

ເອກະສານຊ້ອນທ້າຍ



CONSTRUCTION TIME SCHEDULE  
 DECENTRALIZED WASTEWATER TREATMENT SYSTEM (DEWATS) PILOT PROJECT  
 CBS THONGKHAMVANG VILLAGE  
 BAN THONGKHAMVANG, CHANTHABOULY DISTRICT, VIENTIANE CAPITAL, LAO PDR

ລຸ້ນ No	ວິເຄາະການ Description	ສາມັນ ກຸມກ 08/07/2020							ສາມັນ ກຸມກ 08/10/2020							ສາມັນ ກຸມກ 12/11/2020																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
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Notes: The work will be started on 1 September 2020 and should be finished on 15 November 2020.  
 Construction will be conducted on 1 December 2020, one month after wastewater treatment be operational.  
 Construction inspection will be conducted by the supervisor every Saturday. The latest construction inspection conducted on 15 November 2020.  
 Weekly report must be submitted by the supervisor every Monday and after it to project manager. The last progress report will be provided on 10 November 2020.  
 Weekend (Sunday)

ເອກະສານຊ້ອນທ້າຍ 1 ແຜນງານການກໍ່ສ້າງ CBS ຢູ່ບ້ານ ທົ່ງຂັນຄຳ



**CONSTRUCTION TIME SCHEDULE**  
**DECENTRALIZED WASTEWATER TREATMENT SYSTEM (DEWATS) PILOT PROJECT**  
**CBS THONGKHANHAM VILLAGE**  
**BAN THONGKHANHAM, CHANTHABOULY DISTRICT, VIENTIANE CAPITAL, LAO PDR**

No	Activity Description	Week 1 (01/09/2020)							Week 2 (08/09/2020)							Week 3 (15/09/2020)							Week 4 (22/09/2020)							Week 5 (29/09/2020)							Week 6 (06/10/2020)							Week 7 (13/10/2020)							Week 8 (20/10/2020)							Week 9 (27/10/2020)							Week 10 (03/11/2020)							Week 11 (10/11/2020)							Week 12 (17/11/2020)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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1	Sign Contract with major subcontractors for construction																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	</

### ເອກະສານຊ້ອນທ້າຍ 3 ມາດຖານການກັ່ນຕອງ

		ກຸ່ມທີ 1	ກຸ່ມທີ 2
ປະເພດໂຄງການລົງທຶນ		ເຮັດບົດລາຍງານການສຶກສາ ຜົນກະທົບສິ່ງແວດລ້ອມ ເບື້ອງຕົ້ນ (ສສຕ)	ເຮັດບົດລາຍງານການປະເມີນ ຜົນກະທົບສິ່ງແວດລ້ອມ (ປຜສ)
<b>I. ໂຄງການພັດທະນາໃນຂະແໜງພະລັງງານ</b>			
1.1	ໂຄງການສ້າງເຂື່ອນໄຟຟ້ານ້ຳຕົກ	< 15 MW ຫລືບັນຈຸນ້ຳໄດ້ <200 ລ້ານ ມ <sup>3</sup> ຫລື ມີ ເນື້ອທີ່ອ່າງເກັບນ້ຳ <1,500 ha	≥15 MW ຫລືບັນຈຸນ້ຳໄດ້ ≥200 ລ້ານ ມ <sup>3</sup> ຫລື ມີ ເນື້ອທີ່ອ່າງເກັບນ້ຳ ≥1,500 ha
1.2	ໂຄງການໄຟຟ້ານິວເຄຣຍ		ທຸກຂະໜາດ
1.3	ໂຄງການພະລັງງານໄຟຟ້າຈາກອາຍແກສທຳມະຊາດ	5-50 MW	>50 MW
1.4	ໂຄງການພະລັງງານຄວາມຮ້ອນ	≤ 10MW	>10MW
1.5	ໂຄງການພັດທະນາທີ່ສົ່ງນ້ຳມັນແລະ ອາຍແກັສ		ທຸກຂະໜາດ
1.6	ໂຄງການກັ່ນນ້ຳມັນ		ທຸກຂະໜາດ
1.7	ໂຄງການສາຍສົ່ງໄຟຟ້າແຮງສູງ		
1.7.1	ໂຄງການສາຍສົ່ງໄຟຟ້າແຮງສູງ ≥ 230KV	≤ 50 Km	> 50 Km
1.7.2	ໂຄງການສາຍສົ່ງໄຟຟ້າແຮງສູງ <230KV	ທຸກຂະໜາດ	ໃນກໍລະນີສາຍສົ່ງຜ່ານເຂດ ປ່າສະຫງວນ ຫລື ຊຸມຊົນ
1.7.3	ສະຖານນີໄຟຟ້າແຮງສູງ	< 10 ha	≥ 10 ha
<b>II. ໂຄງການລົງທຶນໃນຂະແໜງກະສິກຳ, ປ່າໄມ້</b>			
2.1	ໂຄງການປູກໄມ້ອຸດສະຫະກຳ	20-300 ha	>300 ha
2.2	ໂຄງການປູກພືດອຸດສະຫະກຳ	20-500 ha	>500 ha
2.3	ໂຄງການກໍ່ສ້າງຊົນລະປະທານ	100-2000 ha	>2000 ha
2.4	ໂຄງການລ້ຽງສັດໃຫຍ່; ງົວ, ຄວາຍ, ມ້າ, ແລະອື່ນໆ	≥500 ໂຕ	
2.5	ໂຄງການລ້ຽງສັດປີກ	≥1000 ໂຕ	
2.6	ໂຄງການລ້ຽງໝູ	≥200 ໂຕ	
2.7	ໂຄງການລ້ຽງປາ ແລະ ສັດນ້ຳໃນໜອງແບບອຸດສະ ຫະກຳ	≥10 ha	
2.8	ໂຄງການລ້ຽງປາ ແລະ ສັດນ້ຳໃນກະຊັງຕາມລຳແມ່ນ້ຳ	≥300 ມ <sup>2</sup>	
2.9	ໂຄງການລ້ຽງແຂ	≥100 ໂຕ	
<b>III. ໂຄງການລົງທຶນໃນຂະແໜງອຸດສະຫະກຳປຸງແຕ່ງ</b>			
3.1	ການຜະລິດ, ການປຸງແຕ່ງ ແລະ ການຮັກສາຊີ້ນ ແລະ ຜະລິດຕະພັນຊີ້ນ	≤20 ໂຕນ/ວັນ	>20 ໂຕນ/ວັນ
3.2	ການປຸງແຕ່ງ ແລະ ການຮັກສາປາ ແລະ ຜະລິດຕະພັນເຮັດ ດ້ວຍປາ	≤20 ໂຕນ/ວັນ	>20 ໂຕນ/ວັນ
3.3	ການປຸງແຕ່ງ ແລະ ການຮັກສາ ຫມາກໄມ້ ແລະ ຜັກ	ທຸກຂະໜາດ	
3.4	ໂຮງງານດຳເນີນກິດຈະການ ຜະລິດຕະພັນຈາກກົມ	≤40 ໂຕນ/ວັນ	>40 ໂຕນ/ວັນ

ປະເພດໂຄງການລົງທຶນ		ກຸ່ມທີ 1	ກຸ່ມທີ 2
		ເຮັດບົດລາຍງານການສຶກສາ ຜົນກະທົບສິ່ງແວດລ້ອມ ເບື້ອງຕົ້ນ (ສສຕ)	ເຮັດບົດລາຍງານການປະເມີນ ຜົນກະທົບສິ່ງແວດລ້ອມ (ປຜສ)
3.5	ໂຮງງານດຳເນີນກິດຈະການກ່ຽວກັບແປ້ງ ແລະ ຜະລິດຕະພັນຈາກແປ້ງ	50-100 ໂຕນ/ວັນ	>100 ໂຕນ/ວັນ
3.6	ໂຮງງານດຳເນີນກິດຈະການກ່ຽວກັບອາຫານສັດ	ທຸກຂະໜາດ	
3.7	ໂຮງງານດຳເນີນກິດຈະການກ່ຽວກັບນ້ຳຕານ	≤50 ໂຕນ/ວັນ	>50 ໂຕນ/ວັນ
3.8	ໂຮງງານດຳເນີນກິດຈະການກ່ຽວກັບມາກາໂລນີ, ເສັ້ນຫມີ, ເສັ້ນເຝີ, ເຂົ້າປຸ້ນ ແລະ ຜະລິດຕະພັນລັກສະນະເປັນທາດແປ້ງ	>1 ໂຕນ/ວັນ	
3.9	ໂຮງງານດຳເນີນກິດຈະການກ່ຽວກັບເຫລົ້າ, ເຫລົ້າແວງ, ເບຍ...	≤500,000 ລິດ/ປີ	>500,000 ລິດ/ປີ
3.10	ໂຮງງານດຳເນີນກິດຈະການກ່ຽວກັບນ້ຳດື່ມບໍ່ມີທາດເຫລົ້າ, ໂຊດາ, ນ້ຳອັດລົມ, ຜະລິດຕະພັນນ້ຳແຮ່ທາດ	ທຸກຂະໜາດ	
3.11	ໂຮງງານດຳເນີນກິດຈະການກ່ຽວກັບນ້ຳດື່ມອານາໄມ	ທຸກຂະໜາດ	
3.12	ໂຮງງານດຳເນີນກິດຈະການກ່ຽວກັບຜະລິດຕະພັນຢາສູບ	ທຸກຂະໜາດ	
3.13	ໂຮງງານດຳເນີນກິດຈະການກ່ຽວກັບແຜ່ນແພ, ເສັ້ນດ້າຍ, ເສັ້ນໄຍແບບອຸດສະຫະກຳ	ທຸກຂະໜາດ	
3.14	ໂຮງງານດຳເນີນກິດຈະການກ່ຽວກັບເຄື່ອງນຸ່ງຫົ່ມ, ຂັດແຕ່ງ ແລະ ຍ້ອມສີຂົນສັດ	ທຸກຂະໜາດ	
3.15	ໂຮງງານດຳເນີນກິດຈະການກ່ຽວກັບການເອື້ອບ ແລະ ນວດຫນັງ	ທຸກຂະໜາດ	
3.16	ໂຮງງານດຳເນີນກິດຈະການກ່ຽວກັບຫີບ, ກະເປົາ ແລະ ຜະລິດຕະພັນທີ່ຄ້າຍຄືກັນເຊັ່ນ: ອານມ້າ ແລະ ບັງຫຼຸນ ບັງຄັບມ້າ.	≤1.0 million unit/year	>1.0million unit/year
3.17	ໂຮງງານດຳເນີນກິດຈະການກ່ຽວກັບຜະລິດຕະພັນເກີບຫນັງ	≤1.0 million pair/year	>1.0million pair/year
3.18	ໂຮງງານດຳເນີນກິດຈະການກ່ຽວກັບໄມ້, ຫວາຍ, ເພືອງ ແລະ ວັດຖຸຈັກສານ	ທຸກຂະໜາດ	
3.19	ໂຮງງານດຳເນີນກິດຈະການກ່ຽວກັບໄມ້ປອກ, ໄມ້ບາງຝານເປັນແຜ່ນ ແລະ ອື່ນໆ	≤100,000m <sup>2</sup> /year	>100,000m <sup>2</sup> /year
3.20	ໂຮງງານດຳເນີນກິດຈະການກ່ຽວກັບເຫຍື້ອເຈ້ຍ, ເຈ້ຍ ແລະ ເຈ້ຍແຂງ	≤50Ton/day	>50Ton/day
3.21	ໂຮງງານດຳເນີນກິດຈະການກ່ຽວກັບການພິມ	ທຸກຂະໜາດ	
3.22	ໂຮງງານດຳເນີນກິດຈະການກ່ຽວກັບນ້ຳມັນເຊື້ອໄຟ (ເປໂຕຣຽມ)		ທຸກຂະໜາດ
3.23	ໂຮງງານດຳເນີນກິດຈະການກ່ຽວກັບຜະລິດຕະພັນເຄມີໃນຂັ້ນພື້ນຖານ ຍົກເວັ້ນຝຸ່ນວິທະຍາສາດ ແລະ ຜະລິດຕະພັນທີ່ມີທາດອາລຸມ	≤500 Ton/year	>500 Ton/year
3.24	ໂຮງງານດຳເນີນກິດຈະການກ່ຽວກັບຢາປາບລັດຕູພິດ ແລະ ຜະລິດຕະພັນເຄມີພັນການກະເສດອື່ນໆ		All scale
3.25	ໂຮງງານດຳເນີນກິດຈະການກ່ຽວກັບ ການຢາ, ເຄມີພັນ	≤500 Ton/year	>500 Ton/year

ປະເພດໂຄງການລົງທຶນ		ກຸ່ມທີ 1	ກຸ່ມທີ 2
		ເຮັດບົດລາຍງານການສຶກສາ ຜົນກະທົບສິ່ງແວດລ້ອມ ເບື້ອງຕົ້ນ (ສສຕ)	ເຮັດບົດລາຍງານການປະເມີນ ຜົນກະທົບສິ່ງແວດລ້ອມ (ປຜສ)
	ການແພດ ແລະ ຜະລິດຕະພັນການຢາພື້ນເມືອງ		
3.26	ໂຮງງານດຳເນີນກິດຈະການກຸ້ວກັບສະບູກ້ອນ, ສະບູ ຝຸ່ນ , ວັດຖຸພັນອານາໄມ, ລ້າງຂັດຖູ, ນ້ຳຫອມ ແລະ ເຄື່ອງ ສຳອາງ	≤10 Ton/day	> 10 Ton/day
3.27	ໂຮງງານດຳເນີນກິດຈະການກຸ້ວກັບເຄມີພື້ນື່ນໆ		ທຸກຂະໜາດ
3.28	ໂຮງງານດຳເນີນກິດຈະການກຸ້ວກັບຢາງຍືດ, ຢາພາລາ	100-300 Ton/year	>300 Ton/year
3.29	ໂຮງງານດຳເນີນກິດຈະການກຸ້ວກັບປາລາສະຕິກ	≤500 Ton/year	> 500 Ton/year
3.30	ໂຮງງານດຳເນີນກິດຈະການກຸ້ວກັບແກ້ວ ແລະ ຜະລິດ ຕະພັນແກ້ວ	ທຸກຂະໜາດ	
3.31	ໂຮງງານດຳເນີນກິດຈະການກຸ້ວກັບຜະລິດຕະພັນແຮ່ທີ່ບໍ່ ແມ່ນໂລຫະອື່ນໆ	ທຸກຂະໜາດ	
3.32	ໂຮງງານດຳເນີນກິດຈະການກຸ້ວກັບຊີມັງ, ປູນຂາວແລະ ປູນໂບກ (Plaster)	≤30 ໂຕນ/ຊົ່ວໂມງ	> 30 ໂຕນ/ຊົ່ວໂມງ
3.33	ໂຮງງານດຳເນີນກິດຈະການກຸ້ວກັບເຫຼັກຂັ້ນຕົ້ນ, ເຫຼັກ ແລະ	≤120 ໂຕນ/ວັນ	> 120 ໂຕນ/ວັນ
3.34	ໂຮງງານດຳເນີນກິດຈະການກຸ້ວກັບໂລຫະປະເສີດຂັ້ນຕົ້ນ ແລະ ໂລຫະທີ່ບໍ່ແມ່ນທາດເຫຼັກ	≤50 ໂຕນ/ວັນ	> 50 ໂຕນ/ວັນ
3.35	ການຫລໍ່ຫລອມ ຮົງດຶງເຫຼັກ ແລະ ເຫຼັກກ້າ	≤50 ໂຕນ/ວັນ	> 50 ໂຕນ/ວັນ
3.36	ການຫລໍ່ຫລອມ ຮົງດຶງໂລຫະ ທີ່ບໍ່ແມ່ນທາດເຫຼັກ	ທຸກຂະໜາດ	
3.37	ໂຮງງານດຳເນີນກິດຈະການກຸ້ວກັບໂຄງປະກອບຜະລິດ ຕະພັນໂລຫະ, ຖັງ, ອ່າງ	ທຸກຂະໜາດ	
3.38	ໂຮງງານດຳເນີນກິດຈະການກຸ້ວກັບຫມໍ້ກຳເນີດໄຟ	ທຸກຂະໜາດ	
3.39	ໂຮງງານດຳເນີນກິດຈະການກຸ້ວກັບເຄື່ອງຮັບໃຊ້ໃນບ້ານ ເຮືອນທົ່ວໄປ (domestict appliances)	ທຸກຂະໜາດ	
3.40	ໂຮງງານດຳເນີນກິດຈະການກຸ້ວກັບເຄື່ອງຮັບໃຊ້ ທ້ອງຖານ, ການບັນຊີ ແລະເຄື່ອງຈັກສະໜອງກິນ (computing)	ທຸກຂະໜາດ	
3.41	ໂຮງງານດຳເນີນກິດຈະການກຸ້ວກັບ ເຄື່ອງຈັກໄຟຟ້າ ແລະຊຸດອຸປະກອນໄຟຟ້າອື່ນໆ (apparatus)	ທຸກຂະໜາດ	
3.42	ໂຮງງານດຳເນີນກິດຈະການກຸ້ວກັບຫມໍ້ໄຟ ແລະ ຖ່ານໄຟ ສາຍ	≤100 Ton/year	>100 Ton/year
3.43	ໂຮງງານດຳເນີນກິດຈະການກຸ້ວກັບ ວິທະຍຸ, ໂທລະທັດ ແລະອຸປະກອນເຄື່ອງສື່ສານ ແລະ ຊຸດເຄື່ອງມືຮັບໃຊ້	ທຸກຂະໜາດ	
3.44	ໂຮງງານກຸ້ວກັບອຸປະກອນການແພດ, ເຄື່ອງວັດແທກ ຄວາມແມ່ນຢາ ແລະ ສາຍຕາ, ໂມງໃສ່ແຂນ ແລະ ໂມງ ໃຫຍ່	ທຸກຂະໜາດ	
3.45	ໂຮງງານປະກອບລົດເກັ່ງ, ລົດລາກ ແລະ ເຄື່ອງລົດລາກ ແລະ ລົດພວງໃດຫນຶ່ງ (semi trailers)	ທຸກຂະໜາດ	
3.46	ໂຮງງານດຳເນີນກິດຈະການກຸ້ວກັບອາໄຫລ່ ແລະ ຊີ້ນ	≤1,000 ໂຕນ/ປີ	>1,000 ໂຕນ/ປີ

		ກຸ່ມທີ 1	ກຸ່ມທີ 2
ປະເພດໂຄງການລົງທຶນ		ເຮັດບົດລາຍງານການສຶກສາ ຜົນກະທົບສິ່ງແວດລ້ອມ ເບື້ອງຕົ້ນ (ສສຕ)	ເຮັດບົດລາຍງານການປະເມີນ ຜົນກະທົບສິ່ງແວດລ້ອມ (ປຜສ)
	ສ່ວນລົດຍົນ ແລະ ເຄື່ອງຈັກທີ່ກ່ຽວຂ້ອງ		
3.47	ໂຮງງານຜະລິດລົດຖີບ ແລະ ລໍຮັບໃຊ້ຄົນພິການ	≤10,000 ຜະລິດຕະພັນ/ປີ	>10,000 ຜະລິດຕະພັນ/ປີ
3.48	ການດຳເນີນກິດຈະການກ່ຽວກັບເພີນິເຈີ (ເຄື່ອງເຮືອນ)	≤10,000 ຜະລິດຕະພັນ/ປີ	>10,000 ຜະລິດຕະພັນ/ປີ
3.49	ການເກັບຮັກສາສິ່ງເສດເຫຼືອທີ່ບໍ່ເປັນອັນຕະລາຍ	ທຸກຂະໜາດ	
3.50	ການກຳຈັດສິ່ງເສດເຫຼືອທີ່ເປັນອັນຕະລາຍ		ທຸກຂະໜາດ
3.51	ການເຄື່ອນໄຫວບຳບັດ ແລະ ການບໍລິການຄຸ້ມຄອງສິ່ງ ເສດເຫຼືອອື່ນໆ		ທຸກຂະໜາດ
3.52	ໂຮງງານຜະລິດນ້ຳປາ	ທຸກຂະໜາດ	
IV. ໂຄງການລົງທຶນໃນຂະແໜງ ພື້ນຖານໂຄງລ່າງ ແລະ ບໍລິການ			
4.1	ໂຄງການຖິ້ມບຶງ, ແມ່ນ້ຳ, ຄອງ ລະບາຍນ້ຳ ທີ່ຈະກໍ່ຄວາມ ເສຍຫາຍໃຫ້ສາທາລະນະ		ທຸກຂະໜາດ
4.2	ໂຄງການກໍ່ສ້າງເຮືອນພັກລວມໝູ່, ບ້ານຈັດສັນ	>50 ຫ້ອງ	
4.3	ໂຄງການກໍ່ສ້າງສະໜາມກີບ	9 ຫລຸມ	
4.4	ໂຄງການສະໜາມກິລາຄົບວົງຈອນ		ທຸກຂະໜາດ
4.5	ໂຄງການກໍ່ສ້າງສາງເກັບນ້ຳມັນ	600-60,000 ເບເຣນ	
4.6	ໂຄງການກໍ່ສ້າງ ແລະ ພັດທະນາເຂດອຸດສະຫະກຳ		ທຸກຂະໜາດ
4.7	ໂຄງການກໍ່ສ້າງ ແລະ ພັດທະນາເຂດເສດຖະກິດພິເສດ		ທຸກຂະໜາດ
4.8	ໂຄງການກໍ່ສ້າງຄອງລະບາຍນ້ຳເປື້ອນ	ທຸກຂະໜາດ	
4.9	ໂຄງການກໍ່ສ້າງໂຮງບຳບັດນ້ຳເປື້ອນຈາກຕົວເມືອງ, ໂຮງໝໍ ແລະ ໂຮງງານອຸດສະຫະກຳປຸງແຕ່ງ		ທຸກຂະໜາດ
4.10	ໂຄງການກໍ່ສ້າງທາງຜ່ານເຂດປ່າໄມ້ (ປ່າສະຫງວນ, ປ່າປ້ອງກັນ ແລະ ປ່າຜະລິດ) ແລະ ເຂດຊີວະນາໆພັນທີ່ ຍັງບໍ່ທັນມີແລວທາງ		ທຸກຂະໜາດ
4.11	ໂຄງການກໍ່ສ້າງທາງລົດໄຟ		≥100 km
4.12	ໂຄງການກໍ່ສ້າງເສັ້ນທາງໃຫມ່ (ເສັ້ນທາງຫລວງແຫ່ງຊາດ, ແຂວງ, ເມືອງ, ຊົນນະບົດ, ແລະ ທາງຫລວງພິເສດ)		ທຸກຂະໜາດ
4.13	ການປັບປຸງເສັ້ນທາງຫລວງແຫ່ງຊາດ, ແຂວງ, ເມືອງ, ຊົນນະບົດ, ແລະ ທາງຫລວງພິເສດ)	ທຸກຂະໜາດ	
4.14	ການຟື້ນຟູເສັ້ນທາງ (ເສັ້ນທາງຫລວງແຫ່ງຊາດ, ແຂວງ)	ທຸກຂະໜາດ	
4.15	ໂຄງການກໍ່ສ້າງສະໜາມບິນ ທີ່ມີເສັ້ນທາງແລ່ນ (ເວລາມີ ຍົນຂຶ້ນ-ລົງ)	1,000-2,500 ມ	≥2,500 ມ
4.16	ໂຄງການກໍ່ສ້າງໂຮງໝໍ	≤100 ຕຸງ	>100 ຕຸງ
4.17	ໂຄງການກໍ່ສ້າງໂຮງແຮມ ຫລືສະຖານທີ່ພັກຕາກອາ ກາດໃຫ້ແມ່ນ້ຳ	<80 ຫ້ອງ	>80 ຫ້ອງ
4.18	ໂຄງການກໍ່ສ້າງໂຮງແຮມຄົບວົງຈອນ	<50 ha	>50 ha
4.19	ການພັດທະນາບ່ອນທ່ອງທ່ຽວ ແລະ ບ່ອນພັກຜ່ອນ ໃນ ສວນອຸດທະຍານແຫ່ງຊາດ		ທຸກຂະໜາດ
4.20	ໂຄງການກໍ່ສ້າງໂຮງງານນຳໃຊ້ສິ່ງເສດເຫຼືອຄືນໃຫມ່		ທຸກຂະໜາດ



ປະເພດໂຄງການລົງທຶນ		ກຸ່ມທີ 1	ກຸ່ມທີ 2
		ເຮັດບົດລາຍງານການສຶກສາ ຜົນກະທົບສິ່ງແວດລ້ອມ ເບື້ອງຕົ້ນ (ສສຕ)	ເຮັດບົດລາຍງານການປະເມີນ ຜົນກະທົບສິ່ງແວດລ້ອມ (ປຜສ)
4.21	ໂຄງການກໍ່ສ້າງເຕົາເຜົາສິ່ງເສດເຫຼືອ (Incinerator)		ທຸກຂະໜາດ
4.22	ໂຄງການກໍ່ສ້າງເຕົາເຜົາສິ່ງເສດເຫຼືອຕ່າງໆ		ທຸກຂະໜາດ
4.23	ໂຄງການທີ່ນໍາໃຊ້ສ່ວນຫນຶ່ງ ຫລື ທັງຫມົດເນື້ອທີ່ ທີ່ມີຜົນ ສະທ້ອນທາງລົບຕໍ່ເຂດປົກປ້ອງທຳມະຊາດ, ເຂດອະນຸລັກ ຊີວະນາໆພັນທຳມະຊາດ, ເຂດຮ່ອງຮອຍປະຫວັດສາດ, ວັດທະນະທຳ, ເຂດທີ່ໄດ້ຮັບການອະນຸມັດ ຈາກອົງການປົກ ຄອງທ້ອງຖິ່ນ		ທຸກຂະໜາດ
4.24	ໂຄງການກໍ່ສ້າງຕາຫນ່າງໂທລະຄົມມະນາຄົມ	ທຸກຂະໜາດ	
4.25	ໂຄງການຄົມມະນາຄົມທາງນໍ້າ (ການປັບປຸງຄອງເດີນ ເຮືອຕາມລຳແມ່ນໍ້າ)	≤200 ໂຕນ	>200 ໂຕນ
4.26	ໂຄງການກໍ່ສ້າງທ່າເຮືອ		
4.26.1	- ທ່າເຮືອໂດຍສານ	≤500 ໂຕນ (ບໍ່ລວມນໍ້າຫນັກເຮືອ)	>500 ໂຕນ (ບໍ່ລວມນໍ້າຫນັກເຮືອ)
4.26.2	- ທ່າເຮືອຂົນສົ່ງສິນຄ້າທົ່ວໄປ	≤500 ໂຕນ (ບໍ່ລວມນໍ້າຫນັກເຮືອ)	>500 ໂຕນ (ບໍ່ລວມນໍ້າຫນັກເຮືອ)
4.26.3	- ທ່າເຮືອຂົນສົ່ງສິນທີ່ເປັນອັນຕະລາຍເປັນຕົ້ນ: ເຄມີ, ນໍ້າ ມັນເຄື່ອງ, ນໍ້າມັນເຊື້ອໄຟ, ຖ່ານຫີນ...		ທຸກຂະໜາດ
4.27	ໂຄງການກໍ່ສ້າງປ້ອງກັນຕະຝັ່ງເຈືອນ		>1km
4.28	ໂຄງການກໍ່ສ້າງສະໜາມຖິ້ມສິ່ງເສດເຫຼືອສຳລັບຊຸມຊົນ	<50 ha	>50 ha
4.29	ໂຄງການກໍ່ສ້າງສະໜາມຖິ້ມສິ່ງເສດເຫຼືອທີ່ເປັນອັນຕະລາຍ		ທຸກຂະໜາດ
4.30	ໂຄງການກໍ່ສ້າງສະໜາມຖິ້ມສິ່ງເສດເຫຼືອອຸດສະຫະກຳ		ທຸກຂະໜາດ
V. ໂຄງການລົງທຶນໃນຂະແໜງແຮ່ທາດ			
5.1	ການນໍາໃຊ້ນໍ້າໃຕ້ດິນເຂົ້າໃນວຽກງານອຸດສະຫະກຳ, ກະສິກຳ ແລະ ຕົວເມືອງ	<4,500 ມ³/ວັນ	>4,500 ມ³/ວັນ
5.2	ໂຄງການດູດທຶນ ຊາຍ ຢູ່ໃນນໍ້າ	1,000-50,000 ມ³/ປີ	50,000 ມ³/ປີ (ຕໍ່ຈຸດ)
5.3	ການຂຸດເຈາະທຶນ ແລະ ຄົບທຶນ	≤50 ໂຕນ/ປີ	>50 ໂຕນ/ປີ
5.4	ໂຄງການຂຸດຄົ້ນວັດຖຸດິບຮັບໃຊ້ການກໍ່ສ້າງ (ດິນ, ຫີນ, ຊາຍ) ຢູ່ເທິງຫນ້າດິນ	<100,000 ມ³/ປີ	≥100,000 ມ³/ປີ
5.5	ໂຄງການຂຸດຄົ້ນແຮ່ທາດແຂງ (ໂດຍບໍ່ນໍາໃຊ້ສານເຄມີ)		ທຸກຂະໜາດ
5.6	ໂຄງການຂຸດຄົ້ນ ແລະ ປຸງແຕ່ງແຮ່ທາດທີ່ນໍາໃຊ້ ສານເຄມີ		ທຸກຂະໜາດ
5.7	ໂຄງການປຸງແຕ່ງແຮ່ທາດແຂງ	≤50,000 ໂຕນ/ປີ	>50,000 ໂຕນ/ປີ
5.8	ໂຄງການຂຸດຄົ້ນນໍ້າໃຕ້ດິນ		>5,000 ມ³/ວັນ
5.9	ໂຄງການນໍາໃຊ້ນໍ້າຫນ້າດິນ		>10,000 ມ³/ວັນ
5.10	ໂຄງການຂຸດຄົ້ນນໍ້າແຮ່ທາດ (ນໍ້າຫນ້າດິນ ແລະ ນໍ້າ ໃຕ້ດິນ) ສຳລັບອຸປະໂພກ ແລະ/ຫລື		>1,000 ມ³/ວັນ
5.11	ໂຄງການຂຸດຄົ້ນນໍ້າແຮ່ທາດ (ນໍ້າຫນ້າດິນ ແລະ ນໍ້າ ໃຕ້ດິນ) ສຳລັບອາບ ໃຊ້ບຳບັດທາງການແພດ (ໂລກຜົວຫນຶ່ງ)		>500 ມ³/ວັນ

		ກຸ່ມທີ 1	ກຸ່ມທີ 2
ປະເພດໂຄງການລົງທຶນ		ເຮັດບົດລາຍງານການສຶກສາ ຜົນກະທົບສິ່ງແວດລ້ອມ ເບື້ອງຕົ້ນ (ສສຕ)	ເຮັດບົດລາຍງານການປະເມີນ ຜົນກະທົບສິ່ງແວດລ້ອມ (ປຜສ)
	ແລະ ອື່ນໆ		
5.12	ໂຄງການຂຸດຄົ້ນແຮ່ທາດໂດຍນໍ້າໃຊ້ສານເຄມີ		ທຸກຂະໜາດ
5.13	ໂຄງການຂຸດຄົ້ນນໍ້າມັນ ແລະ ອາຍແກັສທໍາມະຊາດ		ທຸກຂະໜາດ

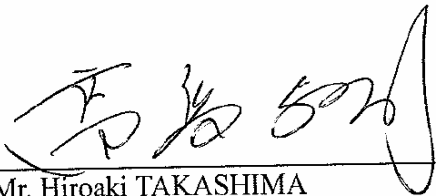
*“ຂອບເຂດໜ້າວຽກ” ແລະ “ບົດບັນທຶກອງປະຊຸມ”*



SCOPE OF WORK  
FOR  
THE STUDY  
ON  
IMPROVEMENT OF WATER ENVIRONMENT  
IN  
VIENTIANE CITY,  
LAO PEOPLE'S DEMOCRATIC REPUBLIC


AGREED UPON BETWEEN  
MINISTRY OF PUBLIC WORKS AND TRANSPORT  
AND  
JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

VIENTIANE, 3<sup>rd</sup> November, 2008



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Mr. Hiroaki TAKASHIMA  
Chief Representative  
Laos Office  
Japan International Cooperation Agency



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Mr. Sommad Pholsena  
Minister  
Ministry of Public Works and Transport  
(MPWT)

## I. INTRODUCTION

In response to the request from the Government of Lao People's Democratic Republic (hereinafter referred to as "the Government of Lao PDR"), the Government of Japan has decided to conduct "the Study on Improvement of Water Environment in Vientiane City, Lao People's Democratic Republic" (hereinafter referred to as "the Study") in accordance with the relevant laws and regulations in force in Japan.

Accordingly, the Japan International Cooperation Agency (hereinafter referred to as "JICA"), the official agency responsible for the implementation of the technical cooperation programs of the Government of Japan, will undertake the Study in close cooperation with the relevant authorities concerned of the Government of Lao PDR.

The present document sets forth the Scope of Work with regard to the Study.

## II. OBJECTIVE OF THE STUDY

The specific objectives of the Study are:

1. To survey and analyze the existing conditions of water environment in the Study area
2. To formulate a master plan for water environment management in Vientiane City
3. To transfer the technique on how to formulate a master plan for water environment management to Lao counterparts

## III. STUDY AREA

The Study area is seven (7) districts (Sikhottabong, Chanthabury, Sissatanak, Xaisetha, Hadxaifong, Xaithany, Pakngum) especially Mak Hiao river basin in Vientiane city as shown in the attached sheet of Annex I.

## IV. SCOPE OF THE STUDY

To achieve the above objectives, the Study will cover the following items:

### Phase I

Baseline Survey and making draft master plan for water environment management in Vientiane City

1. Review of the existing data and information such as governmental environment policy, related legal system, hydrology, meteorology, geography, geology, natural and social environmental information and related existing reports
2. Monitoring survey for natural conditions in the Mak Hiao river basin
3. Survey of current situation of the storm water and wastewater management systems in the Study area
4. Review of the existing urban development plan, water supply project plan, wastewater treatment plan, urban drainage plan in the Study area
5. Formulation of the draft master plan for water environment management in Vientiane City including following items
  - (1) Water Environment Improvement Strategy for 2020
  - (2) Implementation plan based on the strategy
    - 1) Improvement plan of drainage water quality in Vientiane City
    - 2) Promotion plan of environmental education for water environment improvement



- 3) Consolidation plan of the legal framework for water environment
- (3) Implementation of Initial Environmental Examination (IEE)
- (4) Identification of priority items(s) among each plan showed in above: 5.(2). 1),2)and 3).
- (5) Recommendations
6. Selection of the target item(s) from priority ones showed in 5.(2).1)2)and 3) for a pilot project and a pre-Feasibility Study
7. Conducting (a) seminar(s) and/or (a) workshop(s)

## Phase II

Implementation of a pilot project and a pre-Feasibility Study (pre-F/S)

1. Implementation of an environmental education pilot project
2. Implementation of a pre-F/S
  - (1) To conduct field survey at the construction site (Topographic survey, Environmental survey)
  - (2) To formulate a construction plan and a procurement plan
  - (3) To formulate an operation and maintenance plan
  - (4) To estimate the project cost
  - (5) To conduct the IEE survey (See attached Annex II)
  - (6) To evaluate the project by economical, financial, technical, social and environmental aspects)
3. Finalization of the master plan based on the result of 1) and 2) of Phase II.
4. Conducting (a) seminar(s) and/or (a) workshop(s)

## V. STUDY SCHEDULE

The Study will be carried out in accordance with attached tentative schedule shown in the Annex III. The schedule is tentative and subject to be modified when both parties agree upon and any necessity that arises during the course of the Study.

## VI. REPORTS

JICA shall prepare and submit the following writing reports and a digital data to the Government of Lao PDR.

1. Inception Report:  
Twenty five (25) copies in English at the commencement of the Study
2. Progress Report (1)  
Twenty five (25) copies in English during Phase I
3. Interim Report:  
Twenty five (25) copies in English at the end of Phase I
4. Progress Report (2)  
Twenty five (25) copies in English during Phase II
5. Draft Final Report:  
Twenty five (25) copies in both English and Lao at the end of Phase II  
The Government of Lao PDR shall submit its comments within one (1) month after receipt of the Draft Final Report.
6. Final Report:  
Fifty (50) copies in both English and Lao within one (1) month after receipt of the comments on the Draft Final Report from the Government of Lao PDR.

## VII. UNDERTAKING OF THE GOVERNMENT OF LAO PDR

1. To facilitate smooth conduct of the Study, the Government of Lao PDR shall take the following necessary measures ;
  - (1) To secure the safety of the Japanese study team (hereinafter referred to as "the Team"),
  - (2) To permit the members of the Team to enter, leave and sojourn in Lao People's Democratic Republic (hereinafter referred to as "Lao PDR") for the duration of their assignments therein and exempt them from foreign registration requirements and consular fees,
  - (3) To exempt the members of the Team from taxes, duties, fees and any other charges on equipment, machinery and other materials brought into and out of Lao PDR for the conduct of the Study,
  - (4) To exempt the members of the Team from income tax and charges of any kind imposed on or in connection with any emoluments or allowances paid to the members of the Team for their services in connection with the implementation of the Study,
  - (5) To provide necessary facilities to the Team for remittance as well as utilization of the funds introduced into Lao PDR from Japan in connection with the implementation of the Study,
  - (6) To secure permission for the Team to enter into private properties or restricted areas for the implementation of the Study,
  - (7) To secure permission for the Team to take all data and documents including maps and photographs related to the Study out of Lao PDR to Japan, and
  - (8) To provide medical services as needed. Its expenses will be chargeable to the members of the Team.
2. The Government of Lao PDR shall bear claims, if any arises, against the members of the Team resulting from, occurring in the course of, or otherwise connected with, the discharge of their duties in the implementation of the Study, except when such claims arise from gross negligence or willful misconduct on the part of the member of the Team.
3. Public Works and Transport Institute (hereinafter referred to as "PTI") shall act as counterpart agency to the Team and also as coordinating body in relation with other governmental and non-governmental organizations concerned for the smooth implementation of the Study.
4. PTI and the related organizations shall nominate a counterpart team that will work closely with the Team throughout the study period.
5. PTI shall, at its own expense, provide the Team with the followings, in cooperation with other organizations concerned:
  - (1) available data and information related to the Study,
  - (2) counterpart personnel,
  - (3) suitable office space with necessary equipment such as desks, chairs, telephone,
  - (4) credentials or identification cards to members of the Team,
  - (5) necessary permission by security authorities for field surveys of the Team, and
  - (6) information on as well as support in obtaining medical services.
6. Ministry of Public Works and Transport (MPWT) will be the executing agency for the Study. A Steering Committee will be organized under the chairmanship of MPWT consisting of all the concerned organizations, such as PTI, DHUP, the related departments of the Water Resources and Environment Administration (WREA), Department of Public Works and Transport of Vientiane city and Vientiane Urban Development Administration Authority (VUDAA). The Committee will be convened at times when there is a need to discuss and resolve critical issues related to development policies and strategy.

## VIII. OTHERS

JICA and PTI shall consult with each other in respect of any matter that may arise from or in connection with the Study.

5



## Terms of Reference for the Environmental and Social Considerations Study

### Environmental and Social Considerations Study (IEE Level)

1. Analysis of environmental baseline data
  - (1) Social and economic conditions  
population, economy, employment, infrastructure/public facilities (water supply, sewerage, etc.), land use, water use, landownership, public health, local conflicts, religious groups, cultural heritage/historical site, hazards(risk), accident, protection/reserve area, etc.
  - (2) Natural conditions  
Topography, geology, soil, ground water, meteorology, hydrology (water level, tidal current, wave, etc.), ecology (fauna & flora), vegetation/forests, water bodies (river, canal, reservoir, pond, etc), erosion, landscape, natural disaster, etc.
  - (3) Polluted situations  
Air pollution/quality, water pollution/quality, soil contamination, noise and vibration, land subsidence, offensive odor, waste materials, etc.
  - (4) Laws  
Laws concerning Environmental Impact Assessment, compensation and resettlement and environmental issue, etc.
2. Scoping  
“scoping” means deciding alternatives to be analyzed, and grasping a range of significant and likely significant impacts, and considering study methods.
3. Initial environmental examination and study on mitigation measures (including study on alternatives)
4. Consultations with stakeholders (stakeholders meetings) at the appropriate study stage.

## Tentative Schedule of the Study

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Work Schedule	Phase I																Phase II													
Reports	△ IC/R								△ PR/R(1)							△ IT/R						△ PR/R(2)					△ DF/R	△ F/R		

IC/R : Inception Report

IT/R : Interim Report

PR/R : Progress Report

DF/R : Draft Final Report

F/R : Final Report

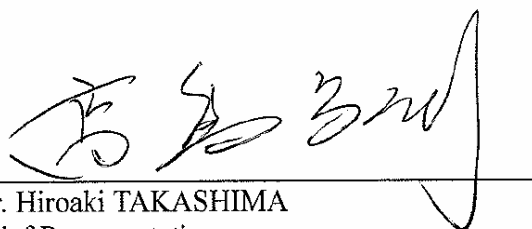




MINUTES OF MEETINGS  
ON  
THE STUDY  
ON  
IMPROVEMENT OF WATER ENVIRONMENT  
IN  
VIENTIANE CITY,  
LAO PEOPLE'S DEMOCRATIC REPUBLIC

AGREED UPON BETWEEN  
MINISTRY OF PUBLIC WORKS AND TRANSPORT  
AND  
JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

VIENTIANE, 3<sup>rd</sup> November, 2008



Mr. Hiroaki TAKASHIMA  
Chief Representative  
Laos Office  
Japan International Cooperation Agency



Mr. Sommad Pholsena  
Minister  
Ministry of Public Works and Transport  
(MPWT)

## **1. COUNTERPART ORGANIZATION**

Department of Housing and Urban Planning (DHUP), Ministry of Communication, Transport and Construction (MCTPC) requested the proposal of the Study in August, 2007. After that MCTPC was reorganized and changed its name to Ministry of Public Works and Transport (MPWT) in 12 October, 2007. MPWT assigned PTI (the former URI: Urban Research Institute) as the counterpart agency for the Study.

PTI shall nominate a counterpart team that work closely with the Japanese Study Team throughout the Study period. And related organization such as DHUP, the related departments of the Water Resources and Environment Administration (WREA), Department of Public Works and Transport of Vientiane city and Vientiane Urban Development Administration Authority (VUDAA) shall nominate member(s) of the counterpart team mentioned above. Lao side will provide a list of counterpart team personnel before commencement of the Study.

## **2. STUDY PERIOD**

The duration of the Study will be two (2) years and six (6) months.

## **3. COLLECTING DATA AND INFORMATION**

Both sides agreed that PTI will provide JICA Study Team with all available data and information related to the Study. PTI will also make best efforts to provide data and information of other organizations. JICA Study Team will utilize those data and information for the purpose of the Study.

Necessary information and data should be provided by Lao side before formulating a master plan for Water Environment Management in Vientiane City, such as quality and quantity of water discharge to That Luang Marsh and Mak Hiao River basin and those related to legal framework changes with respect to EIA.

Especially, "Vientiane New Town Project" will affect the contents of the Study in quality and quantity. Lao side shall provide JICA Study Team with basic design including target population, planned standard quality of effluent from residents, facilities etc as pre-condition for the Study.

## **4. STEERING COMMITTEE**

Both sides agreed that PTI would set up a steering committee for the smooth implementation of the Study. It will consist of the representatives of relevant organizations under the chairpersonship of MPWT. Organizations as follows are assumed to join the committee at the present moment. The JICA Study Team and JICA representative will also attend the committee.

- (1) Ministry of Public Works and Transport (MPWT) (Chair)
- (2) Vientiane city
- (3) PTI
- (4) WREA
- (5) Department of Housing, and Urban Planning (DHUP)
- (6) Department of Public Works and Transport (DPWT), Vientiane city
- (7) Health Department, Vientiane city
- (8) Agriculture and Forestry Department, Vientiane city
- (9) Industry and Commerce Department, Vientiane city
- (10) Environment Office, Vientiane city
- (11) Vientiane Urban Development Administration Authority (VUDAA)
- (12) Vientiane New Town Project, Vientiane City
- (13) Other related organizations

**5. Local sub contractor**

The Japanese study team will contract local specialists to assist the Study. The Lao study director and Japanese Study Team Leader are responsible for preparing terms of the references (TOR) for recruiting the local specialists and their work plans. The finalization of contract of local sub-contractor(s) will be carried out under rules and regulations of JICA

**6. Equipment for the study**

JICA would provide an equipment and supplies for the Study, if necessary. The equipment will remain the property of JICA for the duration of the Study. Its ultimate ownership shall be decided by JICA in consultation with Lao side.

**7. Counterpart fund**

Lao side shall bear the allocation of the counterpart fund for the study, in accordance with the Agreement on Technical Cooperation between the Government of Japan and the Government of Laos signed on 12 December in 2003.

**8. Dispatch of Japanese study team**

JICA will dispatch, at its own expense, the Japanese study team to Laos. The Japanese study team will jointly work with Laos study team and pursue technology transfer to ensure the effective management of water environment in Vientiane City in the course of the Study.

**9. Disclosure of the reports**

MPWT and JICA agreed that the final reports specified in the S/W would be disclosed to all interested parties to facilitate the dissemination of the Study.



**Minutes of Meeting**  
**on**  
**the First Steering Committee**  
**of**  
**The Study on Improvement of Water Environment in Vientiane City**  
**agreed upon between**  
**Public Works and Transport Institute, Ministry of Public Works and**  
**Transport**  
**and**  
**Japan International Cooperation Agency**

February 6, 2009  
Vientiane, LAO PDR

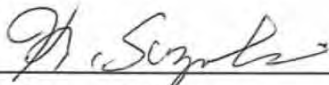


Mr. Kanehiro MORISHITA  
Leader of the Study Team  
Japan International Cooperation Agency



Mr. Keophilavanh APHAYLATH  
Director General of Public Works and Transport  
Institute  
Ministry of Public Works and Transport

Witness



Mr. Kazuya SUZUKI  
Director of Environmental Management Division 1  
Global Environment Department  
Japan International Cooperation Agency



Mr. Bounchanh SINTHAVONG  
Vice Mayor of Vientiane City

## **I. General**

The Government of Japan, in response to the official request of the Government of Lao People's Democratic Republic (hereinafter referred to as "the Government of Lao PDR"), decided to conduct the Study on Improvement of Water Environment in Vientiane City (hereinafter referred to as "the Study") and the Japan International Cooperation Agency (hereinafter referred to as "JICA") dispatched the Preparatory Study Team to Lao PDR in March 2008.

Based on the above study results, Ministry of Public Works and Transport (hereinafter referred to as "MPWT") and JICA Laos Office signed on and exchanged agreement on the Scope of Work (hereinafter referred to as "S/W") and Minutes of Meetings (hereinafter referred to as "M/M") for the Study in November 2008.

JICA has prepared the Study according to the S/W and M/M, and dispatched the Study Team, headed by Mr. Kanehiro MORISHITA of CTI Engineering International Co., Ltd., to Lao PDR from January 20, 2009.

At the commencement of the Study, the Study Team explained the overall activities described in the Inception Report to Lao organizations concerned (hereinafter referred to as "Lao side"), and Lao side and the Study Team (hereinafter referred to as "Both sides") had a discussion on the Inception Report, which was chaired by Mr. Bounchanh SINTHAVONG, Vice Mayor of Vientiane City. Finally the Committee members agreed upon work components and work plan contained in the Inception Report. The list of attendance in the meeting is attached in Attachment.

## **II. Discussions and Suggestions**

### **1. Agreement upon the Study Framework**

The chairman mentioned that (1) boundary of the study area, (2) study approach and methodology, (3) planning strategy and (4) study period of 30 months, which were explained by the Study Team, could be agreed upon by the Lao side.

### **2. Comments from VUDAA**

Vice president of VUDAA pointed out the followings: (1) information on drainage system as shown in 2.1.2 of the Inception Report is not fully covered over the VUDAA projects, (2) responsibility of planning should be included into present capacity of VUDAA as shown in 2.1.3 of the Inception Report, and (3) local authorities of districts and villages should be involved in the proposed pilot project. The Japanese side replied that (1) the drainage information mentioned would be collected in the course of the Phase 1 Study, (2) The planning would be included in the responsibility of VUDAA,



and (3) the local authorities should be involved in the future activities on the pilot project.

**3. Comments from DOAF, Vientiane City**

Since the Mak Hiao River basin is suitable for agriculture and inland fishery, water quality management is important for agricultural activities. Director of DOAF suggested that the newly surveyed data would be provided to the Study Team.

**4. Comments from DOH, Vientiane City**

Deputy Director of DOH mentioned that the sanitary village projects had been progressed and villages of 255 were already completed so far. He also promised providing the information on the project to the Study Team and further cooperation.

**5. Comments from DOE, WREA**

Deputy Director of DOE suggested that (1) drainage network consists of primary, secondary and tertiary canals so that such entire network should be examined in the Study, (2) DOE had much experience widely covered over the entire stakeholders, and (3) DOE strongly agreed upon the collaborative work with the Study Team and relevant agencies mentioned in the Inception Report. He also added that the comments on the report would be provided to the Study Team in a week.

**6. Request from JICA HQ**

Mission leader of JICA HQ requested for providing the counterpart list from relevant agencies, and Deputy Director of PTI promised it in a week.

**III. Summary and Closing Remarks**

The chairman summarized the discussion results. Finally he gave closing remarks to expect the further progress of the study and the meeting was closed.

## ATTACHMENT

List of participants in the Steering Committee Meeting for Presentation of Inception Report on February 5, 2009 at the Meeting Room of Ministry of Public Works and Transport (MPWT)

### Lao Side

Mr. Bounchan SINTHAVONG	Vice Mayor	Vientiane Capital City
Mr. Keophilavanh APHYLATH	Director General	Public Works and Transport Institute
Mr. Thenekham Thongbon	Deputy Director	Public Works and Transport Institute
Mr. Ketkeo SIHALATH	Vice President	VUDAA
Mr. Khamthavi Thaipachan	Director	Department of Housing and Urban Planning
Mr. Khamphadith KHAMMOUNHEUANG	Deputy Director	Department of Environment, (WREA)
Mr. Oudong NHENGVANNAVONG	Deputy Director	Department of Public Works and Transport
Mr. Sengthong BIRAKOUNE	Deputy Director	Department of Health
Mr. Laisanivong AMARTHITHAJA	Director	Department of Agriculture and Forestry
Ms. Viengphone VIRAVONG	Deputy Director	Department of Industry and Commerce
Mr. Boutsady SIPHILOM	Deputy Director	Water Resources and Environment Office
Mr. Saythivi NHENGVANNAVONG	Chief of Secretariat	Vientiane New City Development Project
Ms. Ketmany BANDASACK	Deputy Director	Department of Education
Ms. Maniseng DOUANGNOULACK	Project Coordinator	Public Works and Transport Institute
Mr. Vongsack MIXAY	Project Coordinator	Public Works and Transport Institute
Mr. Thatsakone CHOULAMOUNTRY	Project Coordinator	Public Works and Transport Institute

### Japanese Side

Mr. Kazuya SUZUKI	Director	Environmental Management Division 1, Global Environment Department, JICA
Ms. Hiroko KAMATA	Senior Advisor	JICA
Mr. Yasutoshi SAGAMI	Associate Expert	Environmental Management Division 1, JICA
Mr. Sota SEKINE	Assistant Resident Representative	JICA Laos Office
Mr. Kanehiro MORISHITA	Team Leader	JICA Study Team
Mr. Yasuhiko KATO	Environmental Education	JICA Study Team
Ms. Kyoko MISHIMA	Ecological Conservation/EIA	JICA Study Team
Mr. Hiroshi SHIMOKOCHI	Sanitation/Water Quality	JICA Study Team
Mr. Makoto KODAMA	Drainage Planning	JICA Study Team
Mr. Yunshan BAI	GIS	JICA Study Team

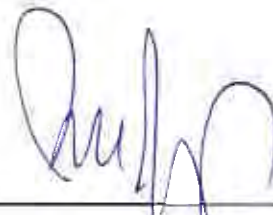
**Minutes of Meeting**  
**on**  
**the Second Steering Committee**  
**of**  
**The Study on Improvement of Water Environment in Vientiane City**  
**agreed upon between**  
**Public Works and Transport Institute, Ministry of Public Works and**  
**Transport**  
**and**  
**Japan International Cooperation Agency**

**September 9, 2009**  
**Vientiane, LAO PDR**



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Mr. Kanehiro MORISHITA  
Leader of the Study Team  
Japan International Cooperation Agency



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Mr. Thenekham THONGBON  
Deputy Director of Public Works and Transport  
Institute  
Ministry of Public Works and Transport

## **I. General**

The Government of Japan, in response to the official request of the Government of Lao People's Democratic Republic (hereinafter referred to as "the Government of Lao PDR"), decided to conduct the Study on Improvement of Water Environment in Vientiane City (hereinafter referred to as "the Study") and the Japan International Cooperation Agency (hereinafter referred to as "JICA") dispatched the Preparatory Study Team to Lao PDR in March 2008.

Based on the above study results, Ministry of Public Works and Transport (hereinafter referred to as "MPWT") and JICA Laos Office signed on and exchanged agreement on the Scope of Work (hereinafter referred to as "S/W") and Minutes of Meetings (hereinafter referred to as "M/M") for the Study in November 2008.

The Japan International Cooperation Agency (hereinafter referred to as "JICA") has prepared the Study according to the Scope of Work (hereinafter referred to as "S/W") and Minutes of Meetings (hereinafter referred to as "M/M") exchanged in November 2008, and dispatched the Study Team, headed by Mr. Kanehiro MORISHITA of CTI Engineering International Co., Ltd., to Lao People's Democratic Republic (hereinafter referred to as "Lao PDR") from January 20, 2009.

At the end of first half of phase 1 in the Study, the Study Team explained the overall results in the Progress Report 1 to Lao organizations concerned (hereinafter referred to as "Lao side"), and Lao side and the Study Team (hereinafter referred to as "Both sides") had a discussion on this Report, which was chaired by Mr. Sithong THONGKEO, Vice Minister of Ministry of Public Works and Transport. Finally the Committee members agreed upon the work results and work plan for formulation of master plan contained in the Progress Report 1. The list of attendance in the meeting is attached in Attachment.

## **II. Discussions and Suggestions**

### **1. Comments and Questions from Department of Housing and Urban Planning, MPWT**

Acting Director of DHUP mentioned (1) Water Supply Law was already issued through the Cabinet Council, and formulation of the Wastewater Management Strategy was almost completed, (2) Installation of septic tank to individual houses was important to solve the sanitation improvement, and (3) Community-based sanitation (CBS) system should be developed in Vientiane since decentralized system might be suitable to our country. In addition, capacity building for survey and designing of CBS system should be required for the DHUP staff.

The study team replied to the above questions (2) and (3). (2) Installation of septic tank shall be basically made by building owner so that administrative guidance shall be strengthened for increase of

coverage of modern toilet system. (3) Regarding CBS system, the JICA team will cooperate with LIRE (Lao Institute for Renewable Energy), which is planning to install CBS in Vientiane and has much experiences in Indonesia, and will conduct environmental education in the same community where LIRE is planning the installation.

## **2. Questions and Comments from National University of Laos**

Vice Dine of Faculty of Science, National University of Laos, asked why BOD value decreases in accordance with going downstream, and requested to share the experiences and data together between the university and the study team.

The study team answered that water quality purification occurred through SS settling by vegetation filter and increase of DO by photosynthesis of algae and natural aeration effects by shallow flow. The team agreed upon future continuous cooperation.

## **3. Questions from WWF**

WWF representative mentioned that remaining marshes should be conserved to maintain their flood retention and water purification functions, but how secured their areas in future.

The team replied that urban planning study under JICA would start in the near future, and urban planning could be suitable tools for conservation of That Luang marsh as well as remaining marshes in the urban areas.

## **4. Comments from Department of Health, Vientiane City**

Deputy Director of DOH emphasized that propagation of mosquitoes would be one of the problems after water environmental improvement, and DOH needed to work cooperatively with the team in phase II.

The team agreed upon the comments and promised to collect the information prevention of mosquitoes' propagation.

## **5. Comments from Department of Public Works and Transport, Vientiane City**

Technical staff of DPWT made the following comments; (1) Recommendation on water quality standard as a target of the master plan was agreeable, but situation on wastewater in both countries, Laos and the Philippines, might be different. (2) There was no suitable treatment system for New City Development. (3) What kind of wastewater treatment should be done in the industrial area. (4) What kind of facilities the team considered for communal sanitation system.

The team replied as follows; (1) The standard which the team mentioned was set up by water usage, e.g. for fishery, or for agriculture. Fish species and agricultural products were similar in both countries so that the standard of the Philippines could be applied to Laos. (2) There is a large wastewater treatment pond constructed by EU in the New City Development area. Thus DPWT should consider

how utilize the EU pond for wastewater treatment. (3) “The Preparatory Survey on Industrial Zone Development in Laos” under JICA was being carried out. Outcomes in the survey could be used for industrial wastewater treatment facilities.

Project manager of BORDA explained their CBS (Community Based Sanitation) and DEWATS (Decentralized Wastewater Treatment System) with experiences in Indonesia.

#### **6. Comments from Public Works and Transport Institute (PTI)**

Deputy Director of PTI suggested; (1) The major issue of popular use of septic tank was how the house owners could willingly install the septic tank. Some budgetary support such as a subsidy might be necessary for this purpose. (2) Another issue was how the sites of priority projects could be secured. Land of canal was not owned by VUDAA, but drainage structures were maintained by VUDAA.

#### **7. Comments from JICA Expert, MPWT**

According to the experiences in Japan, it took a considerable time to appear the effects of improvement works in water environment. The proper measures should be taken in a sustainable manner with a long-range perspective.

#### **8. Comments from VUDAA**

In recent years, landscape and land use in Vientiane City had been changed drastically due to rapid urbanization. Severe flooding might be apprehensive about frequent occurrence in the outskirt of the City area. Thus additional new drainage canal system should be necessary to prevent such situation.

### **III. Summary and Closing Remarks**

For and on behalf of the chairman, Deputy Director of PTI summarized the discussion results. Finally he gave closing remarks to expect the further progress of the study and the meeting was closed.

## **ATTACHMENT**

List of participants in the Steering Committee Meeting for Presentation of Progress Report 1 on September 9, 2009 at the Meeting Room of Ministry of Public Works and Transport (MPWT)

### **Lao Side**

#### **Ministry of Public Works and Transport**

Mr. Sithong THONGKEO	Vice Minister	
Mr. Thenekham THONGBON	Deputy Director	Public Works and Transport Institute
Mr. Khamthavi THAIPACHAN	Acting Director	Department of Housing and Urban Planning
Mr. Bounphanh	Deputy Director	Department of Water Way
Ms. Vanh VIRAPANT	Staff	Department of Housing and Urban Planning
Mr. Koyen MURAOKA	JICA Expert	MPWT
Mr. Vongsack MIXAY	Project Coordinator	Public Works and Transport Institute

#### **Water Resources and Environment Administration (WREA)**

Mr. SengKeo TASAKET	Technical staff	Department of Environment
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#### **Vientiane City**

Mr. Oudong NHENGVANNAVONG	Deputy Director	Department of Public Works and Transport
Mr. Somechayvang DETOUDOM	Technical Staff	Department of Public Works and Transport
Mr. Ketkeo SIHALATH	Vice President	VUDAA
Mr. Sonetavy PHIMMASAN	Deputy Head	Housing section, VUDAA
Mr. Dr. Khamtanh BOUNPHAYVANH	Deputy Director	Department of Public Health
Mr. Amphone	Deputy Director	Department of Agriculture and Forestry
Mr. Sompath SENEPHEMMACHAK	Technical Staff	Department of Agriculture and Forestry
Ms. Viengphone VIRAVONG	Deputy Director	Department of Industry and Commerce
Mr. Sounalath SOUKCHALEAR	Staff	Department of Industry and Commerce
Ms. Boutsady SIPHILOM	Deputy head	Water Resources and Environment Office
Mr. Sommith SANDCHONGHAK	Engineer	Water Resources and Environment Office
Mr. Sengaloon VONGPHOUTHONE	Head of Admin.	Department of Education
Mr. Saythivi NHENGVANNAVONG	Chief of Secretariat	Vientiane New City Development Project
Mr. Silavanh	Staff	Department of Science and Technology

#### **National University of Laos**

Ms. Dr. Somechan BOUNPHANMY	Vice Dean	Faculty of Science
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**NGO**

Ms. Pauline GERRAD	Project Manager	WWF
Ms. Noica DESTALINA	Project Manager	BORDA
Mr. Sengdeuan	Project Assistant	LIRE

**Japanese Side**

Mr. Koichi TAKEI	Senior Representative	JICA Laos Office
Ms. Yoko HATTORI	Representative	JICA Laos Office
Mr. Kayasith	PO	JICA Laos Office
Mr. Kanehiro MORISHITA	Team Leader	JICA Study Team
Mr. Yasuhiko KATO	Environmental Education	JICA Study Team
Ms. Kyoko MISHIMA	Ecological Conservation/EIA	JICA Study Team
Mr. Hiroshi SHIMOKOCHI	Sanitation/Water Quality	JICA Study Team



# The Study on Improvement of Water Environment in Vientiane City

ລາຍຊື່ຜູ້ເຂົ້າຮ່ວມ ກອງປະຊຸມລາຍງານຄວາມຄືບໜ້າຂອງໂຄງການສຶກສາປັບປຸງ ລະບົບລະບາຍນ້ຳ ມະຄອນຫຼວງວຽງຈັນ, ວັນທີ 9 ເດືອນ ກັນຍາ ປີ 2009

Progress Report Meeting , Sep 9/09/2009

No.	ຊື່ ແລະ ນາມສະກຸນ	ຕຳແໜ່ງ	ພາກສ່ວນ	ໂທລະສັບ	ເບີແຟກ	ອີເມວ	ລາຍເຊັນ
	Name and Surname	Position	Organization	Telephone	Fax	E-mail	Signature
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2	Mr. Somsakulath	Official	—	5629215	—	—	—
3	Mr. Kaysith	PO	JICA	6414995	241101	jicala-inf@jica.go.jp	[Signature]
4	Mr. Sengthany Phommavong	Deputy of Housing	VUDAA	8200669	212104	sica.go.jp	[Signature]
5	Mr. Somnith Somsithongkham	Engineer	WDEA	8401526	212113	Somsithongkham@vte.gov.la	[Signature]
6	Mr. Khamthany	Acting DG	DHUP	576353	412284	—	[Signature]
7	Mr. Sengkeo Tanakhet	Technical	WIREA DAE	2001772	021 21817	tsengkeo@wirea.gov.la	[Signature]
8	Mr. Bontea SATHACORN	Vice President	VUDAA	520213	212104	—	[Signature]
9	Mr. Thenekham	DDG	PTI	574533	—	—	[Signature]
10	Mr. Khamtanb	Deputy-director for Public Health of VTE	Public Health of VTE	161853	—	—	[Signature]
11	Mr. Kayen Mueoeka	JICA Expert	MAPWT	5509255	444893	—	[Signature]
12	Mr. Somsakulath	—	—	5510749	444893	—	[Signature]
13	Mr. Sengthany	—	—	2210999	264818	—	[Signature]
14	Mr. Somsakulath	—	—	5414978	—	—	[Signature]
15	Mr. Somsakulath	—	—	812651	812659	Somsakulath@vte.gov.la	[Signature]
16	Mr. Somsakulath	—	—	2208766	457926	Somsakulath@vte.gov.la	[Signature]
17	Mr. Somsakulath	—	—	5155390	353128	Com	[Signature]
18	Mr. Somsakulath	Project Manager	WWF	220653405	—	radio.general@un-fg.org	[Signature]
19	Mr. Somsakulath	Project Manager	BORDA	0207425881	—	nora@borda.de	[Signature]
20	Sengthany	Project Assistant	Live	7896666	—	live@live.org	[Signature]

# The Study on Improvement of Water Environment in Vientiane City

ລາຍຊື່ເຂົ້າຮ່ວມ ກອງປະຊຸມລາຍງານຄວາມຄືບໜ້າຂອງໂຄງການສຶກສາປັບປຸງ ລະບົບລະບາຍນ້ຳ ນະຄອນຫຼວງວຽງຈັນ, ວັນທີ 9 ເດືອນ ກັນຍາ ປີ 2009

Progress Report Meeting , Sep 9/09/2009

No.	ຊື່ ແລະ ນາມສະກຸນ		ຕຳແໜ່ງ	ພາກສ່ວນ	ໂທລະສັບ	ເບີໂຟນ	ອີເມວ	ລາຍເຊັນ
	Name and Surname	Position	Organization	Telephone	Fax	E-mail	Signature	
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22	Bouaphanh	D.G	Dept. of Waterway	5622644	416430			
23	Vanh Dilaphanh	Staff	DHUP	911322	412282	klaphanhvana@yahoo.com		
24	Somphath	staff	AFD	5667581	021480505	-		
25	Somsavanh Souphannay	Vice Dean	Nuol	221569	740173	souphannay@yahoo.com		
26	Mr. Sengalanh Vongsavanh	Head of adm.	Education Department	2218099	252351			
27	Mr. Sithong Thongkeo	Vice Minister	HPWT					
28	Ms Hattori Yoko	R	JICA	241100	241101			
29	Mr Koichi TAKIZ	Senior Representative				Takei. koichi@jica.go.jp		
30	Mr. Yasuhiko KATO	Team member	JICA Study Team	2428878				
31	Kyoko Nishimura	Team member	JICA Study Team					
32	Mr Hiroshi SHIMOKUCHI	Team Member	JICA Study Team	0207836401				
33	Mr Kanehiro MORISHITA	Team Leader	JICA Study Team	0204205455				
34	Mr. Vongsack MIXAY	Project coordinator	PTI	020 2222204	263177			
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