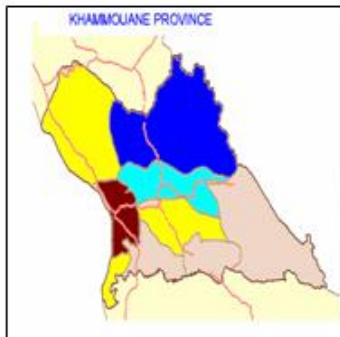




Lao People's Democratic Republic
Peace Independence Democracy Unity Prosperity

Flood Preparedness Program Nong Bok District Khammouane Province



District Administration Office (No.793)

Prepared by
District Disaster Management Committee (DDMC)
2007

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under the DIPECHO 5th Action Plan for South East Asia*



Lao People Democratic Republic
Peace Independence Democratic Unity Prosperity

Khammouane province
Nongbok district
District Administration Office No.793
(District Disaster Management Committee - DDMC)

Flood Preparedness Plan for 2007-2008 Nongbok District, Khammouane Province

- Based on: The 6th 5 years Socio-economic Development Plan of Nongbok, No.259, date: 25/5/2006.
- Based on: District Governor's Decree, No.091, date: 28/3/2007 about appointment of the DDMC.
- Based on: DDMC Report, No. 188, date: 20/10/2005.

1. Introduction

1.1 Background

Nongbok District is located between two large rivers (Mekong River and Xebangphay River) including many streams and low land. Nongbok is one of high flood risk areas. In the pass years, the area was hit by natural disasters, floods and droughts in particular, at least once a year.. The flood caused large impact to livelihood and property of people including socio-economic, administration and cultural aspects.

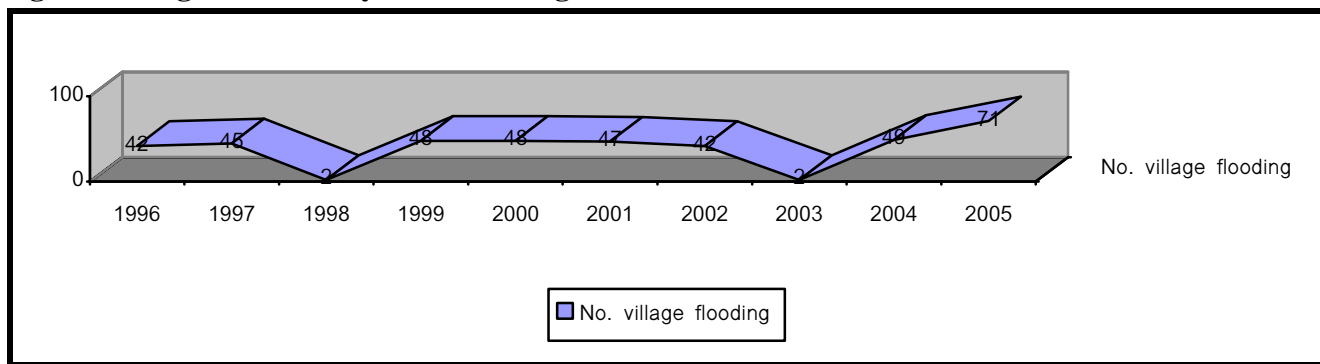
1.2 Experience of previous flood

Over a 10-year period (1996-2005), the impacts of previous flood affected various local and nation bodies including government, province, district, villages as well as the villagers. Mechanisms to cope with flood have been developed, such as flood preparedness planning that encourages people to conduct the protection, mitigation and compensation activities. Moreover, the District Disaster Management Committee (DDMC) has paid attention to implement/insert their roles & responsibilities, which was indicated in 2005 where largest flood in 20 years period occurred. Flood information in the past 10 years (1996-2005) is summarized in the following **Table** and **Figure**:

Table: Villages affected by flood in Nongbok district in 1996-2005

Year	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
No. village	42	45	2	48	48	48	42	2	49	71

Figure: Villages affected by flood in Nongbok District in 1996-2005



1.3 Objectives and strategy

1.3.1 Objectives

- To link the Flood Preparedness Plan of Nongbok district with the Disaster Management Strategy at national and provincial levels.
- To prepare for disaster prevention, response, mitigation, and rehabilitation that may occur annually.
- To be a reference for following-up and monitoring & evaluation of the flood preparedness implementation.
- To facilitate FPP implementation under PDMC and DDMC leadership in close coordination with their members and local volunteers.
- To be a standard or guidelines for the field work operation teams for smooth and effective in time operation.

1.3.2 Disaster strategy management

- Identify high risk and vulnerable area to flood and develop plan, projects and activities for prevention, mitigation and rehabilitation purposes as well as promote sustainable environmental protection and natural resources conservation.
- Use local capacity to carry out efficient administration management system.
- Look for the financial support and resources needed, such as material/equipment, from local and other areas i.e. international organizations, NGOs, governmental organizations, business/ private sectors, especially from MRC-ADPC project.
- Consider protection and mitigation of flood risk as first priority, followed by relief and rehabilitation and loss of life and people/public property reduction.
- Seek for budget support for constructing infrastructure such as road, embankment, irrigation system, and water canal in flood area to discharge flood water to the Mekong River.

1.4 Responsibility

1.4.1 Responsibility of DDMC

- District Disaster Management Committee (DDMC) was appointed by District Governor. The DDMC consists of the District Deputy Governor as Chairman, with the Director or Deputy Director of concerned Department as the committee members. The DDMC Secretariat was also appointed leading by Head of District Administration as Secretariat of the DDMC.

- Roles & responsibilities of the DDMC are to define way/measures and strategy for planning; developing projects and implementing activities related to disaster preparedness, response and recovery to reduce damage and losses that may cause from the disaster.
- DDMC to follow-up, monitor and update disaster situation in every period of time (before, between and after disaster).
- DDMC to plan, develop and conduct project activities, organize meeting to summarize implementation's results and make action plans in every period (before, during and after disaster), then report to District Governor and the DDMC regularly. In case of emergency situation, DDMC can call for extraordinary meeting to solve the problem promptly.

1.4.2 Responsibility of DDMC Secretariat

- To support the DDMC including data collection, summary and analysis, project/regulation development and implementation.
- To follow-up, monitor and be informed by concerned authorities and to coordinate with related agencies in district and provincial levels.
- To prepare important material/equipment, budget, and other demands ready for DDMC and its teams to take action in time.
- Organize DDMC meetings to report and discuss experiences and lessons learned regularly.

1.4.3 Responsibility of District Governor

- District Governor, the highest administrative authority in the district, has his right to approve and command on action, decree, and rules/regulations for implementation of DDMC on disaster prevention, mitigation, relief and rehabilitation that occurred annually.

1.5 Plan preparation date and updating notes

1.5.1 Plan preparation year and validity

- Plan preparation: August 2007
- Valid until: December 2008

1.5.2 Review and updating

- The plan will be reviewed after flood for identifying flood prevention measures.
- The plan will be updated in July 2008.

2. District profile

2.1 Area coverage

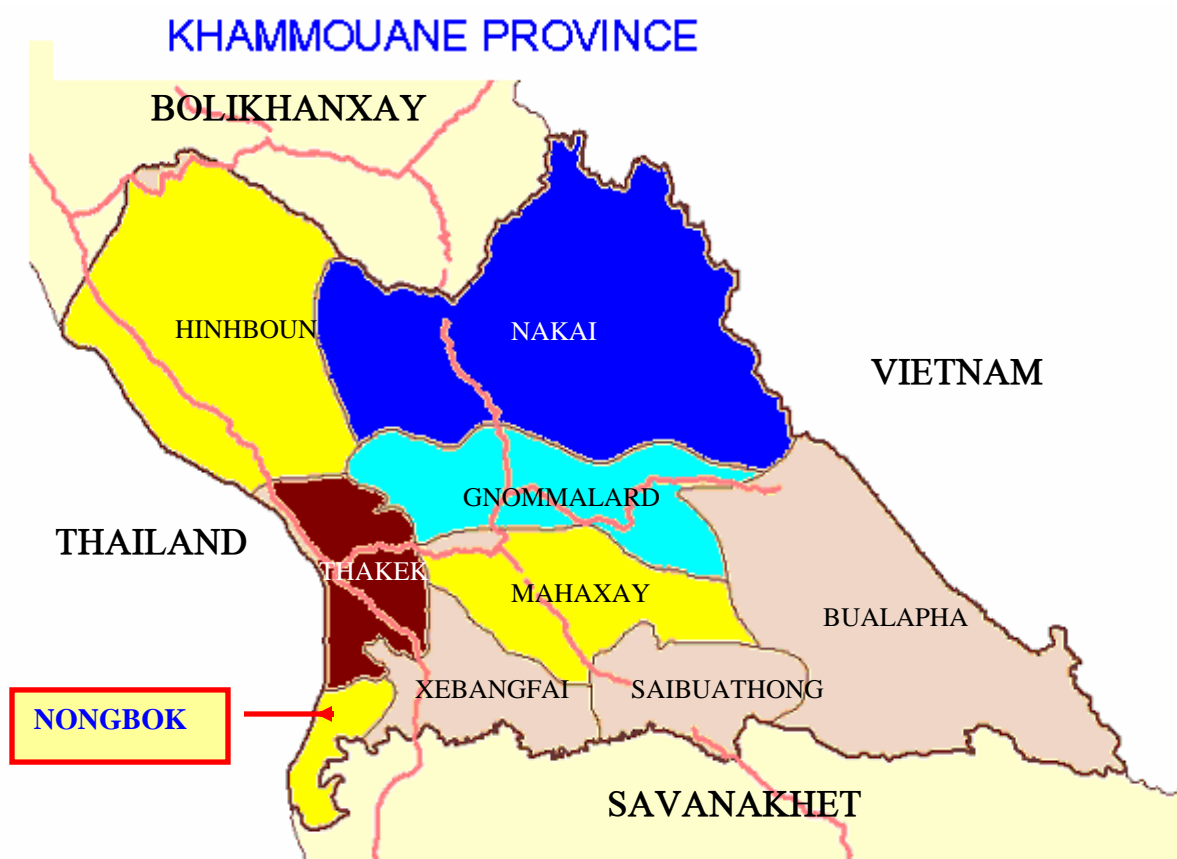
2.1.1 District location and geography

- Nongbok district is located in the southern part of Khammouan province. It shares the northern border with Thakhek district, the southern with Xayboury district and Savannakhet province separated by Xebangphay River, the east with Xebangphay district and the west with Thatphanom district of Nakorn Phanom province, Thailand. There is Mekong River as national border between the two countries.
- Nongbok district covers 313 square kilometers including agricultural area of 14,521.40 hectares (paddy field 12,807.40 ha and crop field 1,714 ha), forests 9,400 ha and wetland

2,726 ha. The temperature ranges from warm to nearly hot. There are two seasons; dry and rainy seasons. In high flood rainfall was about 1,857.3 mm, whereas the middle flood rainfall was 1,544.1 mm, and low flood rainfall was about 1,382.5 mm per year.

- The flooded area is mostly agricultural area (plantation and livestock). Cultivation area is mainly in- season rice and off-season rice, other are economic crops.
- For land use planning, the land was mostly registered to inform for taxation (58.33%). There are 30 villages having permanent land certificate.

2.1.2 Khammouane province map



2.1.3 Demography

- Nongbok district consists of 10 village clusters, 72 villages, 7,980 houses, 7,593 households, 41,103 populations, including 20,864 of female. The demography information is summarized in the **Table**.

Table: Demography in Nongbok district

No.	Name of village cluster	No. village	No. house	No. household	No. population		Remark
					Total	Female	
1	Nongbok	10	1,508	1,427	7,758	3,907	
2	Songmeuang	08	790	738	4,237	2,146	
3	Dongkasin	06	760	737	3,779	1,891	
4	Nongpham	07	611	567	3,235	1,657	
5	Nachampa	06	689	663	3,458	1,820	
6	Donekhiew	09	902	856	4,215	2,167	
7	Pakxe	08	676	703	3,692	1,857	
8	Navang	08	813	727	4,295	2,146	
9	Tantheung	05	682	607	3,245	1,636	
10	Xiengdy	05	549	568	3,189	1,637	
	Total	72	7,980	7,593	41,103	20,864	

2.2 Livelihood detail

- The population in Nongbok comprises of two tribes: Lao Loum, 97.22% of all villages and Lao Theung, 2.88% of the rest. Most of people are Buddhism, the rest of 2% are catholic.
- Occupation in the district is mainly agricultural production (plantation and livestock) or 95% of total population. Currently, the gross domestic production (GDP) is about US\$ 1,000 per capita per year including 98.45% of GDPF, the rest are from industry/handicraft, business and other services.

2.2 Basic infrastructure**2.3.1 Total road length and road type**

- Nongbok district has transportation network linked to most of the villages in the district in two seasons (rainy and dry season). There are 81 roads of totally 287.08 km. The roads which can be used in two seasons with good condition are 74 routes with total distance of 272.67 km, as detail shown in below Table.
- There are 5 bridges in the district; Houydeuth, Houylom, Houysayphay, Houyvay, Houybor and Houynongsai & Houybangkak Bridges. The district is going to construct 2 more bridges in the near future in Houyway (Baan Nampoo and Phoxay villages).

Table: Road in Nongbok district

No.	Name of road	Road Number	Length (km)	Remark
1	Provincial road (13 B)	01	29.50	
2	District road	04	50.25	
3	Municipality road	21	9.10	
4	Lateritic road	37	143.40	
5	Community road (constructed by community people)	18	54.83	07 roads can be used during dry season
	Total	81	287.08	

2.3.2 Irrigation

- Nongbok district has irrigation systems. There are 24 irrigation projects throughout the district which can provide water supplies into the field for more than 3,000 ha. Moreover, there is 1 canal (2,000 m length) to discharge water into Mekong River.

2.3.3 Social and cultural infrastructure

- The district has infrastructures which were taken cared by several Departments related to Social and Cultural aspects. The important infrastructures are listed in the below Table.

Table: Social and Cultural Infrastructure

No.	Item	Unit	Number	Remark
1	Primary school	school	48	
2	Lower secondary school	school	06	
3	Upper secondary school	school	04	
4	Temple	temple	63	
5	Hospital	hospital	01	
6	Primary health center	center	09	
7	Private Clinic	clinic	02	
No.	Item	Unit	Number	Remark
8	Artesian well	well	1,638	
9	Dig well	well	800	
10	Pure drinking water factory	factory	02	

3. Hazards, vulnerability and capacity analysis

3.1 Flood hazards

3.1.1 Causes and seasonality/duration of flood

A. Flood causes

- More than 80% of flood occurred in Nongbok district was caused by overflow from Xebangphay River in the rainy season. There are 7 vulnerable points prone to flood including Banepongkiew, Banenamphou, Banesorbor, Banesayphong, Banexamnady, Banesaduea and Banepphonesao Ear villages.
- The second cause of flood is stagnant water after the heavy rain with no channel or water gate to discharge the water out of the area or into Mekong River such as in Thongkalatha, Houylom, Houydeuth streams. Moreover, there was overflow of Mekong River into the areas, but this case has rarely occurred in the past years.

B. Seasonality/duration of flood

- Flood season period is between the end of July to August end and some years started from August to September.
- The flood would normally occur between 15 to 30 days.

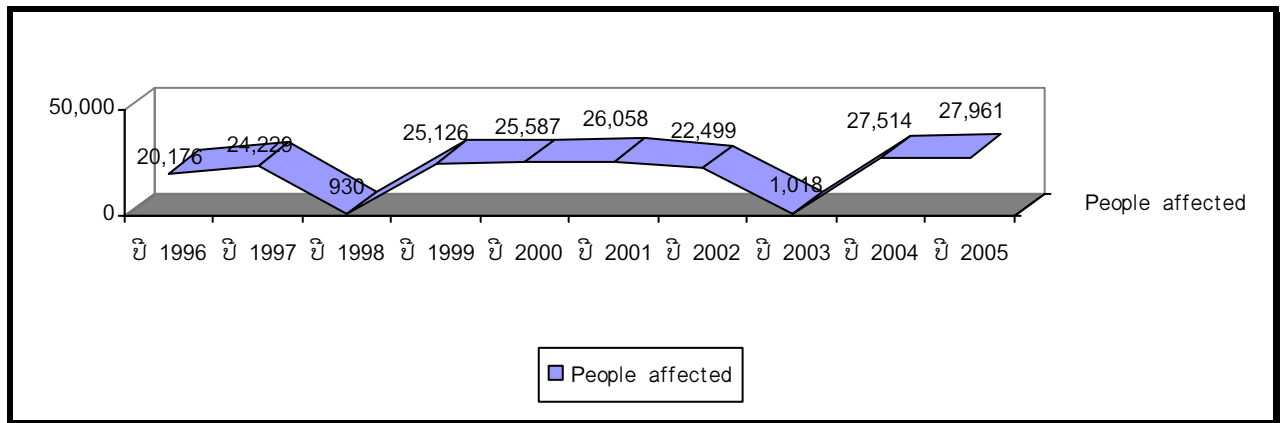
3.1.2 Volume/severity and flood

- Quantity and severity of flood were up to its effects to property (i.e. house, paddy field, crop field, livestock, etc) and public infrastructure (school, hospital, road, irrigation system, temple, etc). Flood damages during the past 10 years were summarized in the below Table.

A. Social and administration impacts

No.	Item	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
1	No. village affected	42	45	2	48	48	47	42	2	49	71
2	No. house affected	0	0	0	1	1	3	0	0	1	02
3	No. family affected	2,847	3,093	147	3,289	3,240	3,191	2,847	147	3,338	4,841
4	No. people affected	20,176	24,229	930	25,126	25,587	26,058	22,499	1,018	27,514	27,961

Figure: Social impact in 1996-2005 (people affected)



B. Impact on agriculture (In-season rice)

No.	Item	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
1	Total rice field (Ha)	10,274	10,275	10,350	10,457	10,525	10,525	10,525	10,525	10,525	10,536
2	Rice field flooded (Ha)	2,026	4,296	1,915	6,458	6,500	5,574	2,076	1,947	4,401	7,510
3	Rice field damaged (Ha)	1,171	2,929	49	4,402	4,431	3,800	1,200	50	3,000	6,574
4	Rice damaged (Ton)	3,584	9,079	159	13,691	13,382	14,250	4,644	157	9,090	22,220
5	Total loss value (x million kip)	6,571	16,645	291	25,101	24,533	26,125	8,514	288	16,665	40,737

Figure: Impact on In-Season Rice in 1996-2005 (total loss value)

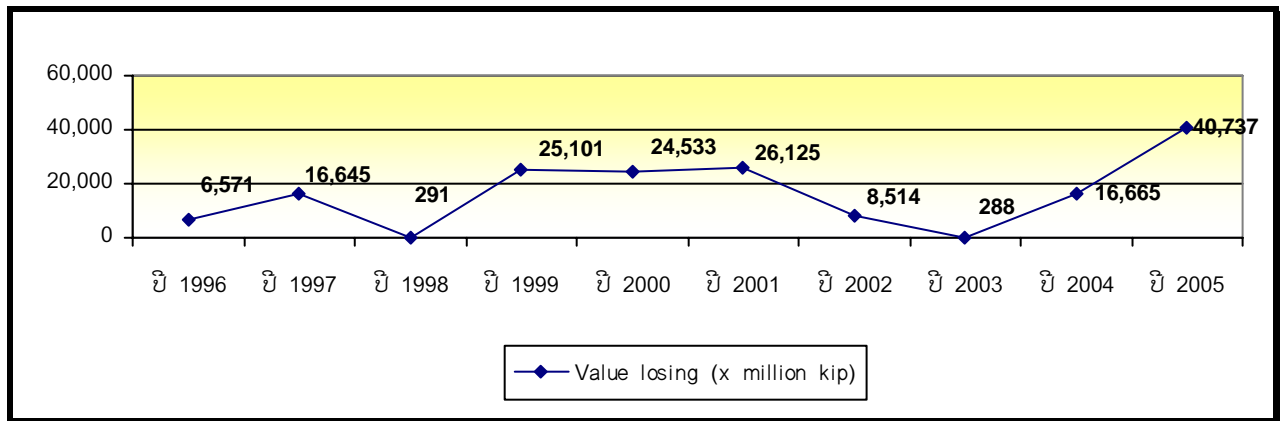


Table: Impact on irrigation

No.	Item	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	Total
1	Loss value (x million kip)	606.36	658.64	31.36	700.45	690.00	679.55	606.36	31.36	710.91	1,035	5,750

Figure: Irrigation impact in 1996-2005

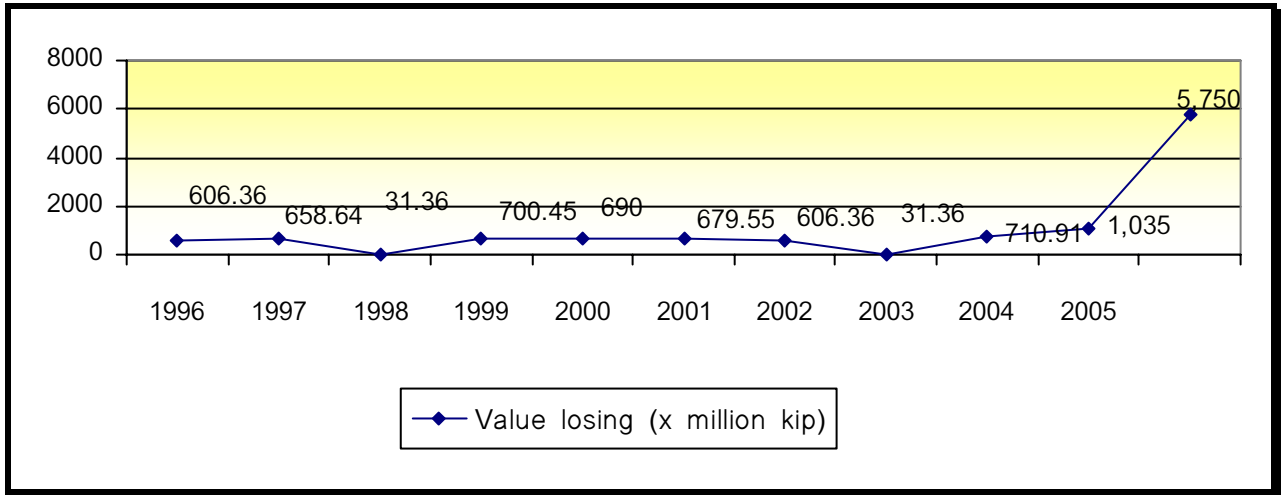
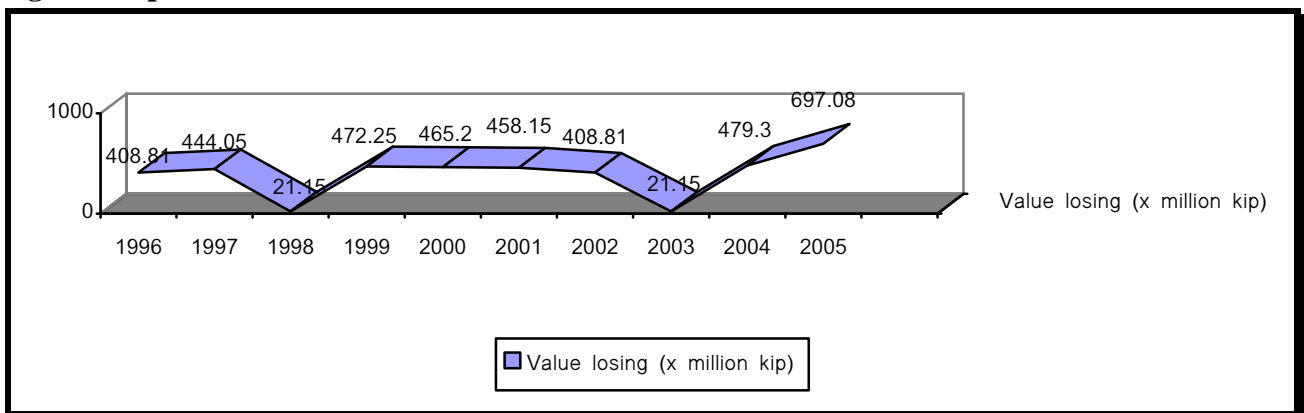


Table: Impact on Fishery/Livestock

No.	Item	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	Total
1	Loss value (x million kip)	408.81	444.05	21.15	472.25	465.20	458.15	408.81	21.15	479.30	697.08	3,876.67

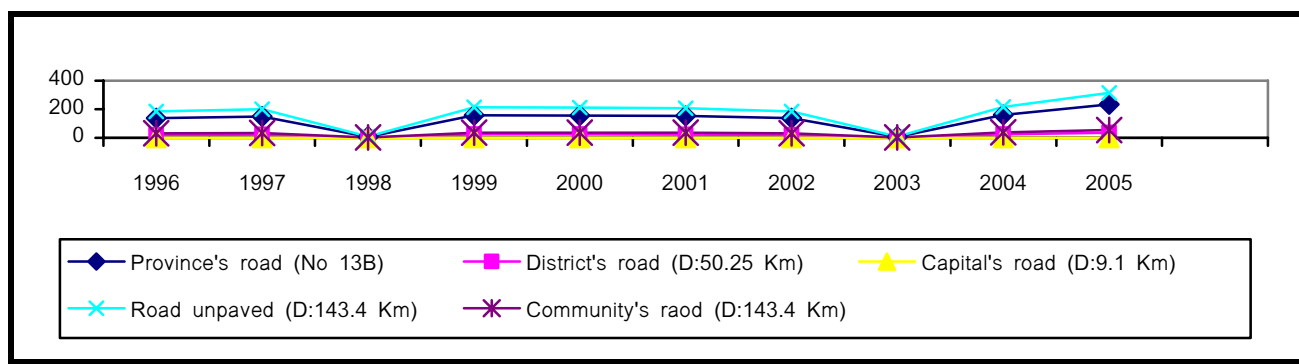
Figure: Impact on Livestock in 1996-2005



C. Impact on transportation system (Loss value x 1 million kip)

No.	Items	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	Total
1	Provincial road (No 13B)	136.80	148.59	7.08	158.03	155.67	153.31	136.80	7.08	160.38	233.50	1,297.24
2	District road (D:50.25 Km)	20.97	22.78	1.08	24.23	23.87	23.51	20.97	1.08	24.59	35.80	198.88
3	Municipal road (D:9.1 Km)	00	00	00	00	00	00	00	00	00	00	00
4	Unpaved road (D:143.4 Km)	184.78	200.71	9.56	213.45	210.27	207.08	184.78	9.56	216.64	315.40	1,752.23
5	Community road (D:143.4 Km)	31.80	34.54	1.64	36.74	36.19	35.64	31.80	1.64	37.28	54.28	301.55
	Total	374.353	406.62	19.36	432.45	26.00	19.54	374.35	19.36	438.89	638.98	3,549.90

Figure: Impact on transportation system in 1996-2005

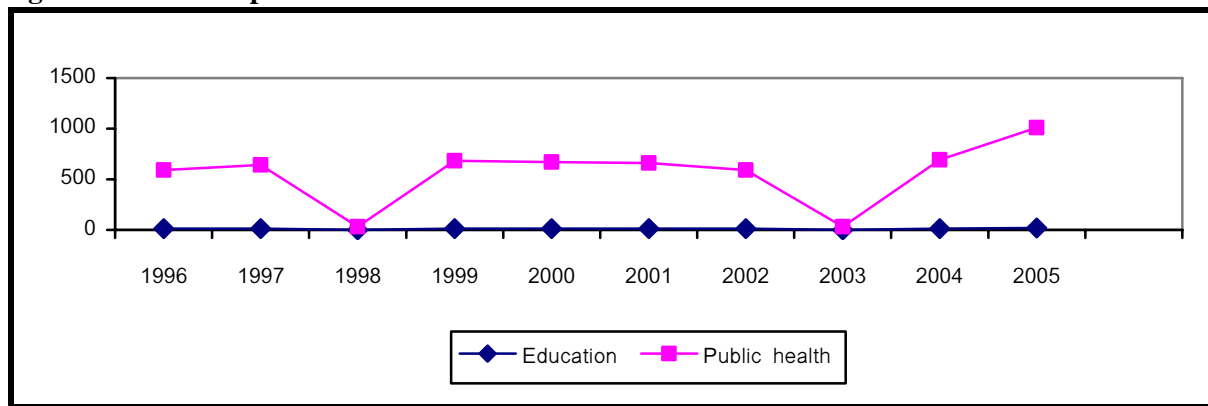


D. Cultural impact (Loss value x 1 million kip)

No.	Items	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	Total
1	Education	11.66	12.66	0.60	13.47	13.27	13.07	11.66	0.60	13.67	19.90	110.56
2	Public health	590.78	641.71	30.56	682.45	672.27	662.08	590.78	30.56	692.64	1,008.40	5,602.23
	Total	02.44	54.37	1.16	95.92	685.54	675.15	602.44	31.16	706.31	1,028.30	5,712.79

Remark: Except impacts on education and public health, still, there are other impacts such as damage of the temples and walls (Sorbor, Phak e tou and Nonglom temples) in 2005.

Figure: Cultural impact in 1996-2005



3.1.3 Summary of damage & loss (10 years impact of flood, 1996-2005)

Total value:	184,359,360,000 kip
• Agriculture	175,096,670,000
- Rice field	165,470,000,000
- Irrigation	5,750,000,000
- Livestock	3,876,670,000
• Communication	3,549,900,000
• Social/cultural	5,712,790,000
- Education	110,560,000
- Public health	5,602,230,000

3.2 Drought vulnerability

- Aside from flood, drought is another major natural hazard, which affected traditional livelihood of district people. Flood in vulnerable areas can be solved by improvement of irrigation system. In the same way, the vulnerable areas with no irrigation system are prone to flood and drought, which cause damage to crops.
- Drought normally occurs yearly in 2 periods; before and after flood, from June to July, and the end of August after flood.

3.3 Flood risk in each sector

3.3.1 Social and Administration

- Flood risk affected villages, households, and people living in the risk areas as shown in the previous Tables and Figures. The vulnerable villages are presented in following Tables.

A. Villages at risk, 1st priority

No.	Name of village	No. house	No. household	Population	
				Total	Female
1	Sokbor	93	113	642	319
2	Namphou	76	72	484	238
3	Nonglom	174	173	830	424
4	Dongsa ngam	69	70	383	198
5	Hatsayphong	72	70	345	169
6	Phak e tou	71	68	381	208
7	Natai	76	71	473	249
8	Xamnady	33	33	190	102
9	Sadeua nuea	167	153	901	445
10	Saduea tai	102	100	733	363
11	Phonsao eer	74	67	563	271
12	Thamouang	46	41	220	107
13	Danpakdek	69	74	380	183
14	Donpadek	70	45	237	117
15	Dongkasin	81	77	464	232
16	Hatxiengdy	240	246	1,310	663
	Total	1,513	1,473	8,536	4,288

Remark: Village No. 1, 2, 3, 5, and 13 were identified as target areas for evacuating and constructing the temporary shelters in the safety areas.

B. Villages at risk, 2nd priority

No.	Name of village	No. house	No. family	Population	
				Total	Female
1	Donkhiewkang	99	101	500	255
2	Donkhiewtai	77	68	321	169
3	Mouangkhai	94	93	419	207
4	Nongsaphangthong	80	75	393	195
5	Navangnoi	81	70	365	187
6	Navangthong	102	81	484	242
7	Navang Nuea	154	141	852	414
8	Navang tai	103	82	431	214
9	Pakdueth	23	61	296	159
10	Laona	127	129	658	366
11	Pongkiew	123	105	554	268
12	Beuangsantha	131	127	652	351
13	Donsavang	143	138	617	316
14	Donkhiew neua	106	104	526	269
15	Namanpa	213	184	997	498
16	Nongpalat	73	67	368	185
17	Xiengvangtha	88	78	425	214
18	Xiengvang neua	66	66	305	152
	Total	1,883	1,770	9,163	4,661

3.3.2 Agriculture

- More than 10,000 ha of rice field and about 1,000 ha of crop field areas were normally flooded. Almost 70% of rice field were severely damaged in 2005.
- Livestock damaged especially pig farms, cattle, etc.
- More than 600 fish ponds would be damaged by flood.

3.3.3 Transportation

- Transportation infrastructure damaged included 80 roads damaged, some bridges, underground water pipes.

3.3.4 Social/culture

- Schools, hospitals and temples were damaged.

3.4 Resources and Capacities

3.4.1 List of material/equipment for evacuating to safety areas

No.	Items	Unit	Number			Remark
			Demand	Existing	Need	
1	Tent	set	25	00	25	
2	Kitchen equipment	set	50	00	50	
3	Generator & fuel	set	05	00	05	
4	Food / supplementary food	set	100	00	100	

3.4.2 List of transportation facilities

No.	Items	Unit	Number			Remark
			Demand	Existing	Need	
1	Wooden boat with engine		00	2,540	00	
2	Landing craft boat with engine		10	00	10	
3	Truck		-	49	-	Private
4	Bus		-	47	-	Private
5	Tractor		-	2,689	-	people
6	Pick up car		5	4	1	4 district cars
7	Life preserver		15	0	15	rope, jacket, etc

3.4.3 List of communication equipment

No.	Items	Unit	Number			Remark
			Demand	Existing	Need	
1	Telephone/Fax		1	00	1	
2	Mobile		23	18	5	Net-covered
3	Walky talky		21	00	21	
4	Megaphone		15	00	15	Moving

3.4.4 Flood control equipment

No.	Items	Unit	Number			Remark
			Demand	Existing	Need	
1	Flood marker	point	00	16	00	
2	Sand bag	bag	150,000	00	150,000	
3	Water pump		00	00	00	
4	Flood discharge canal	point	02	01	01	

3.4.5 Medical facilities

No.	Items	Unit	Number			Remark
			Demand	Existing	Need	
1	Hospital/health care center	place	01	10	01	
2	Doctor/specialist	person	05	00	05	
3	Ambulance		02	00	02	
4	Medical equipment	x million kip	50	00	50	
5	Medicine	x million kip	20	00	20	

3.4.6 Human resources

No.	Items	Unit	Number			Remark
			Demand	Existing	More need	
1	Guard team	team	05	00	05	
2	Search & rescue team	team	05	00	05	
3	Police/armed force	group	01	01	00	
4	Medical mobile team	team	05	05	00	
5	Red cross volunteer	group	01	00	01	
6	Volunteer	group	16	16	00	

4. Institutional mechanism for disaster management

4.1 District Disaster Management Committee (DDMC)

- District disaster management committee (DDMC) and its secretariat of DDMC were appointed by District governor, the decree No. 091/ of Government on March 28, 2007. The members of the committee are from the head of government offices and NGOs as follows:

A. DDMC members

1.	Mr. Sinhthason Mahakhoth	District Deputy Governor	Chairman
2.	Mr. Koeintha Pakathong	Head, Labor & Social Welfare Office	Vice-chairman
3.	Mr. Liphone Souvanhdala	Head, Agriculture & Forestry Extension	Vice-chairman
4.	Mr. Phatkhamthoune Sosingthong	Head, Police Security Office	Member
5.	Mr. Bounelom Mekvixiene	Head, Lao Front for Nation construction	Member
6.	Mr. Saleumsak Keochanthala	Head, District Administration Bureau	Member
7.	Mr. Khamla Thongbounema	Head, District Defense Office	Member
8.	Mr. Sengvilay Mounthany	Head, Finance Office	Member
9.	Mr. Bounthong Khounnavong	Head, Education Office	Member
10.	Mr. Intong Hanpaseuth	Head, Public Health Office	Member
11.	Mr. Somsalao Mounleuadykeo	Head, Public Work & construction Office	Member
12.	Mrs. Dokpha Phetvihan	Lao Women Union	Member
13.	Mr. Keosisomphone Vongsana	Head, Industry & trading Office	Member
14.	Mr. Khen Xaiyapheth	Head, Information and Culture Office	Member
15.	Mr. Kaninh Inthala	Inspector Unit	Member
16.	Mr. Komkaseth Phengsadalath	Lao Youth Union	Member
17.	Mr. Savy Mounkhamkhay	Youth Labor Union	Member
18.	Mr. Sengsouliya Thavone	Head, Investment and Planning Office	Member

B. DDMC Secretariat members

1.	Mr. Saluemsak Keochanhthala	Head, District Administration Bureau	Head
2.	Mr. Khamlene Phommavong	Deputy, Agriculture & Forestry Office	Vice Head
3.	Mr. Inthava	Deputy, Labor & Social Welfare Office	Member
4.	Mr. Bounyeung Xaypanhya	Deputy, Police Security Office	Member
5.	Mr. Soulat Chanhthavong	Deputy, District Defense Office	Member
6.	Mr. Kaisone	Deputy, Lao Youth Union	Member
7.	Mrs. Souvanhnaly	Deputy, Lao Women Union	Member
8.	Mr. Outhonthavinh Volachak	Deputy, Education	Member
9.	Mr. Khampanh	Technician, Public Health Office	Member
10.	Mr. Somchai Phanichanh	District Administrative Officer	Member
11.	Mr. Chanhthakhat	District Reporter	Member

4.2 Roles & responsibilities of DDMC and its Secretariat

4.2.1 Roles & responsibilities of DDMC

Before Disaster	Disaster period	After Disaster
<ul style="list-style-type: none"> - Develop action plan for prevention, response, recovery and rehabilitation - Organize annual meeting to summarize and present plan for next year - Hand over responsibility to concerned parties 	<ul style="list-style-type: none"> - Follow-up and lead the action teams in the field - Visit affected villages and shelters to encourage community people - Report to PDMC sporadically (if needed??) 	<ul style="list-style-type: none"> - Follow-up, and assess flood impact - Visit to village for relief and recover post flood trauma - Conduct meeting for summarize teams' action - Report flood impacts to PDMC and concerned parties

4.2.2 Roles & responsibilities of DDMC Secretariat

Before Disaster	Disaster period	After Disaster
<ul style="list-style-type: none"> - Summarize impacts from previous floods, analyze and draft rules & regulation (summary, plan, decree, District Governors' demand, etc) for DDMC members - Prepare important necessity for annual meeting of DDMC - Coordinate among district and provincial offices 	<ul style="list-style-type: none"> - Join with DDMC members to follow-up, survey, update flood impact, monitor flood situation closely and advise people on how to response to flood - Join with DDMC to visit the affected villages and shelters to provide relief - Prepare report for the DDMC and report to PDMC and their commanders sporadically 	<ul style="list-style-type: none"> - Join with DDMC to monitor and assess flood situation at site - Draft summary report on impact and loss assessment, relief and rehabilitation taken and plan for next year action - Join with DDMC in the village to provide relief and recover post flood trauma - Prepare meeting for concluding action's achievement for DDMC and its action teams - Report flood impact to PDMC, DDMC and all concerned parties

4.2.3 Roles & responsibilities of each office

A. District Agriculture & Forestry Extension Service (DAFES)

Before Disaster	Disaster period	After Disaster
<ul style="list-style-type: none"> - Prepare data of disaster risk areas, particularly statistic information of agricultural areas prone to flood (cultivation, livestock and irrigation) - Consolidate all information 	<ul style="list-style-type: none"> - Monitor flood situation closely and advise emergency response process - Visit field affected and provide support for planting and feeding animal - Follow-up impact on 	<ul style="list-style-type: none"> - Assess flood impact on agriculture - Lead community people to conduct recovery and rehabilitation activities (cultivation, animal feeding, fish pond and irrigation)

<p>and report to DDMC Secretariat</p> <ul style="list-style-type: none"> - Update meteorological data and coordinate with DDMC Secretariat for information announcement - Prepare suitable area for shelters - Prepare crop seed, animal breeding, fertilizer, pesticide, veterinary medicine and equipment 	<p>irrigation systems and advise community people to keep maintenance of their boats, water pumps, and to improve irrigation system</p> <ul style="list-style-type: none"> - Announce weather forecast and warning periodically 	<p>system repair)</p> <ul style="list-style-type: none"> - Evaluate own implementation achievement - Report flood impact and action's achievement to PDMC, DDMC and concerned parties
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B. District Labor and Social Welfare Office (LSW)

Before Disaster	Disaster period	After Disaster
<ul style="list-style-type: none"> - Coordinate with DDMC Secretariat to prepare support equipment, necessities and action team for flood fighting - Prepare safe area to build shelters - Cooperate with other NGOs and INGOs - Encourage all agencies for flood fighting 	<ul style="list-style-type: none"> - Encourage Youth Union and community people to join DDMC team on flood response - Coordinate with concerned agencies to facilitate vehicles and necessary equipment - Accompany with action teams and villagers to conduct flood preparedness response as planned (transfer poverties, elders, children and disabilities and injured persons to safe place) 	<ul style="list-style-type: none"> - Associate with concerned agencies on impact and loss assessment and prepare summary report - Associate with concerned agencies to carry out recovery and rehabilitation activities - Cooperate with concerned agencies for financial support and donation of equipment, food, drinking water and necessities for victims

C. District Public Health Office

Before Disaster	Disaster period	After Disaster
<ul style="list-style-type: none"> - Update seasonal disease outbreak situation and information - Ready for emergency response and monitoring disease out break and accident - Prepare safe area for shelters - Prepare emergency kits, medical equipment and medicine 	<ul style="list-style-type: none"> - Visit affected area for monitoring disaster situation and outbreak - Survey and provide health care and medical service for flood disease control 	<ul style="list-style-type: none"> - Assess impact to public health sector - Assess disease out break after flood and prepare summary report - Visit affected area to lead and encourage people on sanitation, hygiene and disease out break protection

D. Lao Women Union (LWU), Lao Youth Union (LYU) and Lao Front for Nation Construction

Before Disaster	Disaster period	After Disaster
<ul style="list-style-type: none"> - Coordinate with concerned agencies to encourage people including youth and women for disaster response - LWU as a chair for emergency response and provide knowledge and public awareness raising to community members closely 	<ul style="list-style-type: none"> - Encourage man power of Youth Union and community people to carry out flood response activities with PDMC and DDMC teams - Cooperate with other concerned agencies in the villages and district on support vehicles, material/equipments and necessities - Cooperate with action teams and villagers to conduct flood response activities as plan (transfer poverties, elders, children and disabilities and injured persons to safe place) 	<ul style="list-style-type: none"> - Cooperate with all concerned parties on impact and loss assessment and prepare summary report - Cooperate with concerned parties to carry out relief and rehabilitation activities - Cooperate with all concerned agencies for financial support and donation of equipment, food, drinking water and necessities for victims - LWU should lead in conducting recovery activities after flood such as promoting local products production

4.3 District Disaster Management Team and its responsibilities

- District Disaster Management Team was appointed by the Deputy Governor, Chairman of the DDMC. It includes 4 major teams, each of which has 5 units:
 1. Information management/damage and loss assessment team
 2. Search & rescue team
 3. Public health/emergency health care team
 4. Relief coordination team
- The District Disaster Management Team members were selected by DDMC members and appointed by the chairman, for example, the public health/emergency health care team members were selected by DDMC member from Public Health Office.

4.4 District Flood Control Office

4.4.1 Definition of District Flood Control Office

- The District Flood Control Office is an implementation management office in the district to carry out prevention, response and rehabilitation actions for people affected by flood. Human resource, vehicle, and necessary material/equipment were needed for its operation.

4.4.2 District Flood Control Office members

1. Mr. Keointha Pakathong Head of District LSW
2. Mr. Saluemsak Keochanthala Head of District Administration
3. Mr. Liphon Souvanhdala Head of DAFES
4. Mr. Somchai Phanichanh Head of District Management Office

- | | |
|--------------------------------|------------------------------------|
| 5. Mr. Khamsen Phommavong | Deputy of DAFES |
| 6. Mr. Inthava | Deputy of LSW Administration |
| 7. Mr. Bounyueng Saypanhya | Deputy of Police Security Office |
| 8. Mr. Soulat Chanhthavong | Deputy of Defense Office |
| 9. Mr. Kaison | LYU |
| 10. Mrs. Souvannaly Sonsaksith | LWU |
| 11. Mr. Outhonthasinh Vorachak | Deputy of Education Office |
| 12. Mr. Khamphanh | Technician of Public Health Office |
| 13. Mr. Chanthakhath | Reporter |

4.4.3 List of necessary material/equipments

- These necessary material/equipments are property of district.

No.	Items	Unit	Number			Remark
			Demand	Existing	Need	
1	Office (8 m x 12 m)	Office	01	00	01	
2	Pick-up car		01	00	01	Pick up 4x4
3	Ambulance		02	00	02	
4	Motorcycle		05	00	05	
5	Computer-Printer		02	00	02	
6	Telephone/Fax		01	00	01	
7	Mobile phone		23	18	05	Net-covered
8	Walky talky		21	00	21	
9	Megaphone		15	00	15	
10	VDO player		01	00	01	
11	LCD projector		01	00	01	
12	Digital camera		01	00	01	
13	VDO camera		01	00	01	

5. Flood preparedness measures

5.1 Preparedness activities

5.1.1 Public awareness raising

- The public awareness raising is an important and necessary process to be done in vulnerable or high risk areas. A major activity on public awareness raising is communication among DDMC, concerned parties as well as community members living in the area to make them understand about disaster and change their wrong behavior for disaster prevention, response, and rehabilitation to reduce loss of human life and property after flood.
- For FPP implementation achievement, the DDMC and action teams should properly understand their roles & responsibilities and on disaster management to communicate to people in the risk area. Therefore, the responsible persons should have good knowledge/capacity (be trained and go for study tour) and have support documents and communication equipment such as rule/regulation of country, necessary information, material/equipment (micro phone, LCD projector, printer, posters, etc).

5.1.2 Flood forecast & early warning system

- Flood forecast and early warning system are very important for flood preparedness planning and response such as evacuation planning of community people to the safe places and facilitate them in emergency response process
- Flood forecast and early warning system related to various factors including villagers' experience from the previous flood, forming of monitoring system and team, volunteers of each point and information derived from various sources (provincial, countries, regional and global information). Moreover, there are many necessary material and equipment for the monitoring system such as flood marker, communication system equipment, flood forecasting reports, etc.

5.1.3 Activity planning

- Activity planning for flood prevention, response and recovery is application of disaster management strategy in planning detailed activities to reduce lost of life and property of people in the affected areas. The planned activities would link to DDMC and its Secretariat and action team (information management/damage and loss assessment team, search & rescue team, public health/emergency health care team, and relief coordination team)'s structures.

6. Response operation

6.1 Preparedness for response

- Once received early warning signal, DDMC and responsible agencies would be ready for emergency response; setting up shelters in the safe areas prepared by providing tents, necessary material and equipment (kitchen wares, food, drinking water, temporary toilet, etc), vehicles (boats, cars, man power, etc), communication system, medical team with sufficient medical equipment and medicine and the most important thing is man power in the community and working team to constructing water canal and 24 hours life guard.

6.2 Response operation

- Once highest dangerous level signal of early warning is announced, all teams and concerned parties as well as people in the flood area would be ready to carry out emergency response by following their own roles and responsibilities.
- The information management/damage and loss assessment team needs to pay more attention in follow-up disaster situation collecting/update data and report the situation continuously, in the meantime, to coordinate with other teams for more support if needed;
- The search & rescue team would be ready to start its operation (search & rescue and transferring people, animal and property to safe places);
- The public health/emergency health care team would provide public health and sanitation support and take care of victims and injured people;
- The relief coordination team would take care of safety shelters, provide necessary support for emergency relief and public awareness raising for flood recovery through training, advising crop planting/ animal feeding methods and repair of house and infrastructure (irrigation system, road, school, hospital, temple, etc) to return to good condition.

7. Recovery and rehabilitation

7.1 Recovery and rehabilitation activities

- After flood, the DDMC, its secretariat and concerned parties need to follow their roles and responsibilities as stated in the plan. Data collection of flood impacts, summary of damage and loss assessment as well as recovery and rehabilitation activities would be implemented.
- For efficient implementation achievement, various necessary conditions could be anticipated based on the previous disaster impact. The last flood in Nongbok in 2005 caused severe impact to the district, especially to agriculture followed by social and cultural impacts (education, public health, temples) and to infrastructure respectively. Detail of flood impact is shown in the below Table.

Table: Flood impact in 2005

No.	Items	Value	Remark
1	Agricultural affected	42,469,080,000	
	Rainy season rice field	40,737,000,000	
	Irrigation	1,035,000,000	
	Livestock	697,080,000	
2	Social and Cultural	1,028,300,000	
	Education	19,900,000	
	Public health	1,008,400,000	
3	Infrastructure (road)	638,980,000	
	Total	44,136,360,000	

8. Mitigation measure

8.1 Structural mitigation

8.1.1 Construction of flood embankment and water channel

- A. Construction of rural road is related to embankment and water channel construction for reducing flood impact in each year, dividing into 2 parts:**
1. Road construction part which can be adapted to be embankment;
 2. Construction and repair of water gates.

Table: Road construction related to embankment

No.	From/To	Length, Km	Situation	Remark
1	Namphou-Sorbor	9.00	No road and embankment	Needed
2	Sorbor-Tanteung	14.00	Road available, no embankment	Needed
3	Tanteung-Xamnady	3.00	No road and embankment	Needed
4	Xamnady-Sadeua	9.00	Road available, no embankment	Needed
5	Sadeua-Pakxe	12.00	No road and embankment	Needed
	Total	47.00		

(These projects are on feasibility study process for construction by the Government).

Table: On-going construction and repair projects

No.	Name of streams with water gate/ need to be repaired	No.	Name of stream without water gate/ need construction
1	Houy poun	1	Houy vay
2	Houy khey	2	Houy honglouang
3	Houy low	3	Houy pakhao
4	Houy memang	4	Houy hongphakbong
5	Houy sadeua	5	Houy hpngkai
6	Houy bangkak	6	Houy hongphosida (Thamouang village)
7	Houy sorbor	7	Houy pakxe
8	Houy Boueng Samnoi	8	Houy deuthnoi
9	Houy koutchap	9	Houy deuth ngai
		10	Houy lom
		11	Houy hongboungdeath
		12	Houy honghongbom
		13	Houy Xiengvang
		14	Houy deua

B. Water channel excavation discharged to Mekong River

- Excavation of water channel from Nongsaphang - Houylom - Nong Eine - Nongpa Eurn to Mekong River (Houylom and Houydeut estuaries).
- Improvement of the water channel at Thongkalatha for better discharging.

8.2 Non-structural preparedness

Enhance the knowledge and better understanding to community and concerned parties through following activities:

- Public awareness raising to community members, post disasters trauma recovery and training on recovery and rehabilitation;
- Form the social organization in the affected areas, using DDMC as a model, for implementing activities, establishing village revolving funds and taking part in information broadcasting;
- Integrating disaster risk reduction into school curriculum;
- Land use planning;
- Develop flood vulnerability and risk maps;
- Develop and improve the early warning system.

9. Financial allocation and other resources needs

- In every stage of flood (preparedness, response, recovery and rehabilitation), it is very important and necessary for financial allocation, seeking for funding sources and resources inventory, which would be under responsibility of concerned members of DDMC and its teams. Detailed budget of district priority activities are provided in following Table.

Table: Budget plan 2007-2008 for flood in Nongbok district

No.	Activity	Target area	Responsible agency	Time	Budget (USD)	Source
1	Appointment DDMC and its Secretariat	District	District	2007	150	-
2	Construction DDMC office with necessary equipment	District	PSWD/District	2008	76,200	-
3	Set up medical team and equipment (including medical center)	Districts	PHD	2007-08	287,000	-
4	Set up search & rescue team	Districts	DPO & DSO	2007-08	60,750	-
5	Data collection and planning	Village	PSWD/PAFD	2007-08	2,500	-
6	Project development to get financial support on FPP	16 Risk Villages	PSWD/PAFD	2007-08	1,500	-
7	DDMC's workshop to enhance disaster knowledge	District	DDMC	2007-08	1,500	-
8	Meeting for conclusion/evaluation, lesson revision and planning	District	DDMC	3 time 07-08	2,000	-
9	Enhance capacity building of DDMC and its team <ul style="list-style-type: none"> • Training of DDMC and its Secretariat • Training of medical and search & rescue teams • Study tour for DDMC members and its teams (domestic or abroad) 	District District Domestic/Oversea	NDMC/PDMC NDMC/PDMC NDMC/PDMC	2007-08 2007-08 2007-08	3,000 4,000 15,000	-
10	Integrating of disaster curriculum into school	48 Primary School	PED	2007-08	48,000	-
11	Set up information network	Districts	PDMC/Cultural	2007-08	6,000	-
12	Set up system for environmental monitoring, impact assessment and emergency preparedness and response	Districts	PSWD	2007-08	20,000	-
13	Public awareness raising to community for self resilience	Target Villages	PDMC/DDMC	Aug -07	10,000	-
14	Establish village development funds	16 Risk Villages	PSWD/PAFD	2007-08	32,000	-
15	Establish LWU development funds	16 Risk Villages	PSWD/PAFD	2007-08	16,000	-
16	Preparing necessary conditions needed for disaster response (human resource, equipment in shelters)	Districts	PDMC/DDMC	2007-08	65,000	-
17	Disaster response (Prevention/Relief)	16 Risk Villages	PDMC/DDMC	2007-08	135,000	-
18	Surveying/ impact assessment/ recovery and rehabilitation planning	Villages/District	PDMC/DDMC	2007-08	2,000	-
19	Provide relief and recovery support	16 Risk Villages	PDMC/DDMC	2007-08	250,000	-
20	Study and research on prevention measures	District	PDMC/DDMC	2007-08	5,000	-
	Total				1,042,600	

- Financial allocation and resources needs (vehicle, material/equipment, etc) depending on DDMC structure and its teams based on follow-up, monitoring/evaluation of implementation activities in each period. The progress report should be prepared regularly.

10. Annexure

10.1 List of resources

- List of material/equipment, its availability and manpower are mentioned in 3.4 and 4.

10.2 List of Infrastructure

- List of infrastructure is presented in 3.4 and 4.

10.3 Important contact numbers

No.	Name	Position	Contact number
1	Mr. Sinthasone Mahakhoth	DDMC Chairman	020 575 4513
2	Mr. Keointha Pakathong	LSW/ Vice Chairman	020 585 1414
3	Mr. Liphone Souvanhdala	DAFES /Vice Chairman	020 215 7507
4	Mr. Saleumsak Keochanhthala	District admin/ member	020 2329 203
5	Mr. Khamla Thongbounma	Army/ member	020 232 7826
6	Mr. Khamthoun Sosingtho	Police/ member	020 565 1277
7	Mr. Bounlom Mekvixien	Front of Nation construction/ member	020 232 9158
8	Mrs. Dokfa Phethvihan	LWU/ member	020 5858295
9	Mr. Komkaseth Phengsadath	LYU/ member	020 565 1423
10	Mr. Savy Phounkhamkhay	Labor Youth/ member	051 27 0145
11	Mr. Sengvilay Mounthany	Finance/ member	020 575 1044
12	Mr. Keosisomphon Vongsana	Industry-Trading/ member	020 585 5270
13	Mr. Sonsalao Mounleuadikeo	Public work-transportation/ member	020 575 5854
14	Mr. Bounthong Khounnavong	Education/ member	020 565 1835
15	Mr. Intong Hanpaseuth	Public health/ member	020 565 6239
16	Mr. Khen Xayapheth	Information-culture/ member	020 225 6947
17	Mr. Kaninh Inthala	State inspection/ member	020 575 6030
18	Mr. Sengsouliya Thavone	Investment-planning/ member	051 270 104

10.4 Map

A. Map of safety shelters (safe area/camp)

The map shows Nongbok area, flood risk area, safe area, DDMC office and some related information.

Table: 5 years work plan (2006-2010) of Khammouane province

Activity	Location	Responsible by	Time	Budget (Million Kip)
PDMC, DDMC workshop to enhance Disaster knowledge	province 9 District	PDMC	2006-2010	90.00
Form VDMC and training	9 District 50 have risk	PDMC DDMC	2006-2010	60.00
Affected collection and Preparedness plan	9 District	PDMC DDMC	2006-2010	200.00
Develop environmental and affected assessment system	9 District 50 villages	LSW, Agriculture and Forestry Office	2006-2010	100.00
Develop Information net work	9 District 50 villages	PDMC Cultural	2006-2010	150.00
Prepare/arrange and purchas Necessary material/equipment	9 District Province	PDMC/ DDMC	2006-2010	250.00
Public awareness about disaster knowledge and preparedness	9 District	Cultural PDMC/ DDMC	2006-2010	50.00
Develop public health and security teams	9 District, Province	Health Office	2006-2010	100.00
Form research team for moving the victim/affected people	9 District	Lao Red Cross, police, Armed Forces	2006-2010	70.00
Look for and arrange the budget to support affected people	9 District Province	Finance Office	2006-2010	90.00
Take disaster curriculum into school	9 District 100 places	Education Office	2006-2010	100.00
Train the vulneable group	9 District 150 villages	PDMC/ DDMC	2006-2010	50.00
Relief and rehabilitee	Flood Areas 9 District	Cultural PDMC/ DDMC	2006-2010	350.00
Workshop trans border disaster with other provinces	KM Province 2 time/year	PDMC	2006-2010	50.00
Construction the food store, Material/equipment, Look for setting safety area (camp)	Province	LSW	2006-2010	1,000.00
Village Development Funds	9 District	Women Union, Agriculture Office	2006-2010	500.00
Total				3,210.00

Table: Annual work plan (2007-2008) of Khammouane province

Activity	Location	Responsible by	Time	Budget (Million Kip)
PDMC, DDMC workshop to enhance Disaster knowledge	Province 3 District	PDMC	2007-2008	10.00
Form VDMC and training	4 District 25 villages	DDMC	2007-2008	6.00
Develop environmental and affected assessment system	3 District 10 villages	LSW, Agriculture and Forestry Office	2007-2008	20.00
Public awareness about disaster knowledge and preparedness	3 District	Cultural PDMC/ DDMC	2007-2008	15.00
Affected collection and Preparedness plan	3 districts	PDMC/ DDMC	2007-2008	50.00
Develop Information net work	3 District 5 villages	PDMC Cultural	2007-2008	30.00
Develop public health and security teams	3 District , Province	Health Office	2007-2008	20.00
Form research team for moving the victim/affected people	3 District	Lao Red Cross, Police, Armed Forces	2007-2008	10.00
Take disaster curriculum into school	3 District 20 places	Education Office	2007-2008	40.00
Total				210.00