b>		<b>Nov-05</b>
<b>Resettlement Livelihood Options Consultations</b>	<b>Mar-04</b>	<b>Aug-10</b>
Consultation for all villages	Mar-04	Apr-05
Confirmation consultation, Group 1 villages	Nov-05	Mar-06
◆ <b>Confirmation consultation Group 1 Villages completed</b>		<b>Mar-06</b>
Confirmation consultation, Group 2 villages	Nov-06	Mar-07
◆ <b>Confirmation consultation Group 2 Villages completed</b>		<b>Mar-07</b>
Post reservoir consultations, all villages	Nov-08	Aug-10
◆ <b>Post Reservoir Consultations Conducted</b>		<b>Feb-09</b>
<b>Cultural and Spiritual Heritage Mitigation</b>	<b>Jun-04</b>	<b>Sep-11</b>
Physical Cultural Resources Survey - see EAMP	Jun-04	Sep-11
Confirm Physical and Spiritual Culture Heritage Plans	Aug-04	May-05
◆ <b>Physical and Spiritual Culture Heritage Plans Confirmed</b>		<b>May-05</b>
Draft final Village CSH Plans	May-05	Aug-05
◆ <b>CSH Plans complete</b>		<b>Aug-05</b>
Implement C & S H Plans: Group 1 villages	May-05	Sep-06

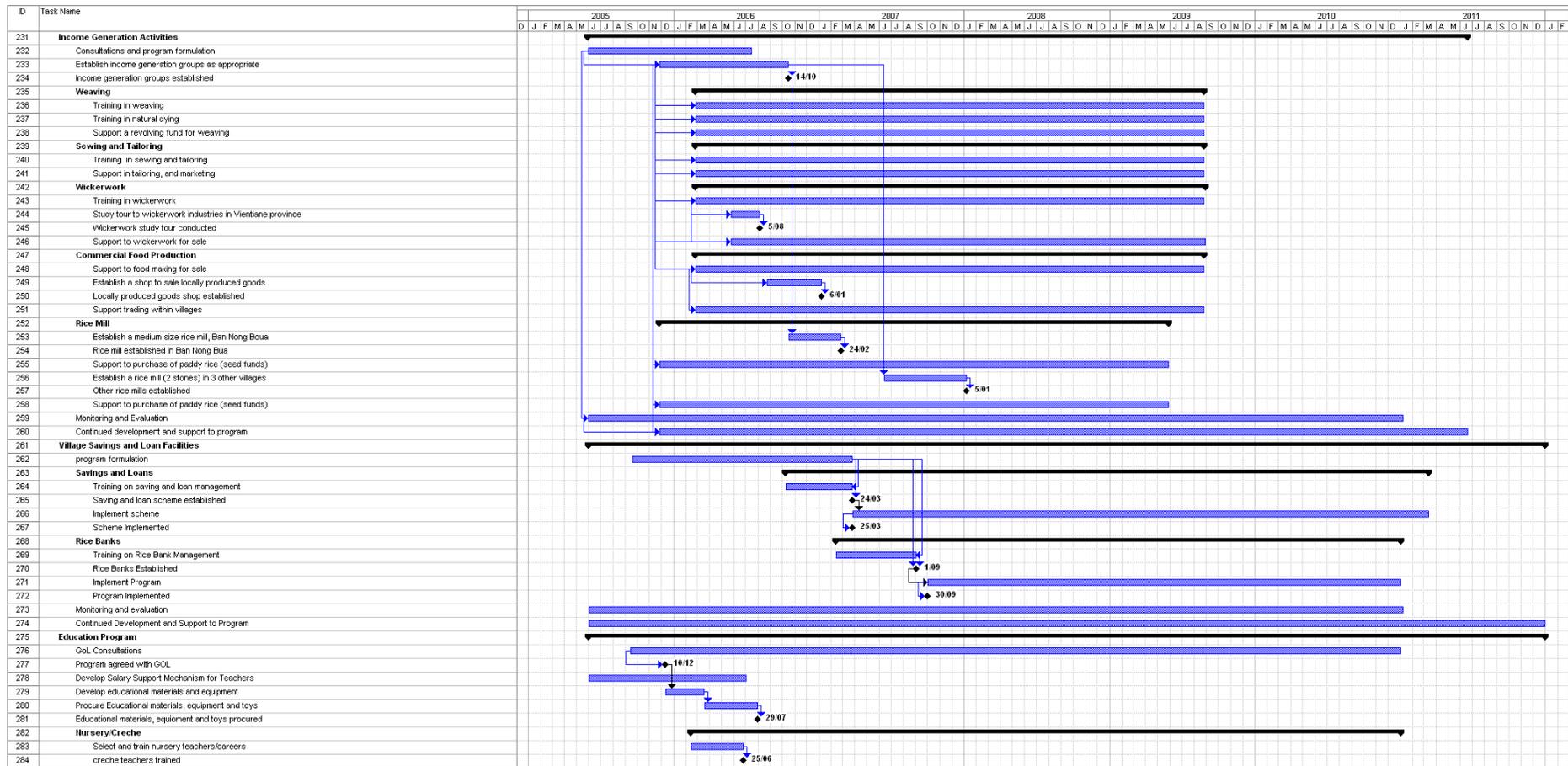
	Start	Finish
<b>COMMUNITY DEVELOPMENT PLAN</b>		
♦ <b>Implementation of C&amp; SH Plans Group 1 villages complete</b>		<b>Sep-06</b>
Implement C & S H Plans: Group 2 villages	Oct-06	Jan-08
♦ <b>Implementation of C&amp; SH Plans Group 2 villages complete</b>		<b>Jan-08</b>
<b>Support Relocation</b>	<b>Oct-05</b>	<b>Jul-07</b>
Provide CD during relocation: Group 1 villages	Oct-05	Jul-06
Provide CD during relocation: Group 2 villages	Oct-06	Jul-07
<b>Support to Community Groups</b>	<b>Feb-05</b>	<b>Aug-11</b>
<b>Strengthening of Womens' Groups and Gender Issues</b>	<b>Jun-05</b>	<b>Dec-08</b>
Develop and improve the structure and role of Village Women's Group	Jun-05	Dec-08
Develop the process of the "3 G's" and of gender (workshops, study tours etc.)	Jun-05	Dec-08
Support the process of the cleanliness via the "3 Cleans"	Jun-05	Dec-08
Coordinate with Health Department re mother & child health, family planning, breast feeding	Jun-05	Dec-08
Training in food preparation and nutrition	Nov-05	Dec-05
♦ <b>Training in food preparation and nutrition delivered</b>		<b>Dec-05</b>
Study tour to review experience in saving groups	Mar-06	Mar-06
♦ <b>Study tour conducted</b>		<b>Mar-06</b>
<b>Training and Support to Young Adult and Teenager Group</b>	<b>May-05</b>	<b>Aug-11</b>
Develop and implement training in roles and duties of the "Sow Num"	Jun-05	Jul-09
♦ <b>First training in the roles and duties of "Sow Num" delivered</b>		<b>Dec-05</b>
Development of "Sow Num" to be effective in the resettlement and village development	May-05	Aug-11
Coordinate with Education Dept to development sports in villages	Jun-05	Oct-08
Coordinate with Health re HIV/AIDs awareness	Jun-05	Nov-09
Establish theatre groups of the "Sow Num" in each of 15 villages	Oct-05	Mar-08
♦ <b>Theatre groups established</b>		<b>Mar-08</b>
<b>Training and Support to the Process's of the LNFC</b>	<b>Feb-05</b>	<b>Feb-10</b>
Training in roles and duty of LNFC	Feb-05	Aug-08
♦ <b>First training in roles and duty of LNFC delivered</b>		<b>Aug-05</b>
On-going discussions with village elders (and leaders) to develop ensure their role in resettlement process	Jul-05	Sep-08
Investigation and review ethnic information	Jul-05	Feb-10
Assist VRC/VDC establish other community support institutions	Jul-05	Jun-10
<b>CD staff coordinate with Community Forestry Association activities</b>	Jul-05	Jun-10
<b>CD staff coordinate with Village Water User Groups</b>	Jan-07	Jul-11
<b>CD staff C+B45 coordinate with Reservoir Fishers Association</b>	Jan-08	Jul-11
<b>Socio Economic Monitoring</b>	<b>Mar-04</b>	<b>Aug-11</b>
Develop TOR for IEM	Jan-05	Mar-05
Engagement of IEM	Mar-05	Jun-05
♦ <b>IEM Engaged</b>		<b>Jun-05</b>
IEM trains local (GOL) staff	Jun-05	Aug-05
♦ <b>Training of GOL staff complete</b>		<b>Aug-05</b>
IEM and local staff train villagers	Sep-05	Apr-07
♦ <b>Training of villagers complete</b>		<b>Apr-07</b>
Participatory monitoring of Family Socio-Economy (EMA and GOL)	Mar-04	Jul-11
Recall monitoring of Family Socio-Economy (EMA)	Jun-05	Aug-11
Bi-annual reports of socio economy	Aug-05	Apr-11
<b>Support to Vulnerables</b>	<b>Jun-04</b>	<b>Nov-11</b>
Review data on vulnerable families	Jun-04	Jun-11
♦ <b>First review of data complete</b>		<b>Jul-05</b>
Development of guidelines for distribution of income support	Jun-04	Aug-11
♦ <b>First guidelines developed</b>		<b>Oct-05</b>
Develop Procedures to identify and support vulnerable households	Jun-04	Jul-11
♦ <b>First procedures developed</b>		<b>Sep-05</b>
Consult with villagers to develop regulations to ensure even and fair distribution of resources & profits	Oct-04	Nov-11

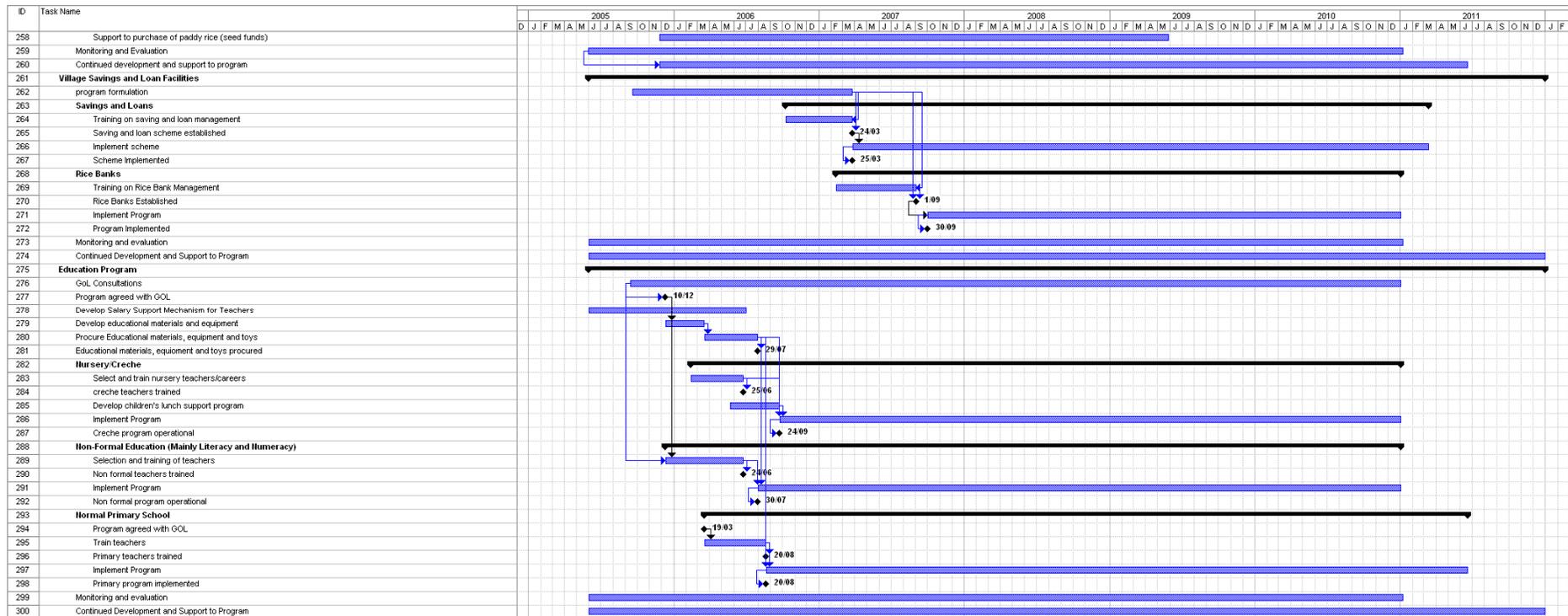
	Start	Finish
<b>COMMUNITY DEVELOPMENT PLAN</b>		
♦ <b>First consultations on regulations complete</b>		<b>Dec-05</b>
Distribution of income support as approved	May-05	Aug-11
Continued development and support of program	May-05	Sep-11
<b>Income Generation Activities</b>	<b>May-05</b>	<b>Jun-11</b>
Consultations and program formulation	May-05	Jul-06
Establish income generation groups as appropriate	Nov-05	Oct-06
♦ <b>Income generation groups established</b>		<b>Oct-06</b>
<b>Weaving</b>	<b>Feb-06</b>	<b>Aug-09</b>
Training in weaving	Feb-06	Aug-09
Training in natural dying	Feb-06	Aug-09
Support a revolving fund for weaving	Feb-06	Aug-09
<b>Sewing and Tailoring</b>	<b>Feb-06</b>	<b>Aug-09</b>
Training in sewing and tailoring	Feb-06	Aug-09
Support in tailoring, and marketing	Feb-06	Aug-09
<b>Wickerwork</b>	<b>Feb-06</b>	<b>Aug-09</b>
Training in wickerwork	Feb-06	Aug-09
Study tour to wickerwork industries in Vientiane province	May-06	Aug-06
♦ <b>Wickerwork study tour conducted</b>		<b>Aug-06</b>
Support to wickerwork for sale	May-06	Aug-09
<b>Commercial Food Production</b>	<b>Feb-06</b>	<b>Aug-09</b>
Support to food making for sale	Feb-06	Aug-09
Establish a shop to sale locally produced goods	Aug-06	Jan-07
♦ <b>Locally produced goods shop established</b>		<b>Jan-07</b>
Support trading within villages	Feb-06	Aug-09
<b>Rice Mill</b>	<b>Nov-05</b>	<b>May-09</b>
Establish a medium size rice mill, Ban Nong Boua	Oct-06	Feb-07
♦ <b>Rice mill established in Ban Nong Bua</b>		<b>Feb-07</b>
Support to purchase of paddy rice (seed funds)	Nov-05	May-09
Establish a rice mill (2 stones) in 3 other villages	Jun-07	Jan-08
♦ <b>Other rice mills established</b>		<b>Jan-08</b>
Support to purchase of paddy rice (seed funds)	Nov-05	May-09
Monitoring and Evaluation	May-05	Jan-11
Continued development and support to program	Nov-05	Jun-11
<b>Village Savings and Loan Facilities</b>	<b>Jun-05</b>	<b>Dec-11</b>
program formulation	Sep-05	Mar-07
<b>Savings and Loans</b>	<b>Oct-06</b>	<b>Mar-11</b>
Training on saving and loan management	Oct-06	Mar-07
♦ <b>Saving and loan scheme established</b>		<b>Mar-07</b>
Implement scheme	Mar-07	Mar-11
♦ <b>Scheme Implemented</b>		<b>Mar-07</b>
<b>Rice Banks</b>	<b>Feb-07</b>	<b>Apr-11</b>
Training on Rice Bank Management	Feb-07	Sep-07
♦ <b>Rice Banks Established</b>		<b>Sep-07</b>
Implement Program	Sep-07	Jan-11
♦ <b>Program Implemented</b>		<b>Sep-07</b>
Monitoring and evaluation	Jun-05	Jan-11
Continued Development and Support to Program	Jun-05	Dec-11
<b>Education Program</b>	<b>Jun-05</b>	<b>Dec-11</b>
GoL Consultations	Sep-05	Jan-11
♦ <b>Program agreed with GOL</b>		<b>Dec-05</b>
Develop Salary Support Mechanism for Teachers	Jun-05	Jul-06
Develop educational materials and equipment	Dec-05	Mar-06
Procure Educational materials, equipment and toys	Mar-06	Jul-06

	<b>Start</b>	<b>Finish</b>
<b>COMMUNITY DEVELOPMENT PLAN</b>		
♦ <b>Educational materials, equipment and toys procured</b>		<b>Jul-06</b>
<b>Nursery/Creche</b>	<b>Feb-06</b>	<b>Jan-11</b>
Select and train nursery teachers/careers	Feb-06	Jun-06
♦ <b>creche teachers trained</b>		<b>Jun-06</b>
Develop children's lunch support program	May-06	Sep-06
Implement Program	Sep-06	Jan-11
♦ <b>Creche program operational</b>		<b>Sep-06</b>
<b>Non-Formal Education (Mainly Literacy and Numeracy)</b>	<b>Dec-05</b>	<b>Jan-11</b>
Selection and training of teachers	Dec-05	Jun-06
♦ <b>Non formal teachers trained</b>		<b>Jun-06</b>
Implement Program	Jul-06	Jan-11
♦ <b>Non formal program operational</b>		<b>Jul-06</b>
<b>Normal Primary School</b>	<b>Mar-06</b>	<b>Jun-11</b>
♦ <b>Program agreed with GOL</b>		<b>Mar-06</b>
Train teachers	Mar-06	Aug-06
♦ <b>Primary teachers trained</b>		<b>Aug-06</b>
Implement Program	Aug-06	Jun-11
♦ <b>Primary program implemented</b>		<b>Aug-06</b>
Monitoring and evaluation	Jun-05	Jan-11
Continued Development and Support to Program	Jun-05	Dec-11









### 3.8.5 Arrangements for Procurement and Implementation

<i>Description</i>	<i>Activity</i>	<i>Implementer</i>	<i>Village Consultation/ Participation</i>
Planning	Prepare plans and policies relating to resettlement (SDP 6.2.1)	RC	Yes
	Organize a community development program in coordination with government agencies and district government (SDP 6.3.1)	RMU in collaboration with RO	Yes
	Develop Village Development Plan (SDP 6.7.10)	VRC	Yes
Supervision	Prepare and issue resettlement regulations and internal rules (SDP 6.2.1)	RC	No
	Allocate roles and responsibilities for relevant agencies involved in resettlement including the RMU, DRWG, VRC and RO (SDP 6.2.1)	RC	No
	Ensure that LWU's participation in resettlement process and address gender issues and initiate income generating activities for women	RMU	Yes
	Provide technical supervision of field level activities implemented by Extension Workers and Village Forestry Agents (SDP 6.3.2),	RMU Livelihood Development and Training Unit	Yes
	Supervise the VRC (SDP 6.4)	DRWG	
Implementation	Ensure that customary rituals are followed in relocation activities and ethnic and cultural aspects are fully considered in resettlement planning and implementation ((SDP 6.3.2)	RMU Social Services Development Unit	Yes
	Monitor and resolve any issues which may affect community cohesion (SDP 6.3.2)	RMU Social Services Development Unit	Yes
	Manage the education program (SDP 6.3.2)	RMU Social Services Development Unit	Yes
	Recover and relocate of moveable historical artefacts in conjunction with Provincial and District Culture and Information Offices (SDP 26.7.2)	RMU	Yes
	Take technical direction from RMU and RO in implementing development activities specific to their Districts in cooperation with villagers (SDP 6.4)	DRWG/DCWG	Yes
	Implement the livelihood program for villages and coordinate related training activities (SDP 6.4)	DRWG/DCWG	Yes
Training	Organize new skills training for affected individuals and villages (SDP 6.3.1)	RMU and DRWG	Yes
	Implement livelihood program and assist in related training activities (SDP 6.4)	DRWG and DCWG	Yes
Scheduling	Maintain and update the social and resettlement program schedule (SDP 6.5.3)	NTPC RO	No
Procurement	Engage assistance of international experts (SDP 6.5)	NTPC	No
Financing	Provide any cost associated with the mitigating the social effects of the project on any PAP in accordance to CA (SDP 6.5)	NTPC	No

### 3.8.6 Monitoring

Parameters:	Monitored by:	Comments;
Progress in livelihood and community development	RMU	Monthly resettlement progress report for each village will be prepared and aggregated by the RMU (SDP 17.1)
Progress of all activities	DRWG and DCWG	Report to the RMU and District Government (SDP 6.4)
Socio-economic status and development in the plateau PAP	NTPC RO	Develop and maintain essential databases (SDP 6.5.3)
Socio-economic data and completed resettlement delivery	RMU Compensation, Monitoring and Evaluation Unit	Maintain GOL database in coordination with NTPC; provide information to internal and external monitoring organization (SDP 6.3.2)

Teams of independent monitors will conduct external monitoring and use internal monitoring data and other information to provide recommendations. The RC will appoint the independent monitoring agency

Household Livelihood Monitoring books record information on a regular basis with monthly summaries and annual analysis of the outcomes. The type of information recorded is:

<i>Record</i>	<i>Type of Information</i>	<i>Time</i>
Demographic	Household numbers, age sex, occupation and labour status	Annual
Asset Inventory	House type and condition, household assets, tools and equipment	Annual
Subsistence needs	Family rice requirements per day, month and year based on family size	Weekly
Consumption	Actual	
Livelihood	Components	
Land use	Land parcel, land area, land type, tenure status and cropping pattern	Annual
Labour use	Labour allocation among livelihood options included to analyze returns from different enterprises	
Livestock	Numbers, death, births, disposal and purchased of cattle, pigs, poultry and fish	Monthly
Production	Produce amount, price (received or imputed) and returns from each livelihood component and how the produce is used	Weekly
Income	Source and amount of all household income	Monthly
Expenditure	Expenditure on all household needs including agriculture	Monthly
Others	Any other information the households wishes or is asked to record N.V. for potentially vulnerable households	
<b>Summaries</b>		
Income	Source and amount of all income from sale or barter	Quarterly/Annual
Expenses	Category and amount of all household expenditure	Quarterly/Annual
Savings	Amount and method of household savings	Quarterly/Annual
Consumption	Type and value of all household consumption	Quarterly/Annual
Rice Supply	Rice supply balance sheet showing production, consumption, sales, purchase, borrowed and amount remaining	Quarterly/Annual

Source: SDP Table 8-7

A set of social indicators will also be develop to measure the changes and economic conditions of the villages, individual households and households disaggregated by ethnic groups. (SDP 17.3) Sample social monitoring indicators are:

<i>Indicator</i>	<i>Measurement</i>
Household income	USD per year
School attendance	Number of functional schools; Number of school-age children enrolled
Literacy Rate	Women's literacy rate; Adult literacy rate
Health Facilities	Clinic per village; Trained health personnel per village; Equipment per village
Nutritional Status	Weight-height ratio of infants; Number of re-settlers with potable water
Malaria	Percent of cases
Presence or Parasitic Disease	Percent of infected population
Child mortality	Number of death per 1000 live birth
Rate of maternal Ante-natal care	Percent of Women with ante-natal care; Percent of birth assisted by doctor or health worker

Source: SDP Table 17.1

### 3.8.7 Milestones

#### **Village Resettlement/Development Committees**

- Management Training Delivered
- Report writing training delivered
- Resettlement Plan Consultation Completed
- Development Plans Consultations Complete Year 1
- Development Plans Consultations Complete Year 2
- Development Plans Consultations Complete Year 3

#### **Population Management**

- Final pre location census and assets inventory complete
- Family registration books completed
- Citizen cards issued

#### **Resettlement Site Location Consultations**

- Confirmation consultation Group 1 Villages completed
- Confirmation consultation Group 2 Villages completed

#### **Resettlement Livelihood Options Consultations**

- Confirmation consultation Group 1 Villages completed
- Confirmation consultation Group 2 Villages completed
- Post Reservoir Consultations Conducted

#### **Cultural and Spiritual Heritage Mitigation**

- Physical and Spiritual Culture Heritage Plans Confirmed
- CSH Plans complete
- Implementation of C& SH Plans Group 1 villages complete
- Implementation of C& SH Plans Group 1 villages complete

#### **Support to Community Groups**

##### **Strengthening of Womens' Groups and Gender Issues**

- Training in food preparation and nutrition delivered
- Study tour conducted

##### **Training and Support to Young Adult and Teenager Group**

- First training in the roles and duties of "Sow Num" delivered
- Theatre groups established

##### **Training and Support to the Process's of the LNFC**

- First training in roles and duty of LNFC delivered

#### **Socio Economic Monitoring**

- IEM Engaged
- Training of GOL staff complete
- Training of villagers complete

#### **Support to Vulnerables**

- First review of data complete
- First guidelines developed
- First procedures developed
- First consultations on regulations complete

#### **Income Generation Activities**

##### **Income generation groups established**

- Wickerwork study tour conducted
- Locally produced goods shop established
- Rice mill established in Ban Nong Bua

Other rice mills established

**Village Savings and Loan Facilities**

**Savings and Loans**

Saving and loan scheme established

Scheme Implemented

**Rice Banks**

Rice Banks Established

Program Implemented

**Education Program**

Program agreed with GOL

Educational materials, equipment and toys procured

**Nursery/Creche**

Creche teachers trained

Creche program operational

**Non-Formal Education (Mainly Literacy and Numeracy)**

Non formal teachers trained

Non formal program operational

**Normal Primary School**

Program agreed with GOL

Primary teachers trained

Primary program implemented